(HOW E-LEARNING CAN BE UTILIZED IN ENGINEERING PROGRAMS TO MEET THE MYANMAR ENGINEERING COUNCIL'S ACCREDITATION REQUIREMENTS)

IQY Technical College's academic policy & procedure in line with Myanmar Engineering Council's Accreditation Requirements & Sample of Educational Institution Documents (By Dr Kyaw Naing)

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Executive Summary

This is voluntary information related to IQY Technical College's online engineering programs & this information report related to sample engineering programs, curriculums and learning materials is prepared by citing the accreditation manual of Myanmar Engineering Council

Objective

Although it is not a main objective of IQY Technical College to seek the accreditation in Myanmar, the main reason to prepare this document is to be referred by relevant course developers of the Government Technical Colleges & Technological Universities in Myanmar how to fulfil the international standard accreditation procedures as the writer of this documents have over 25 years experiences in teaching, designing & implementation of engineering programs in Fiji, Australia & New Zealand in accordance with Australian/ New Zealand standards.

It is solely aimed to share the knowledge with engineering educators in Myanmar especially to develop e-Learning which is new to most educators in Myanmar. This submission describes how e-Learning in engineering can be effectively applied to fulfil the accreditation needs of Myanmar Engineering Council because Government Technical Colleges & Technological Universities are spread throughout Myanmar & e-Learning is the only most effective way to equalize teaching & learning at different geographical locations of Myanmar.

The document contains the online links from where the relevant documents can be downloaded.

9.2.1 General Information (MEng C)

i. Provide general information on the Technological Institutions and the specific programme.

- IQY Technical College of Highlight Computer Group teaches St Clements Technological University, St Clements University Higher Education School Niue's Diploma/ Advanced Diploma and Bachelor Degree programs in Engineering, Information Technology and Management courses to the students of Myanmar at the price affordable to average working class people of Myanmar.

- E-Learning system that provides on line & off line DVD/USB based teaching system is utilized for the student to do self directed learning combined with simulated practical video/ slide shows and audio/ visual aids are utilized to effectively apply Information Technology in e-Learning & Teaching.
- The main objective of our program is to maximize the individual student's self directed learning by applying the maximum use of technology & by minimizing the teacher's assistance personally .
- Although IQY Technical College refers & applies the relevant international educational standards, IQY Technical College maintains it's academic independency.

ii. Provide detailed information on programme history of accreditation (year of accreditation, conditions imposed and actions taken). (MEng C)

Further Submission

iii. Describe any self-initiated changes made to the programme and state the year the changes were introduced (MEng C)

Further Submission

Programme Objectives.

http://www.highlightcomputer.com/objectives.htm

9.2.2 Programme Objectives

I State the vision and mission of the Technological Institutions. (MEng C)

- IQY Technical College of Highlight Computer Group teaches St Clements Technological University, St Clements University Higher Education School Niue's Diploma/ Advanced Diploma and Bachelor Degree programs in Engineering, Information Technology and Management courses to the students of Myanmar at the price affordable to average working class people of Myanmar.
- IQY Technical College of Highlight Computer Group will independently provide the international standard education & engineering education to the poor students of Myanmar whom are being taught by the voluntary education groups of Myanmar .
- IQY Technical College is Non Profit/ Non Government Educational Organization which assist the needy students of Myanmar as well as the students in other developing countries by co-operating with the international organizations of same objectives/ visions and missions.

Ii Describe the Programme Objectives and state where they are published. (MEng C)

- IQY Technical College offers three levels of Engineering Programs

    1. One year Diploma in Engineering
    2. Two years Advanced Diploma in Engineering
    3. Four years Professional Diploma in Engineering which is set at the same level of standard to Bachelor of Engineering degree

- The entry requirement for IQY Technical College is Year 12 . The students who have less than year 12 level education will need to undertake IQY Technical College's Year 11+12 programs which are set at Australian NSW State Year 12 Standard.

- Based on the entry Year 12 standard, Year one to four Academic programs are arranged.

The objectives

Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology)

IQY Technical College's one year Diploma in Engineering is designed to train the students to work as Engineering Associate or Engineering Technicians in wide ranges of industries.

It is designed to provide the following competencies.

To train the students to have a wide range of functions within engineering enterprises and engineering teams.

The training is designed for the students

- To be closely familiar with standards and codes of practice, and to become expert in their interpretation and application to a wide variety of situations.
- To develop very extensive experience of practical installations, and may well be more knowledgeable than Professional Engineers or Engineering Technologists on detailed aspects of plant and equipment that can contribute very greatly to safety, cost or effectiveness in operation.
- To develop high levels of expertise in aspects of design and development processes. These might include, for example, the use of advanced software to perform detailed design of structures, mechanical components and systems, manufacturing or process plant, electrical and electronic equipment, information and communications systems, and so on.
- To do the construction of experimental or prototype equipment.
- To develop detailed practical knowledge and experience complementing the broader or more theoretical knowledge of others.

Advanced Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology) Course Outlines

IQY Technical College's two years Advanced Diploma in Engineering is designed to train the students to work as Engineering Technologist in wide ranges of industries.

The training is designed to provide expertise to the students which may be at a high level, and fully equivalent to that of a Professional Engineer. That is designed

- to exercise the same breadth of perspective as Professional Engineers, or carry the same wide-ranging responsibilities for stakeholder interactions, for system integration, and for synthesising overall approaches to complex situations and complex engineering problems.
- to possess for a strong understanding of practical situations and applications, with the intellectual challenge of keeping abreast of leading-edge developments as a specialist in a technology domain and how these relate to established practice. For this purpose Engineering Technologists need a strong understanding of scientific and engineering principles and a well-developed capacity for analysis.
- to apply current and emerging technologies, often in new contexts; or with the application of established principles in the development of new practice.
- To contribute to the advancement of technology.
- to take responsibility for engineering projects, services, functions and facilities within a technology domain, for specific interactions with other aspects of an overall operating context and for managing
- to contribute the specialist work to a broader engineering system or solution. In these roles, Engineering
- to focus on sustainable solutions and practices which optimise technical, social, environmental and economic outcomes within the technology domain and over a whole systems life cycle.
- to have an intimate understanding of the standards and codes of practice that underpin the technology domain and ensure that technology outcomes comply with statutory requirements. Engineering Technologists are required to interact effectively with Professional Engineers and Engineering Associates, with other professionals, tradespersons, clients, stakeholders and society in general, to ensure that technology outcomes and developments fully integrate with the overall system and context.
- to ensure that all aspects of a technological product, or operation are soundly based in theory and fundamental principle.
- to understand how new developments relate to their specific field of expertise.
- to interpret technological possibilities, to investigate interfaces, limitations, consequences, costs and risks.

Professional Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology)

IQY Technical College's four years Professional Diploma in Engineering is designed to train the students to work as Engineering Technologist /Professional Engineer in wide ranges of industries.

It is designed to provide the following competencies.

- To perform the reliable functioning of all materials, components, sub-systems and technologies used; their integration to form a complete, sustainable and self-consistent system; and all interactions between the technical system and the context within which it functions. The latter includes understanding the requirements of clients, wide ranging stakeholders and of society as a whole; working to optimise social, environmental and economic outcomes over the full lifetime of the engineering product or program; interacting effectively with other disciplines, professions and people; and ensuring that the engineering contribution is properly integrated into the totality of the undertaking.
- To do interpreting technological possibilities to society, business and government; and for ensuring as far as possible that policy decisions are properly informed by such possibilities and consequences, and that costs, risks and limitations are properly understood as the desirable outcomes.
- To bring knowledge to bear from multiple sources to develop solutions to complex problems and issues, for ensuring that technical and non-technical considerations are properly integrated, and for managing risk as well as sustainability issues. While the outcomes of engineering have physical forms, the work of
- To train the students to become predominantly intellectual in nature. In a technical sense, Professional Engineers are primarily concerned with the advancement of technologies and with the development of new technologies and their applications through innovation, creativity and change. Professional Engineers may conduct research concerned with advancing the science of engineering and with developing new principles and technologies within a broad engineering discipline.
- To contribute to continual improvement in the practice of engineering, and in devising and updating the codes and standards that govern it.
- To take a particular responsibility for ensuring that all aspects of a project are soundly based in theory and fundamental principle, and for understanding clearly how new developments relate to established practice and experience and to other disciplines with which they may interact. One hallmark of a professional is the capacity to break new ground in an informed, responsible and sustainable fashion.

iii. Describe how the Programme Objectives are consistent with the vision and mission of the Technological Institutions and stakeholder requirements. (MEng C)

Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology)

The training includes feasibility investigation, scoping, establishing criteria/performance measures, assessing and reporting technical and procedural options; design and development; component,

resources and materials sourcing and procurement; construction, prototyping, manufacture, testing, installation, commissioning, service provision and de-commissioning; tools, plant, equipment and facilities acquisition, management, maintenance, calibration and upgrades; operations management; procedures documentation; presentation and reporting; maintenance systems design and management; project and facility management; quality assurance, costing and budget management; document control and quality assurance.

The training is also designed to provide a good grounding in engineering science and the principles underlying their field of expertise, to ensure that their knowledge and skills are portable across different applications and situations within the broad field of practice. Equipment, vendor or context-specific training in a particular job are not sufficient to guarantee generic competency. Given a good knowledge base, however, the graduates may build further on this through high levels of training in particular contexts and in relation to particular equipment.

The competencies of graduates to equip them to certify the quality of engineering work and the condition of equipment and systems in defined circumstances, laid down in recognised standards and codes of practice.

The training is also designed to lead or manage teams appropriate to these activities. Some may establish their own companies or may move into senior management roles in engineering and related enterprises, employing Professional Engineers, Engineering Technologists, and other specialists where appropriate.

Diploma in Electrical Engineering

This program is designed with 30 credit points integrating 15 credit points Certificate in Electrical Engineering. The completion of this program can be articulated into 60 points Advanced Diploma in Electrical Engineering & 120 credit points Professional Diploma in Electrical Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Diploma in Electrical Engineering can apply for Associate Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Diploma in Mechanical Engineering

This program is designed with 30 credit points integrating 15 credit points Certificate in Mechanical Engineering. The completion of this program can be articulated into 60 points Advanced Diploma in Mechanical Engineering & Mechatronics & 120 credit points Professional Diploma in Mechanical Engineering & Mechatronics which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Diploma in Mechanical Engineering can apply for Associate Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Diploma in Civil Engineering

This program is designed with 30 credit points integrating 15 credit points Certificate in Civil Engineering & Construction Studies . The completion of this program can be articulated into 60 points Advanced Diploma in Civil Engineering & 120 credit points Professional Diploma in Civil Engineering & Building Services which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Diploma in Civil Engineering can apply for Associate Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Diploma in Renewable Energy Engineering

This program is designed with 30 credit points integrating 15 credit points Certificate in Renewable Energy Course Completion Certificate which is delivered through the public seminars . The completion of this program can be articulated into 120 credit points Professional Diploma in Renewable Energy Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Diploma in Renewable Energy Engineering can apply for Associate Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Diploma in Computer Engineering/ Diploma in Information Technology

This program is designed with 30 credit points integrating 15 credit points Certificate in Information Technology . The completion of this program can be articulated into 60 points Advanced Diploma in Information Technology & 120 credit points Professional Diploma in Information Technology or Professional Diploma in Computer Engineering which is the award of Bachelor of Applied Science (Information Technology)/Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Diploma in Computer Engineering can apply for Associate Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

The graduates of Diploma in Information Technology can apply for membership of International Institute of Science Engineering & Management.

To be awarded Diploma in Computer Engineering, the students need to do Diploma in Information Technology & Diploma in Electrical Engineering at the same time.

Advanced Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology) Course Outlines

It is designed to provide the following competencies.

To train the students to operate within broadly-defined technical environments, and undertake a wide range of functions and responsibilities. They are often specialists in the theory and practice of a particular branch of engineering technology or engineering-related technology (the technology domain), and specifically in its application, adaptation or management, in a variety of contexts. Their expertise often lies in familiarity with the current state of development of a technology domain and most recent applications of the technology.

The training is also designed to provide the skills of Engineering Technologists who may lead teams responsible for the implementation, operation, quality assurance, safety, management, and maintenance of projects, plant, facilities, or processes within specialist practice area(s) of the technology domain. Some Engineering Technologists may establish their own companies or may move into senior management roles in engineering and related enterprises, employing Professional Engineers and other specialists where appropriate.

Advanced Diploma in Engineering can be studied in the following specializations

- Advanced Diploma in Electrical Engineering
- Advanced Diploma in Mechanical Engineering
- Advanced Diploma in Civil Engineering
- Advanced Diploma in Renewable Energy Engineering
- Advanced Diploma in Computer Engineering / Advanced Diploma in Information Technology

Advanced Diploma in Electrical Engineering

This program is designed with 60 credit points integrating 30 credit points Diploma in Electrical Engineering. The completion of this program can be articulated into 60 of 120 credit points Professional Diploma in Electrical Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Advanced Diploma in Electrical Engineering can apply for Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Advanced Diploma in Mechanical Engineering

This program is designed with 60 credit points integrating 30 credit points Diploma in Mechanical Engineering. The completion of this program can be articulated into 60 of 120 credit points Professional Diploma in Mechanical Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Advanced Diploma in Mechanical Engineering can apply for Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Advanced Diploma in Civil Engineering

This program is designed with 60 credit points integrating 30 credit points Diploma in Civil Engineering. The completion of this program can be articulated into 60 of 120 credit points Professional Diploma in Civil Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Advanced Diploma in Civil Engineering can apply for Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Advanced Diploma in Renewable Energy Engineering

This program is designed with 60 credit points integrating 30 credit points Certificate in Renewable Energy Course Completion Certificate which is delivered through the public seminars . The completion of this program can be articulated into 120 credit points Professional Diploma in Renewable Energy Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Advanced Diploma in Renewable Energy Engineering can apply for Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Advanced Diploma in Computer Engineering/ Advanced Diploma in Information Technology

This program is designed with 30 credit points integrating 30 credit points Diploma in Information Technology . The completion of this program can be articulated into 60 of 120 credit points Professional Diploma in Information Technology or Professional Diploma in Computer Engineering which is the award of Bachelor of Applied Science (Information Technology)/Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Advanced Diploma in Computer Engineering can apply for Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

The graduates of Advanced Diploma in Information Technology can apply for membership of International Institute of Science Engineering & Management.

To be awarded Advanced Diploma in Computer Engineering, the students need to do Advanced Diploma in Information Technology & Diploma in Electrical Engineering at the same time.

Professional Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology)

It is designed at the same academic requirement as to Bachelor of Engineering degree but IQY Technical College is operating as a vocational education & training college not as a university, the award is to be described as Professional Diploma. The graduates of the Professional Diploma in Engineering can be awarded Bachelor of Engineering by the universities which are affiliated to IQY Technical College.

The program is designed to train the students to become Professional Engineers who are required to take responsibility for engineering projects and programs in the most far-reaching sense.

The program is also designed to provide the skills required for the graduated to lead or manage teams appropriate to these activities, and may establish their own companies or move into senior management roles in engineering and related enterprises.

Professional Diploma in Engineering can be studied in the following specializations

- Professional Diploma in Electrical Engineering
- Professional Diploma in Mechanical Engineering
- Professional Diploma in Civil Engineering
- Professional Diploma in Renewable Energy Engineering
- Professional Diploma in Computer Engineering / Professional Diploma in Information Technology

Professional Diploma in Electrical Engineering

This program is designed with 120 credit points integrating 60 credit points Advanced Diploma in Electrical Engineering. The completion of this program can be awarded Professional Diploma in Electrical Engineering together with the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Professional Diploma in Electrical Engineering can apply for Fellow of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technologists or ASEAN Engineer.

Professional Diploma in Mechanical Engineering

This program is designed with 120 credit points integrating 60 credit points Advanced Diploma in Mechanical Engineering. The completion of this program can be awarded Professional Diploma in Mechanical Engineering together with the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Professional Diploma in Mechanical Engineering can apply for Fellow of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technologists or ASEAN Engineer.

Professional Diploma in Civil Engineering

This program is designed with 120 credit points integrating 60 credit points Advanced Diploma in Civil Engineering. The completion of this program can be awarded Professional Diploma in Civil Engineering together with the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Professional Diploma in Civil Engineering can apply for Fellow of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technologists or ASEAN Engineer.

Professional Diploma in Renewable Energy Engineering

This program is designed with 120 credit points integrating 60 credit points Advanced Diploma in Renewable Energy Engineering. The completion of this program can be awarded Professional Diploma in Renewable Energy Engineering together with the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

This program explores the way to make the best use of renewable energy technologies including solar thermal systems, photovoltaics, wind and biomass. Renewable Energy Engineering borrows much of its structure from some other areas of engineering, such as electrical engineering and photovoltaic engineering. It encompasses a broad range of renewable energy technologies including electricity generation from solar thermal systems, photovoltaics, wind and biomass. It also covers solar architecture and energy efficient housing design

The graduates of Professional Diploma in Renewable Energy Engineering can apply for Fellow of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technologists or ASEAN Engineer.

Professional Diploma in Computer Engineering/ Professional Diploma in Information Technology

This program is designed with 120credit points integrating 60 credit points Advanced Diploma in Information Technology . Professional Diploma in Computer Engineering which is the award of Bachelor of Applied Science (Information Technology)/Bachelor of Engineering degree by the universities affiliated IQY Technical College.

The graduates of Professional Diploma in Computer Engineering can apply for Fellow of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technologist or ASEAN Engineer.

The graduates of Professional Diploma in Information Technology can apply for membership of International Institute of Science Engineering & Management.

To be awarded Professional Diploma in Computer Engineering, the students need to do some Bachelor of Engineering (Electrical) units at the same time.

iv. Describe the processes used to establish and review the Programme Objectives, and the extent to which the programme's various stakeholders are involved in these processes.

v Describe how the Technological Institutions ensures achievement of the Programme Objectives.

vi. Describe the ongoing evaluation of the level of achievement of these objectives, and the extent to which the programme's various stakeholders are involved in these processes.

vii. Describe how the results obtained from evaluation are being used to improve the effectiveness of the program (MEng C)

Please see Attachment 1.Assessment Validation Records 2.Assessment Evidences 3.Quality Assurance Records

9.2.3 Learning Outcomes

I List down the Learning Outcomes and state where are they published. (MEng C)

Diploma / Advanced Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology)

1. KNOWLEDGE AND SKILL BASE

1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain.

1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain.

1.3. In-depth understanding of specialist bodies of knowledge within the technology domain.

1.4. Discernment of knowledge development within the technology domain.

1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain.

1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.

2. ENGINEERING APPLICATION ABILITY

2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain.

2.2. Application of engineering techniques, tools and resources within the technology domain.

2.3. Application of systematic synthesis and design processes within the technology domain.

2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.

3. PROFESSIONAL AND PERSONAL ATTRIBUTES

3.1. Ethical conduct and professional accountability.

3.2. Effective oral and written communication in professional and lay domains.

3.3. Creative, innovative and pro-active demeanour.

3.4. Professional use and management of information.

3.5. Orderly management of self, and professional conduct.

3.6. Effective team membership and team leadership.

Professional Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology)

COMPETENCIES

1. KNOWLEDGE AND SKILL BASE

1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.

1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.

1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline.

1.4. Discernment of knowledge development and research directions within the engineering discipline.

1.5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline.

1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.

2. ENGINEERING APPLICATION ABILITY

2.1. Application of established engineering methods to complex engineering problem solving.

2.2. Fluent application of engineering techniques, tools and resources.

2.3. Application of systematic engineering synthesis and design processes.

2.4. Application of systematic approaches to the conduct and management of engineering projects.

3. PROFESSIONAL AND PERSONAL ATTRIBUTES

3.1. Ethical conduct and professional accountability.

3.2. Effective oral and written communication in professional and lay domains.

3.3. Creative, innovative and pro-active demeanour.

3.4. Professional use and management of information.

3.5. Orderly management of self, and professional conduct.

3.6. Effective team membership and team leadership.

Ii how the Learning Outcomes relate to the Programme Objectives.

iii. Describe the processes used to establish and review the Learning Outcomes, and the extent to which the programme's various stakeholders are involved in these processes.

i Describe the data gathered and explain the results of the assessment.

v Explain how the assessment results are applied to further develop and improve the programme.

vi. Describe the materials, including student work and other tangible materials that demonstrate

Processes and Results: (MEng C) The programme shall have a clear linkage between Programme Objectives and Learning Outcomes (Section 4.0); a process of ongoing assessment an evaluation that demonstrates the achievement of Programme Objectives with documented results; and evaluation results that are used in the continual improvement of the programme.

Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology)

Program Objective	Learning Outcome
• To be closely familiar with standards and codes of practice, and to become expert in their interpretation and application to a wide variety of situations.	1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain.
• To develop very extensive experience of practical installations, and may well be more knowledgeable than Professional Engineers or Engineering Technologists on detailed aspects of plant and equipment that can contribute very greatly to safety, cost or effectiveness in operation. •	1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain. 1.3. In-depth understanding of specialist bodies of knowledge within the technology domain. 1.4. Discernment of knowledge development within the technology domain. 1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.
• To develop high levels of expertise in aspects of design and development processes. These might include, for example, the use of advanced software to perform detailed design of structures,	2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain.

mechanical components and systems, manufacturing or process plant, electrical and electronic equipment, information and communications systems, and so on. • To do the construction of experimental or prototype equipment.	2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.
• To develop detailed practical knowledge and experience complementing the broader or more theoretical knowledge of others.	3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.

Advanced Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology)

Program Objective	Learning Outcome
• to exercise the same breadth of perspective as Professional Engineers, or carry the same wide-ranging responsibilities for stakeholder interactions, for system integration, and for synthesising overall approaches to complex situations and complex engineering problems. • to possess for a strong understanding of practical situations and applications, with the intellectual challenge of keeping abreast of leading-edge developments as a specialist in a technology domain and how these relate to established practice. For this purpose Engineering Technologists need a strong understanding of scientific and engineering principles and a well-developed capacity for analysis. • .	1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain. 1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain. 1.3. In-depth understanding of specialist bodies of knowledge within the technology domain. 1.4. Discernment of knowledge development within the technology domain. 1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.
• to apply current and emerging technologies, often in new contexts; or with the application of established principles in the development of new practice. • To contribute to the advancement of technology. • to take responsibility for engineering projects, services, functions and facilities within a technology domain, for specific interactions with other aspects of an overall operating context and for managing	2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain. 2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.

• to contribute the specialist work to a broader engineering system or solution. In these roles, Engineering • to focus on sustainable solutions and practices which optimise technical, social, environmental and economic outcomes within the technology domain and over a whole systems life cycle.	
• to have an intimate understanding of the standards and codes of practice that underpin the technology domain and ensure that technology outcomes comply with statutory requirements. Engineering Technologists are required to interact effectively with Professional Engineers and Engineering Associates, with other professionals, tradespersons, clients, stakeholders and society in general, to ensure that technology outcomes and developments fully integrate with the overall system and context. • to ensure that all aspects of a technological product, or operation are soundly based in theory and fundamental principle. • to understand how new developments relate to their specific field of expertise. • to interpret technological possibilities, to investigate interfaces, limitations, consequences, costs and risks	3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.

Professional Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology)

Program Objective	Learning Outcome
• To perform the reliable functioning of all materials, components, sub-systems and technologies used; their integration to form a complete, sustainable and self-consistent system; and all interactions between the technical system and the context within which it functions. The latter includes understanding the requirements of clients, wide ranging stakeholders and of society as a whole; working to optimise social, environmental and economic outcomes over the full lifetime of the engineering product or program; interacting effectively with other disciplines, professions and people; and ensuring that the engineering contribution is properly integrated into the totality of the undertaking. • To do interpreting technological possibilities to society, business and government; and for ensuring as far as possible that policy decisions are properly informed by such possibilities and consequences, and that costs, risks and limitations are properly understood as the desirable outcomes.	1. KNOWLEDGE AND SKILL BASE 1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline. 1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline. 1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline. 1.4. Discernment of knowledge development and research directions within the engineering discipline. 1.5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.
• To bring knowledge to bear from multiple sources to develop solutions to complex problems and issues, for ensuring that technical and non-technical considerations are properly integrated, and for managing risk as well as sustainability issues. • To train the students to become predominantly intellectual in nature. In a	2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to complex engineering problem solving. 2.2. Fluent application of engineering techniques, tools and resources. 2.3. Application of systematic engineering

technical sense, Professional Engineers are primarily concerned with the advancement of technologies and with the development of new technologies and their applications through innovation, creativity and change. Professional Engineers may conduct research concerned with advancing the science of engineering and with developing new principles and technologies within a broad engineering discipline	synthesis and design processes. 2.4. Application of systematic approaches to the conduct and management of engineering projects.
• To contribute to continual improvement in the practice of engineering, and in devising and updating the codes and standards that govern it. • To take a particular responsibility for ensuring that all aspects of a project are soundly based in theory and fundamental principle, and for understanding clearly how new developments relate to established practice and experience and to other disciplines with which they may interact. One hallmark of a professional is the capacity to break new ground in an informed, responsible and sustainable fashion.	3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.

(iii) Stakeholders Involvement: The Technological Universities/Institutions shall provide evidence of stakeholder involvement with regard to (i) and (ii) above

Please see Attachment Industry Consultation Folder

http://www.highlightcomputer.com/industryconsultation.htm

8.0 Qualifying Requirements and Accreditation Criteria (MEng C)

An engineering programme shall be assessed by EAC to enable graduates of the programme to register as graduate engineers with the M.Eng.C. The assessment involves a review of qualifying

requirements of the Technological Institutions and an evaluation based on the following criteria, apart from

Programme Objectives (4.0) and Learning Outcomes (5.0):

1 Academic Curriculum

9.2.4 Academic Curriculum

- Discuss the programme structure and course contents to show how they are appropriate to,consistent with, and support the development of the range of intellectual and practical skills and attainment or achievement of the Learning Outcomes. (MEng C)

IQY Technical College's Diploma program is focussed on practical applications, use of materials, tools & equipment by combining with theoretical studies at tradesmen/ technician level, it will provide the foundation of engineering studies.

At the advanced diploma level, more complex level engineering contents , applied science & mathematics contents & cross-disciplinary engineering and management contents are included.

At the professional diploma level , the skills required for the graduated to lead or manage teams appropriate to these activities, and may establish their own companies or move into senior management roles in engineering and related enterprises are provided.

- Discuss the programme delivery and assessment methods and how these are appropriate to,consistent with, and support the development of the range of intellectual and practical skills and attainment or achievement of the Learning Outcomes. (MEng C)

Program deliver y & assessment at Diploma & Advanced level

The students are provided with online lessons, study guides which include audio visual explanations in both English & Myanmar languages. The electronic text books and reference books are also provided.

For the students who can not have the access to the high speed internets are provided with DVDs, CDs and USBs consisting of the lessons.

It has established the learning platform from which the study guides & instructions, exercise, assignments , audio & video lessons can be downloaded.

http://www.highlightcomputer.com/onlineteaching1.htm

To provide the online teaching to be the same learning environment as to face to face class , IQY Technical College has established the online videos & Youtube videos of lectures.

Youtube videos of lectures

http://www.highlightcomputer.com/videos2.htm

Online videos

http://www.highlightcomputer.com/videos1.htm

Online practical simulation at Level 1 is also provided.

Practical is important aspect in engineering education. IQY Technical College also provides the engineering practicals by online mode.

It has established the online practical support websites to provide three levels of engineering practicals.

The sites are

http://www.highlightcomputer.com/PracticalCourses.htm

&

http://www.iqytechnicalcollege.com/youtubevideos.htm

Level 1- Tradesmen Level in which the basic trades tasks videos such as brick laying, motor winding, wiring, engine fittings, machining etc are presented.

Level 2- Technician Level in which the technician tasks such as electrical laboratory, surveying etc are presented

Level 3- Engineer Level in which use of engineering design handbooks are presented.

For all three levels, the reference books related to practical applications are presented.

Assessment

The students need to do the continuous study as per guidelines and instruction provided in study guides and do the exercises. They are required to regularly submit the assignments and sit the online MCQ tests

Online Theory & MCQ Practice

http://www.filefactory.com/file/6m8zvfek7797/n/Online_Theory_MCQ_Practice_pdf

Online Practical Practice

http://www.filefactory.com/file/3ap0vv6o8azx/n/Online_Practical_Practice_pdf

Upon satisfactory completion of the assessments, the progression is granted.

Upon completion of all units / subject in the program, the qualification is awarded.

Program deliver y & assessment at Professional Diploma level

The same learning system is applied. But for the professional diploma level, the written tests as well as engineering management, project tasks , design presentation and engineering competency demonstration report writings are included in the assessment.

- The information required in items (i) and (ii) should include but is not limited to the following:
- A matrix linking courses to Learning Outcomes to identify and track the contribution of each course to the Learning Outcomes. (Overall Learning outcomes link to each unit)
- Distribution of engineering courses according to areas specific to each program

(MEng C)

Diploma in Electrical Engineering

Learning Outcome	Subjects	Study Area
1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain.	EE101 DC Circuit Problems EE113 Electrical Fundamental EE201 Engineering Mathematics (1)	Electrical Maths
1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain.	EE111 Electromagnetism & Basic Electrical Machines EE112 Alternating Current Principle	Electrical/Science
1.3. In-depth understanding of specialist bodies of knowledge within the technology domain.	EE109 Electrical Control Circuits EE114 Electrical Power Principle EE115 Basic Analogue & Digital Electronics	Electrical/Electronics
1.4. Discernment of knowledge development within the technology domain.	EE102 Basic Electrical Fitting & Wiring EE103 Basic Electrical Drafting EE104 Electrical Equipments Safety Protection	Electrical/Drafting

1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	EE105 Electrical Installation Design EE106 Advanced Electrical Wiring EE107 Electrical Equipments EE108 Electrical Fault Finding	Design/ Trade Work Instrumentation/ TradeWork
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain. 2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	EE121 Electronics Power Control Device EE116 Process Control System EE117 Solar Electrical System EE118 Electrical Energy Supply System EE110 Computer Applications EE105 Electrical Installation Design EE106 Advanced Electrical Wiring EE119 Electrical Risk Assessment EE120 Electrical Contracting & Specification	Electronics/ Instrumentation Renewable Energy Power Engineering Computer Design/ Trade Work Project Management
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains.	EE120 Electrical Contracting & Specification	Project Management

3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	EE120 Electrical Contracting & Specification	Project Management

Advanced Diploma in Electrical Engineering

Learning Outcome	Subjects	Study Area
1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain. 1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain. 1.3. In-depth understanding of specialist bodies of knowledge within the technology domain.	EE201 Engineering Mathematics EE302 Advanced Engineering Mathematics EE202 Electrical Circuits EE204 Engineering Physics EE203 Three Phase Power Circuits EE205 Electrical Power System EE206 AC Machines EE207 DC Machine EE208 Operational Amplifiers EE209 Analogue Electronics	Mathematics Electrical Science Electrical Electrical Electronics

1.4. Discernment of knowledge development within the technology domain.	EE303 Transmission Line	Power Engineering
1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain.	EE301 Advanced Electrical Drafting EE307 Energy Efficient Building Design	Electrical Design
1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	EE308 Sustainability	Renewable Energy
2. ENGINEERING APPLICATION ABILITY		
2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain.	EE305 Power Transformer EE306 Electro-mechanical Control	Power Engineering
2.2. Application of engineering techniques, tools and resources within the technology domain.	EE301 Advanced Electrical Drafting	Electrical Design
2.3. Application of systematic synthesis and design processes within the technology domain.	EE307 Energy Efficient Building Design	Electrical Design
2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	EE309 Project Management	Project Management

3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	EE309 Project Management EE310 Engineering Officer Competency Report EE309 Project Management EE310 Engineering Officer Competency Report	Project Management Engineering Ethnics Project Management Engineering Ethnics

Professional Diploma in Electrical Engineering

Learning Outcome	Subjects	Study Area
1. KNOWLEDGE AND SKILL BASE 1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline. 1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.	BAE 403 Engineering Mechanics (1 pt) BAE 404 Engineering Materials & Thermodynamics (3 pt) RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt) BAE 401 Advanced Engineering Mathematics (9 pt) BAE 402 Calculus (3 pt) BAE 601 Computer Programming BAE 603 Software Engineering	Mechanical Renewable Energy Mathematics Computer

1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline. 1.4. Discernment of knowledge development and research directions within the engineering discipline. 1.5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.	RE003- Solar and Thermal Energy Systems (2 pt) RE006- Wind Energy Conversion Systems (2 pt) RE013-Electrical Machines RE014-Electronics Control RE007- Energy System Efficiency RE010-Engineering Materials (2 pt) RE012a-Electrical Engineering Part 1 (2pt) RE002- Grid Connected Photovoltaic Power Systems RE005- Renewable Energy Resource Analysis (2 pt) BAE 602 Computer Network RE004- Energy Storage Systems (2 pt) RE012b-Electrical Engineering Part 2	Renewable Energy Electrical Electronics Renewable Energy Material Science Electrical Electronics Renewable Energy Computer Mechanical Electrical
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to complex engineering problem solving. 2.2. Fluent application of engineering techniques, tools and resources.	BAE 501 Advanced Power Systems & Power Transmission Networks BAE 506 Power System Stability & Protection BAE 604 Telecommunication Engineering	Power Engineering Telecommunication

2.3. Application of systematic engineering synthesis and design processes. 2.4. Application of systematic approaches to the conduct and management of engineering projects.	RE016-Design& Management (BAE508) (2 pt) RE015-Electrical Project/ Practice	Design Project
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	RE015-Electrical Project/ Practice BAE 608 Professional Engineer Competency Demonstration Report	Project Engineering Ethics+ Practice

Diploma in Civil Engineering

Learning Outcome	Subjects	Study Area
1. KNOWLEDGE AND SKILL BASE	**Certificate in Construction Studies**	
1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain.	CE 104 A Building Drawing CE 108 Electrical Principle	Construction Electrical
1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain.	CE 101 Mathematics (EE201) CE 102 Physics (EE204)	Maths/Science
1.3. In-depth understanding of specialist bodies of knowledge within the technology domain.	CE 104 Fluid Dynamics CE 105 Hydraulic CE 106 Hydrology	Civil
1.4. Discernment of knowledge development within the technology domain.	CE 107 Sanitation-and-Water-supply	Civil
1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain.	CE 109 Energy Efficient Building Design (EE309) CE 110 Building Construction	Design Construction
1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	EE102 Basic Electrical Fitting & Wiring CE 106A Detailed Construction & Building Construction Materials	Electrical/ Building Trade
2. ENGINEERING APPLICATION ABILITY		
2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain.	CE 108 Electrical Principle CE 107 Sanitation-and-Water-supply CE 110 Building Construction CE 108 Electrical Principle	Electrical/ Building Trade

2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	CE 107 Sanitation-and-Water-supply CE 110 Building Construction CE 109 Energy Efficient Building Design (EE309) CE 110 Building Construction CE 109 Energy Efficient Building Design (EE309)	Civil Construction Electrical/ Building Trade
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	CE 109 Energy Efficient Building Design (EE309)	Design

Advanced Diploma in Civil Engineering

Learning Outcome	Subjects	Study Area
1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain.	CE113 Structure 1 CE114 Structure 2	Structural Engineering
1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain.	ME 102 Engineering Thermodynamics CE 112 Engineering Mechanics+ ME 301 Applied Mathematics	Mechanical+Maths
1.3. In-depth understanding of specialist bodies of knowledge within the technology domain.	ME 334 Airconditioning and Refrigeration EE106 Advanced Electrical Wiring	Mechanical Electrical
1.4. Discernment of knowledge development within the technology domain.	ME 334 Airconditioning and Refrigeration EE106 Advanced Electrical Wiring	Mechanical Electrical
1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain.	EE105 Electrical Installation Design CE115 Estimating & Specification	Electrical Construction
1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	CE103-Surveying CE111A-Road+Bridges EE308 Sustainability	Civil Renewable Energy
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain.	EE104 Electrical Equipments Safety Protection CE113 Structure 1 CE114 Structure 2	Electrical Structural Engineering

2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	CE 110 Building Construction CE115 Estimating & Specification CE111A-Road+Bridge CE114 Structure 2 CE309 Project Management	Construction Civil Structural Project
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	CE309 Project Management CE310 Engineering Competency Demonstration Report	Project Engineering Ethics+ Practice

Professional Diploma in Civil Engineering

Learning Outcome	Subjects	Study Area
1. KNOWLEDGE AND SKILL BASE 1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.	BAE 403 Engineering Mechanics (1 pt) BAE 404 Engineering Materials & Thermodynamics (3 pt)	Mechanical
1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.	BAE 401 Advanced Engineering Mathematics (9 pt) BAE 402 Calculus (3 pt)	Mathematics
1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline.	RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt) RE011a-Civil& Mechanical Engineering Part 1 (2 pt) (Assessment- Study Report)	Renewable Energy Civil/Mechanical
1.4. Discernment of knowledge development and research directions within the engineering discipline.	RE003- Solar and Thermal Energy Systems (2 pt) RE004- Energy Storage Systems (2 pt) RE012a-Electrical Engineering Part 1 (2pt) RE010-Engineering Materials (2 pt)	Renewable Energy Mechanical Electrical Material
1.5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline.	RE016-Design& Management (BAE508) (2 pt)	Computer/Design
1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.	RE011b-Civil& Mechanical Engineering Part 2a (2 pt)(Assessment- Study Report) BAE423 Fluid Mechanics (2 pt) BAE424 Reinforced Concrete (2 pt) BAE522 Rock Mechanics (2 pt)	Civil/Mechanical Civil Structural Civil

2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to complex engineering problem solving. 2.2. Fluent application of engineering techniques, tools and resources. 2.3. Application of systematic engineering synthesis and design processes. 2.4. Application of systematic approaches to the conduct and management of engineering projects.	BAE421 Building Construction Engineering (2 pt) BAE 606 Building Service Electrical & Mechanical Engineering (2 pt) BAE 523A Environmental Engineering (2 pt) BAE623 Surveying & Traffic Engineering (2 pt) BAE624 Water Supply , Sanitation & Finishing (2 pt) RE005- Renewable Energy Resource Analysis (2 pt) RE006- Wind Energy Conversion Systems (2 pt) BAE621 Structural Engineering (2 pt) BAE422 Estimating (2 pt) BAE 605 Project Management	Construction Building Services Civil Civil Renewable Energy Renewable Energy Structural Structural Project
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains.	BAE 605 Project Management BAE 608 Professional Engineer Competency Demonstration Report	Project Ethics+ Practice

3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	BAE 605 Project Management BAE 608 Professional Engineer Competency Demonstration Report	Project Ethics+ Practice

Diploma in Mechanical Engineering

Learning Outcome	**Subjects**	**Study Area**
1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain. 1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain. 1.3. In-depth understanding of specialist bodies of knowledge within the technology domain. 1.4. Discernment of knowledge development within the technology domain.	ME 102 Engineering Thermodynamics ME 103 Engineering Mechanics ME 104 Machine Principle ME 105 Electrical Principle Maths 101 Engineering Mathematics (EE201) ME 101 Applied Mathematics ME 106 Electrical Circuits ME 107 Heat Transfer ME 108 Principle of Engines ME201 Introduction to Fluid Mechanics ME 207 Chemical Thermodynamics ME 208 Hydrocarbons ME 209 Introduction-to-polymer-science-and-technology	Mechanical/Science Electrical Mathematics Electrical Mechanical/Science Mechanical/Science Mechanical/Science Mechanical/Science Mechanical/Science

1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	ME 205 Manufacturing Processes-and-Materials ME 202 Introduction to Aero Dynamics ME 203 Control Engineering ME 234 Wind Turbines	Design Design Control Renewable Energy
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain. 2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	ME 204 Engineering Fluid Mechanics ME 206 Introduction to Turbo Machinery ME 205 Manufacturing Processes-and-Materials Mgt 501 Basic Management	Mechanical Mechanical Design Management/ Computer
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains.	Mgt 501 Basic Management	Management/ Computer

3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.		

Advanced Diploma in Mechanical Engineering

Learning Outcome	Subjects	Study Area
1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain.	ME 306 Theory-of-waves-in-materials ME 301 Fluid Dynamics	Science/Mechanical
1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain.	Maths 403 Engineering-Mathematics (EE302) ME 304 Introduction to Nonlinearity-in-control-systems	Mathematics
1.3. In-depth understanding of specialist bodies of knowledge within the technology domain. 1.4. Discernment of knowledge development within the technology domain.	ME 301 Fluid Dynamics ME 302 Automation-and-Robotics ME 301 Fluid Dynamics ME 302 Automation-and-Robotics	Science/Mechanical
1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain.	ME 303 Computer Aided Design and Manufacturing	Design/Computer

1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	ME 305 Corrosion Prevention ME 334 Airconditioning and Refrigeration	Science/Mechanical Mechanical
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain. 2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	ME 534 Numerical Control EE 624 Process Control ME 434 Mechtronics-Robotics ME 634 Pneumatics EE 617 Building Electrical and Mechanical System Part 1 (EE309) Mgt 503 Production & Operation Management Mgt 505 Quality Management and Manufacturing Engineering	Instrumentation Building Services Production/ Management
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains.	Mgt 503 Production & Operation Management Mgt 505 Quality Management and Manufacturing Engineering	Production/ Management

3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	ME310 Engineering Competency Demonstration Report ME310 Engineering Competency Demonstration Report	Ethics+ Engineering Practice Ethics+ Engineering Practice

Professional Diploma in Mechanical Engineering

Learning Outcome	Subjects	Study Area
1. KNOWLEDGE AND SKILL BASE		
1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.	BAE 404 Engineering Materials & Thermodynamics (3 pt) RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt)	Science/Mechanical Renewable Energy
1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.	BAE 601 Computer Programming(2 pt) BAE 401 Advanced Engineering Mathematics (9 pt) BAE 402 Calculus (3 pt)	Mathematics/ Computer
1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline.	BAE 403 Engineering Mechanics (1 pt) RE003- Solar and Thermal Energy Systems (2 pt)	Mechanical
1.4. Discernment of knowledge development and research directions within the engineering discipline.	RE004- Energy Storage Systems (2 pt) RE005- Renewable Energy Resource Analysis (2 pt) RE006- Wind Energy Conversion Systems (2 pt)	Renewable Energy

1.5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline.	RE010-Engineering Materials (2 pt) RE016-Design& Management (BAE508) (2 pt)	Design
1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.	RE012a-Electrical Engineering Part 1 (2pt) RE011a-Civil & Mechanical Engineering Part 1 (2 pt (Assessment- Study Report)	Electrical Civil/Mechanical
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to complex engineering problem solving.	RE011b-Civil & Mechanical Engineering Part 2a (2 pt) (Assessment- Study Report)	Civil/Mechanical
2.2. Fluent application of engineering techniques, tools and resources.	BAE311 Plant Engineering (2 pt) BAE314 Mechanical Power Generation (2 pt) BAE315 Materials Engineering (2 pt) Part 1 Part 2 (2 pt) BAE511 Air-conditioning & Refrigeration Part 1 (2 pt) BAE512 Building Service Water Supply System (2 pt) BAE613 Mechanical Instrumentation Process(2 pt BAE 606 Building Service Electrical & Mechanical Engineering (2 pt) RE007- Energy System Efficiency(2 pt)	Mechanical Building Services Instrumentation Building Services Mechanical

2.3. Application of systematic engineering synthesis and design processes. 2.4. Application of systematic approaches to the conduct and management of engineering projects.	BAE614 Machine Design (2 pt) ME309 Project Management	Design Project
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	ME309 Project Management ME310 Engineering Competency Demonstration Report	Project Ethics + Engineering Practice

Criterion 1: Academic Curriculum

(curricular design)the philosophy and approach adopted in the programme structure, (MEng C)

The Diploma & Advanced Diploma level engineering curriculums are designed to provide the Engineering Competencies at Technician/ Technologist & Professional Engineer level.

They are based on Year 12 level schooling.

At the diploma level, the basic engineering theories are mixed with trades level practical knowledge and applications. Appropriate contents of mathematics, science and cross disciplinary contents are inserted.

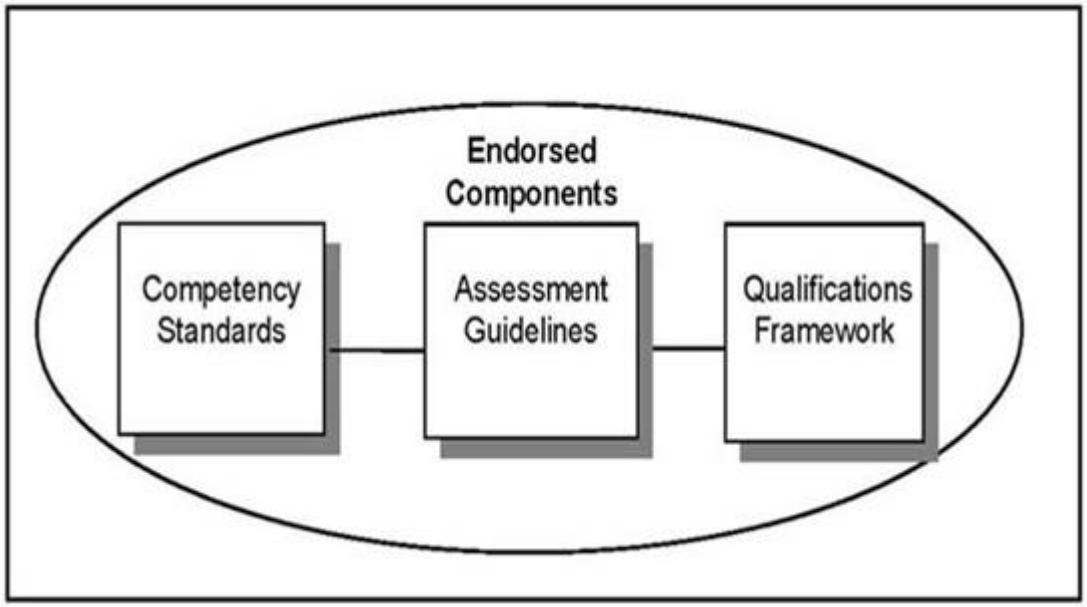
The engineering Industry is subject to high levels of legislation, regulation, codes of practice, guidelines and advisory standards, related to: research, assembly, installation, construction, diagnoses, maintenance, commissioning, programming, testing and repair of networks; systems,

circuits, equipment, components, appliances and facilities in the field of electricity and communications. The regulatory requirements are typically based on the principle of operation of the various systems and associated circuits involving equipment, apparatus and systems, public safety, safety and health of individuals who work on lines/circuits, systems and apparatus/equipment and other codes and practices related to the environment in which they are installed, operate and are maintained.

To fulfil such requirements , IQY Technical College Diploma & Advanced Diploma program are designed with the following requirements

- To provide a consistent and reliable set of components for training, recognising and assessing peoples skills, and may also have optional support materials
- To enables the qualifications to be awarded through direct assessment of workplace competencies
- To apply and delivery of flexible training which suits individual and industry requirements
- To encourages learning and assessment in a work-related environment which leads to verifiable workplace outcomes.

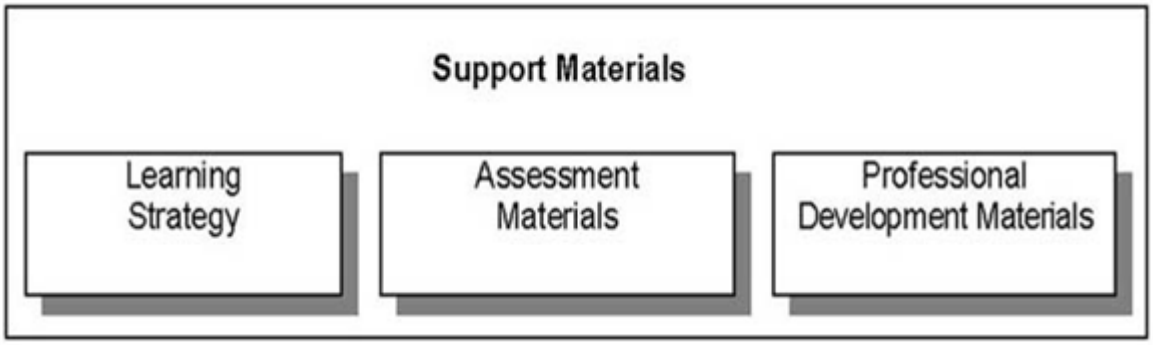
IQY Technical College's Diploma & Advanced Diploma program are largely based on Australian training system that reflect the following structure.



Competency Standards

Each unit of competency identifies a discrete workplace requirement and includes the knowledge and skills that underpin competency as well as language, literacy and numeracy; and occupational health and safety requirements. The units of competency must be adhered to in training and assessment to ensure consistency of outcomes

The online & off line learning support materials are designed with the following features.



The following competency areas are included

A – Assembly
C – Commercial
D – Computer systems
E – Cross discipline
F – Data and voice communications
G – Electrical
H – Electronic
I – Instrument and Control
J – Refrigeration and Air Conditioning
K – Renewable and sustainable energy
M – Hazardous areas
P – Restricted and specialist
R – Research

Language, Literacy, Numeracy

The study support materials have been written to reflect the technical and operational needs of industry and include appropriate language and literacy requirements of Myanmar students. A new and specific section related to literacy and numeracy skills has been included in the competency standard. It characterises how participants are to be best equipped to achieve the relevant unit, in terms of reading, writing and numeracy skill levels.

Access, Equity and Cultural Diversity

The skills required of employees in the Engineering Industry are comprehensive and are relevant to many different employment situations. The study support materials reflect the range of knowledge and skills and their application, required in the Industry. They are written in a non-exclusive manner so as to increase the participation rates of under-represented groups and to minimise unintentional bias.

Quality Control Aspects

- *Maintenance of Contents Standards* – to initiate and respond to the need to review, vary, delete and add to the Engineering competency standard units, as part of the sector's standards inventory
- *Maintenance of Competency Delivery Processes* – to monitor the effectiveness of the delivery of competency and so initiate and respond to issues which may impact on those processes
- *Maintenance of Assessment Guidelines* – to monitor the effectiveness of the Assessment Guidelines and supporting systems; to initiate and respond to issues which impact, or are likely to impact, on the quality of the assessment systems and to promote quality improvement throughout the system
- *Maintenance of the Qualification and Recognition Systems* – to monitor the effectiveness of the application of the Qualification and Recognition Systems contained in the courses and to review/revise the system as required

Philosophy related to Learning Out comes provided by IQY Technical College Diploma & Advanced Diploma curriculums

Certificate (Part 1)

Characteristics of Learning Outcomes

- Breadth, depth and complexity of knowledge and competencies would cover selecting, adapting and transferring skills and knowledge to Australian environments and providing technical advice and some leadership in resolution of specified problems. This would be applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available.
- Performance of a defined range of skilled operations, usually within a range of broader related activities involving known routines, methods and procedures, where some discretion and judgement is required in the section of equipment, services or contingency measures and within known time constraints.
- Applications may involve some responsibility for others. Participation in teams including group or team coordination may be involved.
- Distinguishing Features of Learning Outcomes
- Do the competencies enable an individual with this qualification to:
- demonstrate some relevant theoretical knowledge
- apply a range of well-developed skills
- apply known solutions to a variety of predictable problems
- perform processes that require a range of well-developed skills where some discretion and judgement is required
- interpret available information, using discretion and judgement
- take responsibility for own outputs in work and learning

- take limited responsibility for the output of others

Certificate (Part 2)

Characteristics of Learning Outcomes

- Breadth, depth and complexity of knowledge and competencies would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance are involved when organising activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature.
- Performance of a broad range of skilled applications including the requirement to evaluate and analyse current practices, develop Australian criteria and procedures for performing current practices and provision of some leadership and guidance to others in the application and planning of the skills.
- Applications involve responsibility for, and limited organisation of, others.
- Distinguishing Features of Learning Outcomes
- Do the competencies enable an individual with this qualification to:
  demonstrate understanding of a broad knowledge base incorporating some theoretical concepts
- apply solutions to a defined range of unpredictable problems
- identify and apply skill and knowledge areas to a wide variety of contexts, with depth in some areas

- identify, analyse and evaluate information from a variety of sources
- take responsibility for own outputs in relation to specified quality standards
- take limited responsibility for the quantity and quality of the output of others

Diploma

Characteristics of Learning Outcomes

- Breadth, depth and complexity covering planning and initiation of alternative approaches to skills or knowledge applications across a broad range of technical and/or management requirements, evaluation and coordination.
- The self directed application of knowledge and skills, with substantial depth in some areas where judgement is required in planning and selecting appropriate equipment, services and techniques for self and others.
- Applications involve participation in development of strategic initiatives as well as personal responsibility and autonomy in performing complex technical operations or organising others. It may include participation in teams including teams concerned with planning and evaluation functions. Group or team coordination may be involved.
- The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.
- Distinguishing Features of Learning Outcomes
- Do the competencies or learning outcomes enable an individual with this qualification to:
  demonstrate understanding of a broad knowledge base incorporating theoretical concepts, with substantial depth in some areas
- analyse and plan approaches to technical problems or management requirements
- transfer and apply theoretical concepts and/or technical or creative skills to a range of situations
- evaluate information, using it to forecast for planning or research purposes
- take responsibility for own outputs in relation to broad quantity and quality parameters
- take some responsibility for the achievement of group outcomes

Advanced Diploma

Characteristics of Learning Outcomes

- Breadth, depth and complexity involving analysis, design, planning, execution and evaluation across a range of technical and/or management functions including development of Australian criteria or applications or knowledge or procedures.
- The application of a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts in relation to either varied or highly specific functions. Contribution to the development of a broad plan, budget or strategy is involved and accountability and responsibility for self and others in achieving the outcomes is involved.
- Applications involve significant judgement in planning, design, technical or leadership/guidance functions related to products, services, operations or procedures.
- The degree of emphasis on breadth as against depth of knowledge and skills may vary between qualifications granted at this level.
- Distinguishing Features of Learning Outcomes
- Do the competencies or learning outcomes enable an individual with this qualification to:
  demonstrate understanding of specialised knowledge with depth in some areas
- analyse, diagnose, design and execute judgements across a broad range of technical or management functions
- generate ideas through the analysis of information and concepts at an abstract level
- demonstrate a command of wide-ranging, highly specialised technical, creative or conceptual skills
- demonstrate accountability for personal outputs within broad parameters
- demonstrate accountability for personal and group outcomes within broad parameters

Professional Diploma

Year 2+3 Learning Outcomes & Teaching /Assessment Strategies

Purpose

Development and consolidation of discipline knowledge and skills, with increasing opportunities for application

Knowledge

comprehensive understanding of the major theoretical approaches, concepts, practices, methodologies, etc.

Skills

- Consolidate and extend key academic skills including:

- high order cognitive skills in processing knowledge
- rigorous techniques of enquiry involving primary and secondary sources and a range of technologies
- problem solving and creativity using various techniques in diverse contexts
- collaborative and independent learning
- communication skills (oral, written, academic, professional) including the use of relevant technologies
- Consolidate and extend key discipline technical skills

Application of Knowledge & Skills

- apply and adapt major theoretical principles and approaches to real world contexts
- develop skills in planning, problem solving, decision-making, teamwork, communication, intellectual independence and accountability in professional practice and/or scholarship

Key Verbs

- organise
- integrate
- differentiate, examine
- distinguish
- discuss, elaborate
- calculate
- collaborate
- discover
- critically review

- explain, interpret
- compare, contrast
- summarise, paraphrase
- demonstrate
- cooperate
- use, modify
- organise

Types of assessments

- critical review
- construct a chart
- analyse data, graph
- create a database
- write a reflective journal
- analyse an argument
- compare theories
- make generalisations

- apply models
- develop and conduct a survey
- investigate an issue
- critical essay
- role play
- make a presentation
- debate
- defend a position
- quiz, test, exam
- tutorial paper

Year 4 Learning Outcomes & Teaching /Assessment Strategies

Purpose

The Professional Diploma comparable to Bachelor Degree qualifies individuals who apply a broad and coherent body of knowledge in a range of contexts to undertake professional work and as a pathway for further learning

Knowledge

- broad and coherent knowledge with depth in one or more disciplines

Skills

- cognitive skills to critically, analyse, consolidate and synthesise knowledge
- cognitive and technical skills to demonstrate a broad understanding of knowledge with depth in some areas
- cognitive and creative skills to exercise critical thinking and judgement in identifying and solving problems with intellectual independence
- communication skills to present a clear, coherent and independent exposition of knowledge and ideas

Application of Knowledge & Skills

- apply knowledge and skills with initiative and judgement in planning, problem solving and decision making in professional practice and/or scholarship
- adapt knowledge and skills in diverse contexts
- with responsibility and accountability for own learning and professional practice and in collaboration with others within broad parameters

Key Verbs

- assemble
- manage
- formulate, devise
- generate, construct
- deconstruct
- solve

- assess, estimate
- investigate, scope

- plan
- convert, translate
- justify, predict
- create, design, compose
- judge, determine, diagnose
- innovate, invent

Types of Assessment

- project
- presentation on a topic/project
- seminar paper and presentation
- report
- case study
- scenarios
- major essay
- plan
- creative writing (story, poem song)
- musical work, sculpture
- performance of a musical work, play
- film making
- translation of a text
- simulation
- organisation of an event
- work-integrated learning
- teamwork
- quiz, test/exam
- reflective journal
- posters
- portfolio
- exam
- viva voce

Preparation for Professional Engineer Program

Purpose

The Professional Engineer Status who apply a body of knowledge in a specific context to undertake professional work and as a pathway for research and further learning.

Knowledge

- coherent advanced knowledge of the principles and concepts in one or more disciplines and knowledge of research principles and methods

Skills

- cognitive skills to review, analyse, consolidate and synthesise knowledge to identify and provide solutions to complex problems with intellectual independence
- cognitive and technical skills to demonstrate a broad understanding of a body of knowledge and theoretical concepts with advanced understanding in some areas
- cognitive skills to exercise critical thinking and judgement in developing new understanding technical skills to design and use research in a project
- communication skills to present a clear and coherent exposition of knowledge and ideas to a variety of audience

Application of knowledge & Skills

- apply knowledge and skills with initiative and judgement in professional practice and/or scholarship
- adapt knowledge and skills in diverse contexts
- with responsibility and accountability for own learning and practice and in collaboration with others within broad parameters
- plan and execute project work and/or a piece of research and scholarship with some independence

Key Verbs

- research work on system/ modification/ re-engineering/ reverse engineering
- adapt the news systems / alternative system/ more efficient system
- initiate the new technology & application
- consolidate the several functions
- execute the planning & management in engineering works

Types of assessment

- literature review on application/ methods/ system report/ project report
- research paper on new engineering development & systems
- report on project
- creative work on engineering design project
- seminar paper and presentation
- conference paper
- journal article
- viva voce

Based on the above learning outcomes & teaching strategies, the curriculums are arranged & relevant contents are integrated as follows.

Detailed Contents

Detailed Contents of BE,B Bus& B App Sc (IT) Programs

http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs

http://www.highlightcomputer.com/detailedcontent.htm

Course Outlines

http://www.highlightcomputer.com/syllabus.htm

Diploma Programs (IQY Technical College)

Electrical Engineering Course Outline

Management Course Outline

Information Technology Course Outline

Certificate in Information Technology Course Outline

Diploma in Information Technology Course Outline

Advanced Diploma in Information Technology Course Outline

Mechanical Engineering Course Outline

Civil Engineering Course Outline

Automotive Engineering Course Outline

Marine Engineering Course Outline

Professional Diploma + Bachelor of Engineering (Electrical, Civil, Mechanical Combined with Renewable Energy) Programs

Professional Diploma+ Bachelor Degree in Electrical Engineering

Professional Diploma+ Bachelor Degree in Civil Engineering

Professional Diploma+ Bachelor Degree in Mechanical Engineering

Bachelor Degree Programs (St Clements University Higher Education School& St Clements Technological University of British West Indies)

Bachelor of Engineering (Electrical Engineering) Course Outline

Bachelor of Applied Science (Computer Science & Computer Technology)

Bachelor of Engineering (Mechanical Engineering-Mechatronics) Course Outline

Bachelor of Engineering (Civil Engineering-Building Services) Course Outline

Graduate Diploma of Civil Engineering + Bachelor of Applied Engineering (Final Year Civil Design) Course Outline

Bachelor of Engineering (Civil) Course outline

Bachelor of Engineering (Mechanical) Course outline

Graduate Diploma of Mechanical Engineering + Bachelor of Applied Engineering (Final Year Mechanical Design) Course Outline

Bachelor of Business /Bachelor of Applied Management Course Outline

Graduate Diploma of Engineering Practice (Computer Control Engineering) Course Outline

Certificate in Teaching Support+ Diploma in Teaching Practice+ Bachelor of Teaching+ Bachelor of Education (School & Vocational)

Scholarship Application Form for Volunteer Teachers

Myanmar Engineers Board Professional Engineer (PE) (Electrical-Building Services) Registration Support Program

Graduate Diploma of Engineering Practice (Mechanical) Course Outline

Graduate Diploma of Engineering Practice (Civil) Course Outline

Graduate Diploma of Engineering (Electrical+ Electronics) Course Outline

AUSTRALIAN ELECTRICIAN TRAINING

Master Degree Programs (St Clements Technological University of British West Indies)

Master of Science (Information Technology)/Master of Information Technology

Master of Management

Master of Science (Engineering) / Master of Engineering

Master of Science (Renewable Energy Engineering)

Learning Outcome/Course/Assessment/ Time Allocation

Diploma in Electrical Engineering Each unit has 1 pt unless stated

Learning Outcome	Subjects	Time Allocation/ Assessment Method
1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain. 1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain. 1.3. In-depth understanding of specialist bodies of knowledge within the technology domain. 1.4. Discernment of knowledge development within the technology domain.	Each unit has 1 pt unless stated EE101 DC Circuit Problems EE113 Electrical Fundamental (2 pt) EE201 Engineering Mathematics (1) EE111 Electromagnetism & Basic Electrical Machines(2 pt) EE112 Alternating Current Principle (2 pt) EE109 Electrical Control Circuits EE114 Electrical Power Principle EE115 Basic Analogue & Digital Electronics EE102 Basic Electrical Fitting & Wiring EE103 Basic Electrical Drafting EE104 Electrical Equipments Safety Protection (2 pt)	**Time Allocation** 1 Credit Point=24 Hr **Assessment** Assignment/Test/ Examination/ Summative/ Formative Assessment Practical Simulation

1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	EE105 Electrical Installation Design EE106 Advanced Electrical Wiring EE107 Electrical Equipments EE108 Electrical Fault Finding	
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain. 2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	EE121 Electronics Power Control Device EE116 Process Control System(3 pt) EE117 Solar Electrical System EE118 Electrical Energy Supply System(3 pt) EE110 Computer Applications EE105 Electrical Installation Design EE106 Advanced Electrical Wiring EE119 Electrical Risk Assessment EE120 Electrical Contracting & Specification	

3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	EE120 Electrical Contracting & Specification EE120 Electrical Contracting & Specification	

Advanced Diploma in Electrical Engineering Each unit has 1 pt unless stated

Learning Outcome	**Subjects**	**Time Allocation/** **Assessment Method**
1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain. 1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain.	EE201 Engineering Mathematics EE302 Advanced Engineering Mathematics EE202 Electrical Circuits EE204 Engineering Physics EE203 Three Phase Power Circuits	**Time Allocation** 1 Credit Point=24 Hr **Assessment** Assignment/Test/ Examination/ Summative/ Formative Assessment Practical Simulation

1.3. In-depth understanding of specialist bodies of knowledge within the technology domain.	EE205 Electrical Power System(2 pt) EE206 AC Machines(2 pt) EE207 DC Machine EE208 Operational (2 pt)Amplifiers EE209 Analogue Electronics	
1.4. Discernment of knowledge development within the technology domain.	EE303 Transmission Line (2 pt)	
1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain.	EE301 Advanced Electrical Drafting EE307 Energy Efficient Building Design(2 pt)	
1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	EE308 Sustainability	
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain. 2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain.	EE305 Power Transformer (2 pt) EE306 Electro-mechanical Control (2 pt) EE301 Advanced Electrical Drafting EE307 Energy Efficient Building Design (2 pt)	

2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	EE309 Project Management (2 pt)	
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	EE309 Project Management (2 pt) EE310 Engineering Officer Competency Report (2 pt) EE309 Project Management (2 pt) EE310 Engineering Officer Competency Report (2 pt)	

Professional Diploma in Electrical Engineering Each unit has 2 pt unless stated

Learning Outcome	Subjects	Time Allocation/ Assessment Method
1. KNOWLEDGE AND SKILL BASE 1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline. 1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline. 1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline. 1.4. Discernment of knowledge development and research directions within the engineering discipline. 1.5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline.	BAE 403 Engineering Mechanics (1 pt) BAE 404 Engineering Materials & Thermodynamics (3 pt) RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt) BAE 401 Advanced Engineering Mathematics (9 pt) BAE 402 Calculus (3 pt) BAE 601 Computer Programming BAE 603 Software Engineering RE003- Solar and Thermal Energy Systems (2 pt) RE006- Wind Energy Conversion Systems (2 pt) RE013-Electrical Machines RE014-Electronics Control RE007- Energy System Efficiency RE010-Engineering Materials (2 pt) RE012a-Electrical Engineering Part 1 (2pt) RE002- Grid Connected Photovoltaic Power Systems	**Time Allocation** 1 Credit Point=24 Hr **Assessment** Assignment/Test/ Examination/ Summative/ Formative Assessment Practical Simulation Research Project/ Presentation/ Competency Demonstration Report/ Design Project work

1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.	RE005- Renewable Energy Resource Analysis (2 pt) BAE 602 Computer Network RE004- Energy Storage Systems (2 pt) RE012b-Electrical Engineering Part 2	
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to complex engineering problem solving. 2.2. Fluent application of engineering techniques, tools and resources. 2.3. Application of systematic engineering synthesis and design processes. 2.4. Application of systematic approaches to the conduct and management of engineering projects.	BAE 501 Advanced Power Systems & Power Transmission Networks BAE 506 Power System Stability & Protection BAE 604 Telecommunication Engineering RE016-Design& Management (BAE508) (2 pt) RE015-Electrical Project/ Practice	
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains.	RE015-Electrical Project/ Practice BAE 608 Professional Engineer Competency Demonstration Report	

3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.		

Diploma in Civil Engineering Each unit has 2.5 pt unless stated

Learning Outcome	**Subjects**	**Time Allocation/** **Assessment Method**
1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain. 1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain. 1.3. In-depth understanding of specialist bodies of knowledge within the technology domain. 1.4. Discernment of knowledge development within the technology domain.	**Certificate in Construction Studies** CE 104 A Building Drawing CE 108 Electrical Principle CE 101 Mathematics (EE201) CE 102 Physics (EE204) CE 104 Fluid Dynamics CE 105 Hydraulic CE 106 Hydrology CE 107 Sanitation-and-Water-supply	**Time Allocation** 1 Credit Point=24 Hr **Assessment** Assignment/Test/ Examination/ Summative/ Formative Assessment Practical Simulation

1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	CE 109 Energy Efficient Building Design (EE309) CE 110 Building Construction EE102 Basic Electrical Fitting & Wiring CE 106A Detailed Construction & Building Construction Materials	
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain. 2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	CE 108 Electrical Principle CE 107 Sanitation-and-Water-supply CE 110 Building Construction CE 108 Electrical Principle CE 107 Sanitation-and-Water-supply CE 110 Building Construction CE 109 Energy Efficient Building Design (EE309) CE 110 Building Construction CE 109 Energy Efficient Building Design (EE309)	
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains.	CE 109 Energy Efficient Building Design (EE309)	

3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.		

Advanced Diploma in Civil Engineering Each unit has 2.5 pt unless stated

Learning Outcome	**Subjects**	**Time Allocation/** **Assessment Method**
1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain. 1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain. 1.3. In-depth understanding of specialist bodies of knowledge within the technology domain. 1.4. Discernment of knowledge development within the technology domain.	CE113 Structure 1 CE114 Structure 2 ME 102 Engineering Thermodynamics CE 112 Engineering Mechanics+ ME 301 Applied Mathematics ME 334 Airconditioning and Refrigeration EE106 Advanced Electrical Wiring ME 334 Airconditioning and Refrigeration EE106 Advanced Electrical Wiring	**Time Allocation** 1 Credit Point=24 Hr **Assessment** Assignment/Test/ Examination/ Summative/ Formative Assessment Practical Simulation

1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	EE105 Electrical Installation Design CE115 Estimating & Specification CE103-Surveying CE111A-Road+Bridges EE308 Sustainability	
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain. 2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	EE104 Electrical Equipments Safety Protection CE113 Structure 1 CE114 Structure 2 CE 110 Building Construction CE115 Estimating & Specification CE111A-Road+Bridge CE114 Structure 2 CE309 Project Management	

3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	CE309 Project Management CE310 Engineering Competency Demonstration Report	

Professional Diploma in Civil Engineering Each unit has 2 pt unless stated

Learning Outcome	**Subjects**	**Time Allocation/** **Assessment Method**
1. KNOWLEDGE AND SKILL BASE 1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline. 1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.	BAE 403 Engineering Mechanics (1 pt) BAE 404 Engineering Materials & Thermodynamics (3 pt) BAE 401 Advanced Engineering Mathematics (9 pt) BAE 402 Calculus (3 pt)	**Time Allocation** 1 Credit Point=24 Hr **Assessment** Assignment/Test/ Examination/ Summative/ Formative Assessment Practical Simulation Research Project/ Presentation/

1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline. 1.4. Discernment of knowledge development and research directions within the engineering discipline. 1.5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.	RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt) RE011a-Civil& Mechanical Engineering Part 1 (2 pt) (Assessment- Study Report) RE003- Solar and Thermal Energy Systems (2 pt) RE004- Energy Storage Systems (2 pt) RE012a-Electrical Engineering Part 1 (2pt) RE010-Engineering Materials (2 pt) RE016-Design& Management (BAE508) (2 pt) RE011b-Civil& Mechanical Engineering Part 2a (2 pt)(Assessment- Study Report) BAE423 Fluid Mechanics (2 pt) BAE424 Reinforced Concrete (2 pt) BAE522 Rock Mechanics (2 pt)	Competency Demonstration Report/ Design Project work
2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to complex engineering problem solving. 2.2. Fluent application of engineering techniques, tools and resources.	BAE421 Building Construction Engineering (2 pt) BAE 606 Building Service Electrical & Mechanical Engineering (2 pt) BAE 523A Environmental Engineering (2 pt) BAE623 Surveying & Traffic Engineering (2 pt) BAE624 Water Supply , Sanitation & Finishing (2 pt) RE005- Renewable Energy Resource Analysis (2 pt) RE006- Wind Energy Conversion Systems (2 pt)	

2.3. Application of systematic engineering synthesis and design processes. 2.4. Application of systematic approaches to the conduct and management of engineering projects.	BAE621 Structural Engineering (2 pt) BAE422 Estimating (2 pt) BAE 605 Project Management	
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	BAE 605 Project Management BAE 608 Professional Engineer Competency Demonstration Report BAE 605 Project Management BAE 608 Professional Engineer Competency Demonstration Report	

Diploma in Mechanical Engineering Each unit has 1.5 pt unless stated

Learning Outcome	**Subjects**	**Time Allocation/** **Assessment Method**
1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain. 1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain. 1.3. In-depth understanding of specialist bodies of knowledge within the technology domain. 1.4. Discernment of knowledge development within the technology domain. 1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	ME 102 Engineering Thermodynamics ME 103 Engineering Mechanics ME 104 Machine Principle ME 105 Electrical Principle Maths 101 Engineering Mathematics (EE201) ME 101 Applied Mathematics ME 106 Electrical Circuits ME 107 Heat Transfer ME 108 Principle of Engines ME201 Introduction to Fluid Mechanics ME 207 Chemical Thermodynamics ME 208 Hydrocarbons ME 209 Introduction-to-polymer-science-and-technology ME 205 Manufacturing Processes-and-Materials ME 202 Introduction to Aero Dynamics ME 203 Control Engineering ME 234 Wind Turbines	**Time Allocation** 1 Credit Point=24 Hr **Assessment** Assignment/Test/ Examination/ Summative/ Formative Assessment Practical Simulation

2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain. 2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	ME 204 Engineering Fluid Mechanics ME 206 Introduction to Turbo Machinery ME 205 Manufacturing Processes-and-Materials Mgt 501 Basic Management	
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	Mgt 501 Basic Management	

Advanced Diploma in Mechanical Engineering Each unit has 1.5 pt unless stated

Learning Outcome	Subjects	Time Allocation/ Assessment Method
1. KNOWLEDGE AND SKILL BASE 1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain. 1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain. 1.3. In-depth understanding of specialist bodies of knowledge within the technology domain. 1.4. Discernment of knowledge development within the technology domain. 1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.	ME 306 Theory-of-waves-in-materials ME 301 Fluid Dynamics Maths 403 Engineering-Mathematics (EE302) ME 304 Introduction to Nonlinearity-in-control-systems ME 301 Fluid Dynamics ME 302 Automation-and-Robotics ME 301 Fluid Dynamics ME 302 Automation-and-Robotics ME 303 Computer Aided Design and Manufacturing ME 305 Corrosion Prevention ME 334 Airconditioning and Refrigeration	**Time Allocation** 1 Credit Point=24 Hr **Assessment** Assignment/Test/ Examination/ Summative/ Formative Assessment Practical Simulation

2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain. 2.2. Application of engineering techniques, tools and resources within the technology domain. 2.3. Application of systematic synthesis and design processes within the technology domain. 2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.	ME 534 Numerical Control EE 624 Process Control ME 434 Mechtronics-Robotics ME 634 Pneumatics EE 617 Building Electrical and Mechanical System Part 1 (EE309) Mgt 503 Production & Operation Management Mgt 505 Quality Management and Manufacturing Engineering	
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains. 3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.	Mgt 503 Production & Operation Management Mgt 505 Quality Management and Manufacturing Engineering ME310 Engineering Competency Demonstration Report ME310 Engineering Competency Demonstration Report	

Professional Diploma in Mechanical Engineering Each unit has 2 pt unless stated

Learning Outcome	Subjects	Time Allocation/ Assessment Method
1. KNOWLEDGE AND SKILL BASE 1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline. 1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline. 1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline. 1.4. Discernment of knowledge development and research directions within the engineering discipline. 1.5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline. 1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.	BAE 404 Engineering Materials & Thermodynamics (3 pt) RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt) BAE 601 Computer Programming(2 pt) BAE 401 Advanced Engineering Mathematics (9 pt) BAE 402 Calculus (3 pt) BAE 403 Engineering Mechanics (1 pt) RE003- Solar and Thermal Energy Systems (2 pt) RE004- Energy Storage Systems (2 pt) RE005- Renewable Energy Resource Analysis (2 pt) RE006- Wind Energy Conversion Systems (2 pt) RE010-Engineering Materials (2 pt) RE016-Design& Management (BAE508) (2 pt) RE012a-Electrical Engineering Part 1 (2pt) RE011a-Civil & Mechanical Engineering Part 1 (2 pt) (Assessment- Study Report)	**Time Allocation** 1 Credit Point=24 Hr **Assessment** Assignment/Test/ Examination/ Summative/ Formative Assessment Practical Simulation Research Project/ Presentation/ Competency Demonstration Report/ Design Project work

2. ENGINEERING APPLICATION ABILITY 2.1. Application of established engineering methods to complex engineering problem solving. 2.2. Fluent application of engineering techniques, tools and resources. 2.3. Application of systematic engineering synthesis and design processes. 2.4. Application of systematic approaches to the conduct and management of engineering projects.	RE011b-Civil & Mechanical Engineering Part 2a (2 pt) (Assessment- Study Report) BAE311 Plant Engineering (2 pt) BAE314 Mechanical Power Generation (2 pt) BAE315 Materials Engineering (2 pt) Part 1 Part 2 (2 pt) BAE511 Air-conditioning & Refrigeration Part 1 (2 pt) BAE512 Building Service Water Supply System (2 pt) BAE613 Mechanical Instrumentation Process(2 pt BAE 606 Building Service Electrical & Mechanical Engineering (2 pt) RE007- Energy System Efficiency(2 pt) BAE614 Machine Design (2 pt) ME309 Project Management	
3. PROFESSIONAL AND PERSONAL ATTRIBUTES 3.1. Ethical conduct and professional accountability. 3.2. Effective oral and written communication in professional and lay domains.	ME309 Project Management ME310 Engineering Competency Demonstration Report	

3.3. Creative, innovative and pro-active demeanour. 3.4. Professional use and management of information. 3.5. Orderly management of self, and professional conduct. 3.6. Effective team membership and team leadership.		

- the choice of the teaching-learning (delivery) methods.
- The curricular approach, the educational content and the teaching-learning
- assessment & evaluation methods for the attainment achievement of the Learning Outcomes. (MEng C)

  Assessment Validation

  http://www.highlightcomputer.com/assessmentvalidation.htm

  The folder in the above link contains the assessment validation documents for IQY Technical College 's programs
- A balanced curriculum shall include all technical and non-technical attributes listed in the Learning Outcomes, (the essential elements forming the core of the programme and additional specialist or optional studies (electives). (MEng C)

- The curriculum shall integrate theory with practice through adequate exposure to laboratory work and professional engineering(MEng C)
- Time allocation
- Credit points (The academic programme component must consist of a minimum total of 120 credit (a) A minimum of 80 credit hours shall be engineering courses consisting of engineering sciences and engineering design/projects appropriate to the student's field of study. (MEng C)

  (b) The remaining credit hours shall include sufficient content of general education component (such as mathematics, computing, languages, general studies, co- curriculum, management, law, accountancy, ec(MEng C)

The following curriculums are prepared to address the above issues

http://www.highlightcomputer.com/BECurriculum.htm

http://www.highlightcomputer.com/DiplomaAdvancedDiplomaCivilEngineeringCurriculum.htm

http://www.highlightcomputer.com/DiplomaAdvancedDiplomaElectricalEngineeringCurriculum.htm

http://www.highlightcomputer.com/DiplomaAdvancedDiplomaMechanicalEngineeringCurriculum.htm

Diploma in Engineering

This program is designed with 30 credit points integrating 15 credit points Certificate in Electrical Engineering. The completion of this program can be articulated into 60 points Advanced Diploma in Electrical Engineering & 120 credit points Professional Diploma in Electrical Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

Advanced Diploma in Electrical Engineering

This program is designed with 60 credit points integrating 30 credit points Diploma in Electrical Engineering. The completion of this program can be articulated into 60 of 120 credit points Professional Diploma in Electrical Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

Professional Diploma in Civil Engineering

This program is designed with 120 credit points integrating 60 credit points Advanced Diploma in Civil Engineering. The completion of this program can be awarded Professional Diploma in Civil Engineering together with the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

Curriculum Contents (MEng C)

Diploma in Electrical Engineering the curriculum content should cover the following:

(i) Engineering mathematics, science, engineering principles, skills and tools (computing, experimentation) appropriate to the discipline of study

The curriculums have been designed to cover the following aspects.

Study Areas (Overview)

Electrical circuits, Basic Electronics, Mathematics, Physics, Electrical Wiring, Electrical Machines, Electro-magnetism, Computer Applications, Control System, Process Control, Electrical Contracting, Solar Electrical System, Electrical Drafting

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Electrical Engineering Course Outline

http://www.highlightcomputer.com/Diploma_&_Advanced_Diploma_in_Electrical_Engineering_Course_outline.doc

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs

http://www.highlightcomputer.com/detailedcontent.htm

Diploma in Mechanical Engineering

Study Areas

Mathematics, Physics, Machine Principle, Electrical Circuits, Heat Transfer, Principle of Engines, Fluid Mechanics, Engineering Mechanics, Mechanical Drawing,Hydrocarbon, Wind Turbine, Polymer Science, Turbo Machinery, Basic Management

Specialized Fields

Automotive Engineering, Marine Engineering

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Mechanical Engineering Course Outline

http://www.highlightcomputer.com/Diploma_in_Mechanical_Engineering.doc

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs

http://www.highlightcomputer.com/detailedcontent.htm

Diploma in Civil Engineering

Study Areas

Mathematics, Physics, Electrical Principle,Fluid Mechanics, Hydraulics, Hydrology, Building Construction, Sanitation & Water Supply, Energy Efficient Building Design

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Civil Engineering Course Outline

http://www.highlightcomputer.com/Diploma_in_Civil_Engineering.doc

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs

http://www.highlightcomputer.com/detailedcontent.htm

Diploma in Renewable Energy Engineering

Study Areas

Foundation Studies in Renewable Energy and Sustainability, Grid Connected Photovoltaic Power Systems, Solar and Thermal Energy Systems, Energy Storage Systems, Renewable Energy Resource Analysis, Wind Energy Conversion Systems, Energy System Efficiency

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Renewable Energy Engineering Public Seminar + Diploma& Bachelor of Engineering (Renewable Energy)

http://www.highlightcomputer.com/re.pdf

Diploma in Computer Engineering/ Diploma in Information Technology

Study Areas

IT Fundamental , Computer Application, Computer Programming, System Analysis, Software Engineering, IT Project, Business Information System

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Diploma in Information Technology Course Outline

http://www.highlightcomputer.com/Diploma_in_Information_Technology_Course_outline.doc

Electrical Engineering Course Outline

http://www.highlightcomputer.com/Diploma_&_Advanced_Diploma_in_Electrical_Engineering_Course_outline.doc

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs

http://www.highlightcomputer.com/detailedcontent.htm

Advanced Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology) Course Outlines

Advanced Diploma in Engineering can be studied in the following specializations

- Advanced Diploma in Electrical Engineering
- Advanced Diploma in Mechanical Engineering
- Advanced Diploma in Civil Engineering
- Advanced Diploma in Renewable Energy Engineering
- Advanced Diploma in Computer Engineering / Advanced Diploma in Information Technology

Advanced Diploma in Electrical Engineering

Study Areas

Electrical Power Circuits, Electrical Power System, Mathematics, Physics, AC/DC Machines, Control System, Power System Protection, Energy Efficiency, Project Management, Advanced Electrical Drafting, Power Transmission Line, Engineering Officer Competency Report.

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs

http://www.highlightcomputer.com/detailedcontent.htm

Advanced Diploma in Mechanical Engineering

Study Areas

Higher Mathematics, Fluid Dynamics, Automation & Robotics, Computer Aided Design & Manufacturing, Control System, Manufacturing, Mechatronics, Numerical Control, Pneumatics, Building Services. Air-conditioning Refrigeration

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs

http://www.highlightcomputer.com/detailedcontent.htm

Advanced Diploma in Civil Engineering

Study Areas

Surveying, Road & Bridges, Structure, Estimating, Electrical Installation, Electrical Wiring, Air-conditioning Refrigeration, Engineering Mechanics

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs

http://www.highlightcomputer.com/detailedcontent.htm

Advanced Diploma in Renewable Energy Engineering

Study Areas

Advanced contents in Renewable Energy, Electrical Engineering, Basic Civil & Mechanical Enginering, Electrical Machines, Electronics Control

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Renewable Energy Engineering Public Seminar + Diploma& Bachelor of Engineering (Renewable Energy)

http://www.highlightcomputer.com/re.pdf

Advanced Diploma in Computer Engineering/ Advanced Diploma in Information Technology

Study Areas

Organizational Behaviour, IT Networking, Information System Analysis & Design, Advanvced Programming, Project Work

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Advanced Diploma in Information Technology Course Outline

http://www.filefactory.com/file/7dmpqlotj2fn/n/Advanced_Diploma_in_Information_Technology_pdf

Electrical Engineering Course Outline

http://www.highlightcomputer.com/Diploma_&_Advanced_Diploma_in_Electrical_Engineering_Course_outline.doc

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs

http://www.highlightcomputer.com/detailedcontent.htm

Professional Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology)

It is designed at the same academic requirement as to Bachelor of Engineering degree but IQY Technical College is operating as a vocational education & training college not as a university, the award is to be described as Professional Diploma. The graduates of the Professional Diploma in Engineering can be awarded Bachelor of Engineering by the universities which are affiliated to IQY Technical College.

The program is designed to train the students to become Professional Engineers who are required to take responsibility for engineering projects and programs in the most far-reaching sense.

The program is also designed to provide the skills required for the graduated to lead or manage teams appropriate to these activities, and may establish their own companies or move into senior management roles in engineering and related enterprises.

Professional Diploma in Engineering can be studied in the following specializations

- Professional Diploma in Electrical Engineering
- Professional Diploma in Mechanical Engineering
- Professional Diploma in Civil Engineering
- Professional Diploma in Renewable Energy Engineering
- Professional Diploma in Computer Engineering / Professional Diploma in Information Technology

Professional Diploma in Electrical Engineering

Study Areas

Mathematics, Engineering Mechanics & Thermodynamics, Electrical Circuit Analysis, Electro-magnetics & Electrical Machines, Control System, Power System, Electronics, Telecommunication, Industrial Management, Computer Programming, Computer Network, Engineering Project, Building Services, Competency Demonstration Report Writing, Renewable Energy.

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Bachelor of Engineering (Electrical Engineering) Course Outline

http://www.filefactory.com/file/5ftv3w6yjcrn/BACHELOR%20OF%20APPLIED%20ENGINEERING.doc

Detailed Contents of BE,B Bus& B App Sc (IT) Programs

http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

http://www.highlightcomputer.com/re.pdf

Professional Diploma in Mechanical Engineering

Study Areas

Mathematics, Engineering Mechanics & Thermodynamics, Industrial Management, Computer Programming, Computer Network, Engineering Project, Building Services, ,Air-conditioning & Refrigeration, Machine Design, Mechanical Instrumentation, Production Technology, Engineering Materials, Maintenance Engineering , Mechanical Power Generation, Applied Electrical/Electronics & Control System, Competency Demonstration Report Writing, Renewable Energy.

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Bachelor of Engineering (Mechanical Engineering-Mechatronics) Course Outline

http://www.filefactory.com/file/113wg8regbuh/n/Bachelor_of_Applied_Engineering_Mechanical-Mechatronics_Course_Outline_doc

Bachelor of Applied Engineering (Final Year Mechanical Design) Course Outline

http://www.filefactory.com/file/7greuugxlvyh/n/Graduate_Diploma_of_Mechanical_Engineering_B_App_Eng_Mech_Course_Outline_doc

Detailed Contents of BE,B Bus& B App Sc (IT) Programs

http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

http://www.highlightcomputer.com/re.pdf

Professional Diploma in Civil Engineering

Study Areas

Mathematics, Engineering Mechanics & Thermodynamics, Industrial Management, Computer Programming, Building Construction, Estimating, Fluid Mechanics, Structural Engineering, Reinforce Concrete, Timber Engineering, Soil & Rock Mechanics, Environmental Engineering, Road & Bridges, Building Service Engineering, Traffic Engineering, Surveying, Water Supply Sanitation, Engineering Competency Demonstration Report Writing, Renewable Energy.

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Bachelor of Engineering (Civil Engineering-Building Services) Course Outline

http://www.filefactory.com/file/npiwt5ekau5/Bachelor%20of%20Applied%20Engineering%20%28Civil-Building%20Services%29%20Course%20Outline.doc

Bachelor of Applied Engineering (Final Year Civil Design) Course Outline

http://www.filefactory.com/file/37twg21wx97z/Graduate%20Diploma%20of%20Civil%20Engineering%2BB%20App%20Eng%20%28Civil%29%20Course%20Outline.doc

Detailed Contents of BE,B Bus& B App Sc (IT) Programs

http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

http://www.highlightcomputer.com/re.pdf

Professional Diploma in Renewable Energy Engineering

Study Areas

Foundation Studies in Renewable Energy and Sustainability, Grid Connected Photovoltaic Power Systems, Solar and Thermal Energy Systems, Energy Storage Systems, Renewable Energy Resource Analysis, Wind Energy Conversion Systems, Energy System Efficiency, Mathematics & Physics, Engineering Materials, Civil & Mechanical Engineering, Electrical Engineering, Electrical Machines, Electronics Control, Design & Management, Project, Engineering Competency Demonstration Report Writing.

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Renewable Energy Engineering Public Seminar + Diploma& Bachelor of Engineering (Renewable Energy)

http://www.highlightcomputer.com/re.pdf

Professional Diploma in Computer Engineering/ Professional Diploma in Information Technology

Study Areas

Computer

Computer Programming, Computer Network, Software Engineering, Artificial Intelligence, Telecommunication Engineering, Project Management,

Electrical/Electronics

Electrical Engineering, Analog & Digital Control, Control System, Engineering Management

Engineering Competency Demonstration Report Writing

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Detailed Contents of BE,B Bus& B App Sc (IT) Programs
http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

Bachelor of Engineering (Electrical Engineering) Course Outline

http://www.filefactory.com/file/5ftv3w6yjcrn/BACHELOR%20OF%20APPLIED%20ENGINEERING.doc

Course	Curriculum Contents Analysis
Diploma in Electrical Engineering	Electrical Principle, Application, Electrical Trade Work, Mathematics, Science, Renewable Energy, Computer Application
Advanced Diploma in Electrical Engineering	Electrical Principle, Application, Electrical Trade Work, Mathematics, Science, Renewable Energy, Computer Application/Mechanical/ Project/ Management/ Engineering Ethics/ Engineering Practice
Professional Diploma in Electrical Engineering	Renewable Energy/ Electrical/Mechanical / Civil Engineering Principle/Computer/ Mathematics/ Design/ Management/ Instrumentation /Engineering Practice/ Ethics with Electrical Power & Electronics major
Diploma in Civil Engineering	Construction & Civil Engineering Principle/ Electrical Principle, Application, Electrical Trade Work, Mathematics, Science, Renewable Energy, Computer Application
Advanced Diploma in Civil Engineering	Construction & Civil Engineering Principle, Structural Engineering/Application, Building & Electrical Trade Work, Mathematics, Science, Renewable Energy, Computer Application/Mechanical/ Project/ Management/ Engineering Ethics/

	Engineering Practice
Professional Diploma in Civil Engineering	Renewable Energy/ Electrical/Mechanical / Civil Engineering Principle/Computer/ Mathematics/ Design/ Management/ Engineering Practice/ Ethics with Civil & Structural Engineering major
Diploma in Mechanical Engineering	Engineering Mechanics &Mechanical Engineering Principle/ Electrical Principle, Application, Electrical Trade Work, Mathematics, Science, Renewable Energy, Computer Application
Advanced Diploma in Mechanical Engineering	Engineering Mechanics &Mechanical Engineering Principle, Materials Engineering /Application/uilding & Electrical Trade Work, Mathematics, Science, Renewable Energy, Computer Application/Mechanical/ Project/ Management/ Engineering Ethics/ Engineering Practice
Professional Diploma in Mechanical Engineering	Renewable Energy/ Electrical/Mechanical / Civil Engineering Principle/Computer/ Mathematics/ Design/ Management/ Instrumentation /Engineering Practice/ Ethics with Mechanical Engineering major

(ii) Engineering applications – projects (MEng C)

Engineering Project Unit

The following llinks contain the evidence of project works

Some students' project works.pdf File

http://www.highlightcomputer.com/Somestudentsprojectworks.htm

(iii) Integrated exposure to professional engineering practice, including management

Practical Training Link Level 3

www.highlightcomputer.com/PracticalCourses.htm

(iv) Laboratory work to complement the science, computing and engineering theory;

Practical Training Link Level 2

Practical Resources

www.highlightcomputer.com/PracticalResources.htm

Physical Resources

www.highlightcomputer.com/PhysicalResources.htm

Learner Resources

www.highlightcomputer.com/LearnerResources.htm

(v) Industrial training -exposure to professional engineering practice in an engineering-practice environment;

+

(vi) Exposure to engineering practice; (MEng C)

The simulated online mode of practical is provided in the following link.

Practical Training Link

www.highlightcomputer.com/PracticalCourses.htm

The folder in the above link contains the Online practical courses for IQY Technical College 's programs.

(vii) Relevant tutorial class (MEng C)

Online discussion & tutorial forums are arranged

Credit Hours (MEng C)

- For a 16-week semester (not including examination or mid-term break), one credit hour is defined as:
- One hour per week of lecture (additional independent study of two hours is assumed to have been included).
- Two hours per week of laboratory or workshop lecture (additional independent learning time of one hour is assumed to have been included).
- Two hours per week of supervised and compulsory tutorial session (additional independent learning time of one hour is assumed to have been included), subject to a maximum of one credit hour for each course in that semester.

- Three hours per week of facilitated activities involving other modes of delivery such as problem-based learning, e-learning modules, site visits, discovery learning, integrated design and coursework projects.
- Three hours per week of activities involving final year project inclusive of meeting with supervisor

One hour per week of lecture

Every 1 credit point has the weighted hour of 24 hours. The credit points are expressed in the curriculum. In online delivery mode, the time to view the videos & time to reflect the learning can be equivalent to lecture hours in face to face classes. The lecture times in the following online videos are arranged as to fulfil the class lecture time.

Online Lecture + Youtube Lecture

www.highlightcomputer.com/videos2.htm

www.highlightcomputer.com/videos1.htm

Two hours per week of laboratory or workshop lecture

The time taken to view the Practical Videos/ To read the practical instruction books/ Design Handbooks are counted as laboratory or workshop hour to do the online practicals in the following links.

www.highlightcomputer.com/PracticalCourses.htm

&

http://www.iqytechnicalcollege.com/youtubevideos.htm

Students Area/ Forum

http://www.highlightcomputer.com/students.htm

Two hours per week of supervised and compulsory tutorial session

The time allocated to download & study the Instruction Powerpoints, Listing to the avdio explanations & do the exercises in the following link is arranged as tutorial sessions time.

http://www.highlightcomputer.com/onlineteaching1.htm

Click HERE to log in the lesson sequences.

Click HERE to log in the online study materials

Click HERE to log in to the Learning Platform

Three hours per week of facilitated activities

This time can be allocated for participation in online forum, reading the learning support CD/DVD, the time to write the assignments & the accumulated time to take part in residential sessions as well as working in the industry.

Industrial Training

- For industrial training, the following guideline shall be followed:
- Industrial training shall be for a minimum of 8 weeks of continuous training. One credit hour is allocated for every two weeks of training subject to a maximum of six credit hours. The training shall be adequately structured, supervised and recored in log book/ record.

The e-Learning Engineering programs are aimed to provide the on-going professional development for the workers in the industry. The work experience recorded are counted for fulfilling the practical training needs to completion the courses.

Final Year Project

- A final year project is subject to a minimum of six credit hours and a maximum of twelve credit

Some students' project works.pdf File

http://www.highlightcomputer.com/Somestudentsprojectworks.htm

The folder in the above link contains the students' project documents related to IQY Technical College 's programs

2 - Students (MEng C)

- Maths+Physics (Remedial)
- Teaching & Learning Environment

9.2.5 Students

- students' performance in relation to Learning Outcomes.
- the requirement and process for admission of students to the programme.
- students' workload.

- iv. Discuss students' activities and involvement in student organisations

The students who need Year 12 level Mathematics & Science are provided with Learning Support online tutorials for Maths & Science at the following link.

http://www.highlightcomputer.com/y712lessons.htm

3 - Academic and Support Staff (MEng C)

- (Postgraduate/ Master degree)
- 9.2.6 Academic and Support Staff
- i. Discuss the strength and competencies of the academic staff in covering all areas of the
- programme.
- ii. Discuss how the overall staff workload enables effective teaching, student-staff interaction,
- student advising and counselling, Technological Institutions and research activities, professional
- development and interaction with industry.
- iii. Discuss the sufficiency and competency of technical and administrative staff in providing
- adequate support to the educational programme.
- iv. The information required in items (i) to (iii) should include but is not limited to the following:
- A breakdown in terms of numbers of academic staff (full-time, part-time and inter-
- programme) by year for the past four years
- An analysis of all academic staff
- academic qualifications of academic staff
- he posts held by full time academic staff
- A summary of teaching workload of academic staff for the current semester
- An analysis of all support staff
- A summary of the posts held by support staff
- The staff: student ratio by year for all academic years for the past four years

The folders in the following links link contains teachers skilled documents of teachers who are teaching the IQY Technical College 's programs

Teacher skilled matrix

http://www.highlightcomputer.com/teacherskillmatrix.htm

Staff list

www.highlightcomputer.com/staff.htm

Staff competency

http://www.highlightcomputer.com/teacherskillmatrix.htm

4 Facilities

- Library

  Quality Management Systems

- controlling, managing, directing, organising and supervising of the overall management system planning, development, delivery and review of engineering programmes

From www.highlightcomputer.com main page, the following online facilities can be accessed by requesting the relevant links.

- Public Library
- Engineering Resources
- Reference Materials & Resources

9.2.7 Facilities

- Discuss the adequacy of teaching and learning facilities such as classrooms, learning-support facilities, study areas, information resources (library), computing and information-technology systems, laboratories and workshops.
- Describe the adequacy of support facilities such as hostels, sport and recreational centres, health centres, student centres, and transport in facilitating students' life on campus and enhancing character building.
- The information required in items (i) to (ii) should be provided in the supporting documents but is not limited to the following:

- A summary, in tabulated form, of the lecture facilities (give number, capacity, and audio video facilities available).
- A summary, in tabulated form, of the laboratories (list down the equipment available in each laboratory).
- A summary, in tabulated form, of the workshops (list down the equipment/machinery available in each workshop).
- A summary, in tabulated form, of the computer laboratories (list down the hardware and software available).
- A summary, in tabulated form, of the other supporting facilities such as the library (list down the titles of books/journals/magazines/standards of relevance to the programme).

From the following link, online practical facilities can be accessed.

Online Practical

Click HERE to log in to the online electrical/ mechanical/civil practical materials. You will need the password.

The password will be issued to the enrolled students.

5 - Quality Management Systems (MEng C)

8.5.2 Programme Quality Management and Planning

- programme planning, curriculum development, and
- regular curriculum and content review must involve all academic staff. The processes include
- reviewing Programme Objectives and Learning Outcomes, tracking the contributions of individual courses to the Learning Outcomes, tracking performance assessment processes, the comments from
- External Examiners, reviewing feedback and inputs from stakeholders including students and alumni.
- The process of continual quality improvement shall be implemented with full accountability. For a new programme,
- External examiner report

8.5.4 Quality Assurance

- Student admission
- Teaching and learning
- Assessment and evaluation which include: examination regulations and criteria for pass/fail
- preparation and moderation processes
- level of assessment
- assessment processes including final year project/industrial training

From the following links, the documents related to Quality Assurance can be accessed.

Online Assessment / Test / Examination/ MCQ link

Online Theory & MCQ Practice

http://www.filefactory.com/file/6m8zvfek7797/n/Online_Theory_MCQ_Practice_pdf

Online Practical Practice

http://www.filefactory.com/file/3ap0vv6o8azx/n/Online_Practical_Practice_pdf

Assessment

From the following links, the documents related to Assessment can be accessed by clicking the relevant menus

www.highlightcomputer.com/assessment.htm

Menus

- **Assessment Cover Sheet+Asessment Information+Assessment Feedbacksheet**
- **Assessment Mapping**
- **Assessment Validation**
- **Components of Assessment Mapping**
- **Test Questions**
- **Units Evaluated by Students-Joe**
- **CC Currency_Checklist_v2.docx**
- **Evaluation-Joe+Keng Goh.docx**
- **Online MCQ Tests+Marking by Joe.doc**

9.2.8 Quality Management System (MEng C)

- Outline the organisational structure of the Technological Institutions as well as the structure within the faculty/department/programme. Discuss the level and adequacy of institutional support, operating environment, financial resources, constructive leadership, policies mechanisms for attracting, appointing, retaining and rewarding well-qualified staff and provision of professional development, and provision of infrastructure and support services to achieve Programme Objectives and assure continuity of the programme. All relevant policies are to be made available during the visit.

- Discuss the mechanism for the following: programme planning; curriculum development; curriculum , course review and course monitoring; internal audit; management review meeting; responding to feedback and inputs from stakeholders including industry advisors, students and alumni; tracking the contribution of individual courses to the Learning Outcomes; tracking outcomes of performance through assessment; responding to External Examiners comments; reviewing of Programme Objectives and Learning Outcomes; and continual quality improvement. Where these are discussed elsewhere in the report, specify their locations.

- Summarise responses to the external examiner's report.

- Discuss how the quality management system of the Technological Institutions provides quality assurance and benchmark.

- The information required items (i) to (iv) should be provided in the supporting document and is not limited to the following:

As this document provides the development of e-Learning in engineering for small and medium size colleges and institutes where the program planning and management tasks are mainly performed by one or two key staff, for the larger institutions, more complex and wider organizational structure can be designed.

1. Evidence on the participation of academic staff, support staff and students in the continual quality improvement process. (MEng C)

2. Evidence on the development of academic staff through opportunities in further education, industrial exposure, as well as research and development.

3. Policies, internal processes and practices that are in place at all levels within the Technological Institutions relating to the five criteria as stated in Section 9 of this Manual.

4. Evidence of the on-going participation of industry advisors in discussions and forums,

From the following links, the documents related to Assessment Validation & Quality Assurance can be accessed by clicking the relevant menus

Quality Assurance/

http://www.highlightcomputer.com/QualityAssurance.htm

Menus 1

- Audit Documents
- Assessment Validation
- Completed students assessment
- Unit asasessment

Menus 2

1 Assessment Tasks & Related Information

2 Assessment Methods

3 Assessor Guide

4 Assessment Results

5 Assessment Validation

6.StudentsAssessment Information

EKAS-Assessment Validation-EE-OZ+IEAust

9.3 Supporting Material Document – Digital Format (MEng C)

This document is to provide supporting material for the programme in digital format (softcopy) as follows:

9.3.1 Supporting Information

- Provide additional information on the Technological Institutions, faculty/school/department, and programme not provided in the Self-Assessment Report.

9.3.2 Academic and Laboratory Support Staff

- Provide personal file and certificate for each staff member.

Staff file

9.3.3 Programme Structure and Contents

- Provide evidence of the use of tutorials and non-conventional delivery methods such as Problem Based Learning (PBL) techniques alongside traditional lectures. Provide a summary of industrial training schemes, and list of companies involved. Provide evidence of activities relevant to industry exposure.

From the following link, online practical facilities can be accessed.

Online Practical Link

Click HERE to log in to the online electrical/ mechanical/civil practical materials. You will need the password.

The password will be issued to the enrolled students

9.3.4 Equipment, Software and Titles of Books and Journals

- Provide a list of all equipment and software used by the programme including recent additions and planned additions, as well as the titles of books, and journals for the programme.

Physical Resources folder

From the following link, practical resources can be accessed.

Practical Resources

www.highlightcomputer.com/PracticalResources.htm

Physical Resources

www.highlightcomputer.com/PhysicalResources.htm

Learner Resources

www.highlightcomputer.com/LearnerResources.htm

9.3.5 External Examiner and Advisory Board (MEng C)

- Provide the external examiner's reports and reports/minutes from advisory board meetings.

9.4 Institutional Documents and Additional Documentation to be Made Available during the Visit

- The following items, which constitute evidence to support the information requested in Sections 9.2 and 9.3 shall be made available during the visit:

9.4.1 Technological Institutions Documents

- Provide the Handbook, Calendar supplement, or other official publications relating to the faculty/school/department, and containing the statement of programme details; Technological Institutions brochure and any other documents that relate to the faculty/school/department,

9.4.2 Documents Related to Programme Objectives and Outcomes

- Provide all relevant documents and evidence related to Programme Objectives and Learning Outcomes (one copy) as follows:
- Course files – for every course offered by the programme, provide the course information to include the targeted course learning outcomes, course synopsis/syllabus, and a list of references (texts used).
- Final examination papers complete with answer scheme and graded examination papers with low, medium and high grades are also to be provided.
- Any information with regard to other learning activities and assessment measures such as projects, quizzes, tutorial questions, assignments, class projects, copies of the course notes (optional), and any other materials used for the course are also to be included. For laboratory courses,
- Objectives and outcomes assessment instruments – supporting documentation for objectives and
- outcomes assessment including sample questionnaires, portfolios, survey forms, video recordings, etc.
- All evidence related to Continual Quality improvement of the program.

The documents related to above requirements are presented in DVDs and will be available upon request.

DVD Contents

- Mixed DVD Lessons School + Higher Education/ IQY+STCTU Degrees

- Study Guides+Lessons for Adv Dip Eng+Mgt+IT ALL Combined Update Mixed
- Study Guides+Lessons for Bachelor Degree-Common Subjects 1 Mixed
- Students File/ Evidences
- BE Test
- EE Test
- CE Test
- ME Test
- Assessment/
- Assessment Cover Sheet+Asessment Information+Assessment Feedbacksheet
- Assessment Mapping
- Assessment Validation
- Components of Assessment Mapping
- Test Questions
- Unit Evaluation

Self-Assessment Report – Hardcopy (MEng C)

- A Self-Assessment Report is an account of the Technological Institutions' plan, implementation, assessment and evaluation of the programme conducted. It reflects the processes with result obtained used in continual quality improvement at all levels of the programme's activities. This appropriately bound document, ranging between 50 – 100 pages with all pages numbered and a table of contents.

A minimum of 120 credit hours of which 80 credit hours must be core engineering courses offered

over a period of four years(It means 3 rd ,4 th ,5 th ,6 th).

Final year project (minimum 6 credit hours)

Industrial training (minimum of 8 weeks)

The above requirements have been provided in curriculum section

9.4.3 Final Project Reports

- For a sample of students, provide a copy of the final project report, instruction sheets, and grade
- sheets or other means of evaluation for the project.
- Provide the listing of final project titles for the past few years.

From the following links, the students project works can be accessed.

Some students' project works.pdf File

http://www.highlightcomputer.com/Somestudentsprojectworks.htm

9.4.4 Industrial Training Reports (MEng C)

- For a sample of students, provide a copy of the training reports, guidelines for the training, and reviews by the industry sponsors as well as the faculty mentors.

9.4.5 Laboratory Reports

- For a sample of students, provide a copy of the laboratory reports, instruction sheets, and grade sheets or other means of evaluation for the project laboratory report.

From the link below, the above 9.4.4 *& 9.4.5 and the records related to the following points can be accessed.

- Practical participation Record
- Elect Eng Students' taking parts in practicals(Joe).pdf

http://www.highlightcomputer.com/studentstakingpartinpractical.htm

9.4.6 Quality Assurance Records (MEng C)

- Provide minutes and records of action and improvement of meetings of the programme teaching team,

From the link below, records related to the above 9.4.6 can be accessed.

http://www.highlightcomputer.com/QualityAssuranceRecords.htm

ATTACHMENTS

1. Curriculum

   http://www.highlightcomputer.com/BECurriculum.htm

2. Assessment Validation Records & Assessment Evidences

   www.highlightcomputer.com/assessmentvalidation.htm

   - **Assessment/**
   - **Assessment Cover Sheet+Asessment Information+Assessment Feedbacksheet**
   - **Assessment Mapping**
   - **Assessment Validation**
   - **Components of Assessment Mapping**
   - **Test Questions**
   - **Unit Evaluation**

3. Quality Assurance Records

   http://www.highlightcomputer.com/QualityAssurance.htm

   Teachers Skills Currency Check List

   Students' assessment Evidences

   Units evaluated by students

   Units evaluated by internal & external assessors

4. Practical Resources

   Practical Resources

   http://www.highlightcomputer.com/PracticalCourses.htm

   www.highlightcomputer.com/PracticalResources.htm

5. Students' work Records

   http://www.highlightcomputer.com/Somestudentsprojectworks.htm

6. Industrial Consultation

   http://www.highlightcomputer.com/industryconsultation.htm

7. List of Reference Textbooks utilized in Engineering Programs

http://www.highlightcomputer.com/ReferenceTextBooks.pdf

8. DVD Containing Lesson Materials

   Study Lesson & Reading Materials

   http://www.highlightcomputer.com/studylesson1.htm

   Online Teaching

   http://www.highlightcomputer.com/onlineteaching1.htm

   Public Library

   http://www.highlightcomputer.com/gen1.htm

   Electronic Library

   http://www.highlightcomputer.com/elib.htm

   http://www.filefactory.com/file/7ife2afh5ugr/Gen13Dec2013_htm

   Reference Materials & Resources

   http://www.highlightcomputer.com/usb.htm

   Professional Engineer Support

   http://www.highlightcomputer.com/pesupport.htm

9. DVD Containing Learner Resources

   Physical Resources

   www.highlightcomputer.com/PhysicalResources.htm

   Learner Resources

   www.highlightcomputer.com/LearnerResources.htm

   - Study Guides+Lessons for Adv Dip Eng+Mgt+IT ALL Combined Update Mixed
   - Study Guides+Lessons for Bachelor Degree-Common Subjects 1 Mixed

(A)LECTURES

www.highlightcomputer.com/videos1.htm

www.highlightcomputer.com/videos2.htm

www.iqytechnicalcollege.com/youtubevideos.htm

(B)SELF DIRECTED STUDY GUIDES

http://www.highlightcomputer.com/elearningplatform.htm

ELECTRICAL

(1) Instruction to Electrical Students
http://www.iqytechnicalcollege.com/Instruction-Fiji-Elect Engg.pdf

CIVIL

(1) **Instruction to Civil Students**
http://www.iqytechnicalcollege.com/Instruction Fiji-Civil Engg.pdf

MECHANICAL

(1) Instruction to Mechanical students

http://www.iqytechnicalcollege.com/Instruction-Fiji-MechEngg.pdf

RENEWABLE ENERGY

www.highlightcomputer.com/RELessons.htm

INDUSTRIAL SAFETY & HAZARDOUS PROTECTION

www.highlightcomputer.com/profdiphazardous.htm

(C)TUTORIAL

Online Class Tutoring & Study Lessons

http://www.filefactory.com/file/290j43qtca5r/ClassTutoringLessons.htm

www.highlightcomputer.com/onlineteaching.htm

Study Lessons

- Class Tutoring (Certificate+ Diploma+ Advanced Diploma+ Bachelor Degree) Programs in Electrical, Mechanical, Civil Engineering, Information Technology, Management & E-Business & Management

  http://www.filefactory.com/file/2j8u9ccwrlqx/Class_Tutoring_Lessons_htm

- **Reference Lessons+Study Guides**

  Electrical Diploma

  http://www.filefactory.com/file/2oojs84b3ovx/highlightcomputergroup1_htm

  Electrical Engineering

  http://www.filefactory.com/file/7bdts4v3yi49/Bachelor_of_Applied_Engineering_Electrical_Engineering_Home_htm

  Mechanical Engineering+ Civil Engineering

  http://www.filefactory.com/file/3ud1pk458gqp/highlightcomputergroup5_htm

  Management

  http://www.filefactory.com/file/53f1g058qq1p/highlightcomputergroup2_htm

Information technology

http://www.filefactory.com/file/2q3y5kyc22f1/highlightcomputergroup3_htm

- Electronics Library General Technical Support Program

  http://www.filefactory.com/file/1ulcpeyyjbu5/gtc_htm

  http://www.filefactory.com/file/5vnf7v9rodxd/n/E_Lib_Engg_Book_Catalogue_pdf

- Australian Electrical Trainings

  http://www.filefactory.com/file/7j01gm1ixvej/electricaldiploma2013Update1_htm

10. DVD Containing Assessment Validation & Quality Assurance Materials

Teacher skilled matrix

http://www.highlightcomputer.com/teacherskillmatrix.htm

Staff list

www.highlightcomputer.com/staff.htm

Staff competency

http://www.highlightcomputer.com/teacherskillmatrix.htm

11. DVD Contents

Professional Diploma in Engineering (Electrical, Civil, Mechanical, Building Services,Mechatronics)

Tests /Assignment/Project Assessment Questions & Materials

Test Questions

MECHANICAL

P1240529.JPG (3.26MB)
http://www.filefactory.com/file/1gel78kwehfb/n/P1240529.JPG

Download now!

BAE 614 Machine Design.doc (0.55MB)
http://www.filefactory.com/file/gbjya1h93g5/n/BAE_614_Machine_Design.doc

Download now!

BAE512 Building Service Water.doc (0.02MB)
http://www.filefactory.com/file/4xp0xqnt8o7j/n/BAE512_Building_Service_Water.doc

Download now!

BAE 614 Machine Design.doc (0.55MB)
http://www.filefactory.com/file/1t9guppp66y5/n/BAE_614_Machine_Design.doc

Download now!

BAE512 Building Service Water.doc (0.02MB)
http://www.filefactory.com/file/40vcrk1svydp/n/BAE512_Building_Service_Water.doc

Download now!

BAE 613 Mech Instrumentation Process Test.pdf (2.65MB)
http://www.filefactory.com/file/53r4fs72o1f/n/BAE_613_Mech_Instrumentation_Process_Test.pdf

Download now!

BAE 512 Building Service water & Fluid Supply Test.pdf (6.65MB)
http://www.filefactory.com/file/32yi87dda2yr/n/BAE_512_Building_Service_water_&_Fluid_Supply_Test.pdf

Download now!

BAE 315 Material Engg Test.pdf (7.03MB)
http://www.filefactory.com/file/zzlo7bx6tl9/n/BAE_315_Material_Engg_Test.pdf

Download now!

BAE 511 Air Conditioning refrigeration Heat Transfer Test.pdf (0.27MB)
http://www.filefactory.com/file/2h0bvbjw9vn5/n/BAE_511_Air_Conditioning_refrigeration_Heat_Transfer_Test.pdf

Download now!

BAE 314 Mech power Generation Test.pdf (3.58MB)
http://www.filefactory.com/file/7ivses407cl1/n/BAE_314_Mech_power_Generation_Test.pdf

Download now!

BAE 313 Environmental Control Test.pdf (3.6MB)
http://www.filefactory.com/file/4s3gyofo2q9v/n/BAE_313_Environmental_Control_Test.pdf

Download now!

BAE 312 Design Engineering Test.pdf (0.38MB)
http://www.filefactory.com/file/24uqzpscjcot/n/BAE_312_Design_Engineering_Test.pdf

Download now!

BAE 311 Vibration Control Test.pdf (1.3MB)
http://www.filefactory.com/file/6cwggpepc9tz/n/BAE_311_Vibration_Control_Test.pdf

Download now!

ELECTRICAL

BAE 604 Telecommunication Engineering.pdf (0.42MB)
http://www.filefactory.com/file/2nf488wjyc27/n/BAE_604_Telecommunication_Engineering.pdf

Download now!

BAE 607 Radio Wave Propagation.doc (0.02MB)
http://www.filefactory.com/file/5zckxsn1drj/n/BAE_607_Radio_Wave_Propagation.doc

Download now!

BAE 606 Building Service Electrical.doc (0.02MB)
http://www.filefactory.com/file/41tubyiy9ab/n/BAE_606_Building_Service_Electrical.doc

Download now!

BAE 507 Electro Mech Energy Converstion Test.pdf (3.57MB)
http://www.filefactory.com/file/1dfnbz3fn8qx/n/BAE_507_Electro_Mech_Energy_Conversti on_Test.pdf

Download now!

BAE 603 Software Engineering.doc (0.02MB)
http://www.filefactory.com/file/78uis8igintn/n/BAE_603_Software_Engineering.doc

BAE 408 Analog Digital Electronics Test.pdf (2.85MB)
http://www.filefactory.com/file/1icv86jgonvr/n/BAE_408_Analog_Digital_Electronics_Test.pdf

Download now!

BAE 406 Electro-mechanics Test.pdf (9.65MB)
http://www.filefactory.com/file/1dyxf2lbeuph/n/BAE_406_Electro-mechanics_Test.pdf

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BAE 405 Adv Ckt Analysis Test.pdf (5.8MB)
http://www.filefactory.com/file/2d8mk01ih7ml/n/BAE_405_Adv_Ckt_Analysis_Test.pdf

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BAE 404 Engg Thermodynamics+Strength of Materials Test.pdf (12.44MB)
http://www.filefactory.com/file/3vsonvnumqt1/n/BAE_404_Engg_Thermodynamics+Strength_of_Materials_Test.pdf

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BAE 403 Engineering Mechanics Test.pdf (10.29MB)
http://www.filefactory.com/file/9jx3zdcmedx/n/BAE_403_Engineering_Mechanics_Test.pdf

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BAE 402 Calculus Test.pdf (5.34MB)
http://www.filefactory.com/file/1snvfcaz08y9/n/BAE_402_Calculus_Test.pdf

BAE 401 Adv Engg Maths Test.pdf (6.19MB)
http://www.filefactory.com/file/dbxhi97np5z/n/BAE_401_Adv_Engg_Maths_Test.pdf

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CIVIL

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Download now!

BAE624 Water Supply , Sanitation & Finishing Test.docx (0.01MB)
http://www.filefactory.com/file/6xndp4h8lf47/n/BAE624_Water_Supply_,_Sanitation_&_Finishing_Test.docx

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BAE621 Structural Engineering Test.pdf (0.38MB)
http://www.filefactory.com/file/4l4jo76f96fb/n/BAE621_Structural_Engineering_Test.pdf

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BAE621 Structural Engineering Test.pdf (0.38MB)
http://www.filefactory.com/file/62fwl7z5d6rr/n/BAE621_Structural_Engineering_Test.pdf

Download now!

BAE523 Environmental Engineering.JPG (3.6MB)
http://www.filefactory.com/file/21h47s7ug4qt/n/BAE523_Environmental_Engineering.JPG

Download now!

BAE621 Structural Engineering Test.docx (1MB)
http://www.filefactory.com/file/e4qnt7u5y95/n/BAE621_Structural_Engineering_Test.docx

Download now!

BAE 422 Estimating.Assignment.doc (2.84MB)
http://www.filefactory.com/file/62z3lbp0roox/n/BAE_422_Estimating.Assignment.doc

Download now!

BAE423 Fluid Mechanics Test.doc (0.03MB)
http://www.filefactory.com/file/36hvor7mj6j5/n/BAE423_Fluid_Mechanics_Test.doc

Download now!

BAE 623 Surveying + traffic Engineering Test Question.doc (0.44MB)
http://www.filefactory.com/file/1gnlw2rg3ggx/n/BAE_623_Surveying_+_traffic_Engineering_Test_Question.doc

Download now!

BAE 525 Timber Engineering Test.doc (0.03MB)
http://www.filefactory.com/file/5vkk2w4he59h/n/BAE_525_Timber_Engineering_Test.doc

COURSE OBJECTIVES

DIPLOMA IN ENGINEERING (ELECTRICAL/CIVIL/MECHANICAL/COMPUTER/RENEWABLE ENERGY)

DIPLOMA IN INFORMATION TECHNOLOGY

DIPLOMA IN MANAGEMENT

ADVANCED DIPLOMA IN ENGINEERING (ELECTRICAL/CIVIL/MECHANICAL/COMPUTER/RENEWABLE ENERGY)

ADVANCED DIPLOMA IN INFORMATION TECHNOLOGY

ADVANCED DIPLOMA IN MANAGEMENT

PROFESSIONAL DIPLOMA IN ENGINEERING (ELECTRICAL/CIVIL/MECHANICAL/COMPUTER/RENEWABLE ENERGY

PROFESSIONAL DIPLOMA IN INFORMATION TECHNOLOGY

PROFESSIONAL DIPLOMA IN BUSINESS MANAGEMENT

Diploma in Electrical Engineering
Diploma in Mechanical Engineering
Diploma in Civil Engineering
Diploma in Computer Engineering
Diploma in Renewable Energy Engineering

Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology) Course Outlines

IQY Technical College's one year Diploma in Engineering is designed to train the students to work as Engineering Associate or Engineering Technicians in wide ranges of industries.
It is designed to provide the following competencies.
To train the students to have a wide range of functions within engineering enterprises and engineering teams.
The training includes feasibility investigation, scoping, establishing criteria/performance measures, assessing and reporting technical and procedural options; design and development; component, resources and materials sourcing and procurement; construction, prototyping, manufacture, testing, installation, commissioning, service provision and de-commissioning; tools, plant, equipment and facilities acquisition, management, maintenance, calibration and upgrades; operations management; procedures documentation; presentation and reporting; maintenance systems design and management; project and facility management; quality assurance, costing and budget management; document control and quality assurance.
The training is designed for the students

- To be closely familiar with standards and codes of practice, and to become expert in their interpretation and application to a wide variety of situations.
- To develop very extensive experience of practical installations, and may well be more knowledgeable than Professional Engineers or Engineering Technologists on detailed aspects of plant and equipment that can contribute very greatly to safety, cost or effectiveness in operation.
- To develop high levels of expertise in aspects of design and development processes. These might include, for example, the use of advanced software to perform detailed design of structures, mechanical components and systems, manufacturing or process plant, electrical and electronic equipment, information and communications systems, and so on.
- To do the construction of experimental or prototype equipment.
- To develop detailed practical knowledge and experience complementing the broader or more theoretical knowledge of others.

The training is also designed to provide a good grounding in engineering science and the principles underlying their field of expertise, to ensure that their knowledge and skills are portable across different applications and situations within the broad field of practice. Equipment, vendor or context-specific training in a particular job are not sufficient to guarantee generic competency. Given a good knowledge base, however, the graduates may build further on this through high levels of training in particular contexts and in relation to particular equipment.
The competencies of graduates to equip them to certify the quality of engineering work and the condition of equipment and systems in defined circumstances, laid down in recognised standards and codes of practice.
The training is also designed to lead or manage teams appropriate to these activities. Some may establish their own companies or may move into senior management roles in engineering and related enterprises, employing Professional Engineers, Engineering Technologists, and other specialists where appropriate.

Diploma in Engineering can be studied in the following specializations

- Diploma in Electrical Engineering
- Diploma in Mechanical Engineering
- Diploma in Civil Engineering
- Diploma in Renewable Energy Engineering
- Diploma in Computer Engineering / Diploma in Information Technology

Diploma in Electrical Engineering

This program is designed with 30 credit points integrating 15 credit points Certificate in Electrical Engineering. The completion of this program can be articulated into 60 points Advanced Diploma in Electrical Engineering & 120 credit points Professional Diploma in Electrical Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Diploma in Electrical Engineering can apply for Associate Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.
Study Areas
Electrical circuits, Basic Electronics, Mathematics, Physics, Electrical Wiring, Electrical Machines, Electro-magnetism, Computer Applications, Control System, Process Control, Electrical Contracting, Solar Electrical System, Electrical Drafting
Detailed contents of the units
Detailed contents of the units can be viewed at the following links.
Electrical Engineering Course Outline
http://www.highlightcomputer.com/Diploma_&_Advanced_Diploma_in_Electrical_Engineering_Course_outline.doc
Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs
http://www.highlightcomputer.com/detailedcontent.htm

Diploma in Mechanical Engineering

This program is designed with 30 credit points integrating 15 credit points Certificate in Mechanical Engineering. The completion of this program can be articulated into 60 points Advanced Diploma in Mechanical Engineering & Mechatronics & 120 credit points Professional Diploma in Mechanical Engineering & Mechatronics which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Diploma in Mechanical Engineering can apply for Associate Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.
Study Areas
Mathematics, Physics, Machine Principle, Electrical Circuits, Heat Transfer, Principle of Engines, Fluid Mechanics, Engineering Mechanics, Mechanical Drawing,Hydrocarbon, Wind Turbine, Polymer Science, Turbo Machinery, Basic Management
Specialized Fields
Automotive Engineering, Marine Engineering
Detailed contents of the units
Detailed contents of the units can be viewed at the following links.
Mechanical Engineering Course Outline
http://www.highlightcomputer.com/Diploma_in_Mechanical_Engineering.doc
Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs
http://www.highlightcomputer.com/detailedcontent.htm

Diploma in Civil Engineering

This program is designed with 30 credit points integrating 15 credit points Certificate in Civil Engineering & Construction Studies . The completion of this program can be articulated into 60 points Advanced Diploma in Civil Engineering & 120 credit points Professional Diploma in Civil Engineering & Building Services which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Diploma in Civil Engineering can apply for Associate Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.
Study Areas

Mathematics, Physics, Electrical Principle,Fluid Mechanics, Hydraulics, Hydrology, Building Construction, Sanitation & Water Supply, Energy Efficient Building Design
Detailed contents of the units
Detailed contents of the units can be viewed at the following links.
Civil Engineering Course Outline
http://www.highlightcomputer.com/Diploma_in_Civil_Engineering.doc
Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs
http://www.highlightcomputer.com/detailedcontent.htm

Diploma in Renewable Energy Engineering
This program is designed with 30 credit points integrating 15 credit points Certificate in Renewable Energy Course Completion Certificate which is delivered through the public seminars . The completion of this program can be articulated into 120 credit points Professional Diploma in Renewable Energy Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Diploma in Renewable Energy Engineering can apply for Associate Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.
Study Areas
Foundation Studies in Renewable Energy and Sustainability, Grid Connected Photovoltaic Power Systems, Solar and Thermal Energy Systems, Energy Storage Systems, Renewable Energy Resource Analysis, Wind Energy Conversion Systems, Energy System Efficiency
Detailed contents of the units
Detailed contents of the units can be viewed at the following links.
Renewable Energy Engineering Public Seminar + Diploma& Bachelor of Engineering (Renewable Energy)
http://www.highlightcomputer.com/re.pdf

Diploma in Computer Engineering/ Diploma in Information Technology
This program is designed with 30 credit points integrating 15 credit points Certificate in Information Technology . The completion of this program can be articulated into 60 points Advanced Diploma in Information Technology & 120 credit points Professional Diploma in Information Technology or Professional Diploma in Computer Engineering which is the award of Bachelor of Applied Science (Information Technology)/Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Diploma in Computer Engineering can apply for Associate Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.
The graduates of Diploma in Information Technology can apply for membership of International Institute of Science Engineering & Management.
To be awarded Diploma in Computer Engineering, the students need to do Diploma in Information Technology & Diploma in Electrical Engineering at the same time.
Study Areas
IT Fundamental , Computer Application, Computer Programming, System Analysis, Software Engineering, IT Project, Business Information System
Detailed contents of the units
Detailed contents of the units can be viewed at the following links.
Diploma in Information Technology Course Outline
http://www.highlightcomputer.com/Diploma_in_Information_Technology_Course_outline.doc
Electrical Engineering Course Outline
http://www.highlightcomputer.com/Diploma_&_Advanced_Diploma_in_Electrical_Engineering_Course_outline.doc
Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs
http://www.highlightcomputer.com/detailedcontent.htm

Advanced Diploma in Electrical Engineering
Advanced Diploma in Mechanical Engineering
Advanced Diploma in Civil Engineering
Advanced Diploma in Computer Engineering
Advanced Diploma in Renewable Energy Engineering

Advanced Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology) Course Outlines
IQY Technical College's two years Advanced Diploma in Engineering is designed to train the students to work as Engineering Technologist in wide ranges of industries.
It is designed to provide the following competencies.
To train the students to operate within broadly-defined technical environments, and undertake a wide range of functions and responsibilities. They are often specialists in the theory and practice of a particular branch of engineering technology or engineering-related technology (the technology domain), and specifically in its application, adaptation or management, in a variety of contexts. Their expertise often lies in familiarity with the current state of development of a technology domain and most recent applications of the technology.
The training is designed to provide expertise to the students which may be at a high level, and fully equivalent to that of a Professional Engineer. That is designed

- to exercise the same breadth of perspective as Professional Engineers, or carry the same wide-ranging responsibilities for stakeholder interactions, for system integration, and for synthesising overall approaches to complex situations and complex engineering problems.
- to possess for a strong understanding of practical situations and applications, with the intellectual challenge of keeping abreast of leading-edge developments as a specialist in a technology domain and how these relate to established practice. For this purpose Engineering Technologists need a strong understanding of scientific and engineering principles and a well-developed capacity for analysis.
- to apply current and emerging technologies, often in new contexts; or with the application of established principles in the development of new practice.
- To contribute to the advancement of technology.
- to take responsibility for engineering projects, services, functions and facilities within a technology domain, for specific interactions with other aspects of an overall operating context and for managing
- to contribute the specialist work to a broader engineering system or solution. In these roles, Engineering
- to focus on sustainable solutions and practices which optimise technical, social, environmental and economic outcomes within the technology domain and over a whole systems life cycle.
- to have an intimate understanding of the standards and codes of practice that underpin the technology domain and ensure that technology outcomes comply with statutory requirements. Engineering Technologists are required to interact effectively with Professional Engineers and Engineering Associates, with other professionals, tradespersons, clients, stakeholders and society in general, to ensure that technology outcomes and developments fully integrate with the overall system and context.
- to ensure that all aspects of a technological product, or operation are soundly based in theory and fundamental principle.
- to understand how new developments relate to their specific field of expertise.
- to interpret technological possibilities, to investigate interfaces, limitations, consequences, costs and risks.

The training is also designed to provide the skills of Engineering Technologists who may lead teams responsible for the implementation, operation, quality assurance, safety, management, and maintenance of projects, plant, facilities, or processes within specialist practice area(s) of the technology domain. Some Engineering Technologists may establish their own companies or may move into senior management roles in engineering and related enterprises, employing Professional Engineers and other specialists where appropriate.
The following competencies are outlined in the Advanced Diploma in Engineering Programs
1. KNOWLEDGE AND SKILL BASE
1.1. Systematic, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the technology domain.
1.2. Conceptual understanding of the, mathematics, numerical analysis, statistics, and computer and information sciences which underpin the technology domain.
1.3. In-depth understanding of specialist bodies of knowledge within the technology domain.
1.4. Discernment of knowledge development within the technology domain.
1.5. Knowledge of engineering design practice and contextual factors impacting the technology domain.
1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the technology domain.

2. ENGINEERING APPLICATION ABILITY
2.1. Application of established engineering methods to broadly-defined problem solving within the technology domain.
2.2. Application of engineering techniques, tools and resources within the technology domain.
2.3. Application of systematic synthesis and design processes within the technology domain.
2.4. Application of systematic approaches to the conduct and management of projects within the technology domain.

3. PROFESSIONAL AND PERSONAL ATTRIBUTES
3.1. Ethical conduct and professional accountability.
3.2. Effective oral and written communication in professional and lay domains.
3.3. Creative, innovative and pro-active demeanour.
3.4. Professional use and management of information.
3.5. Orderly management of self, and professional conduct.
3.6. Effective team membership and team leadership.

Advanced Diploma in Engineering can be studied in the following specializations

- Advanced Diploma in Electrical Engineering
- Advanced Diploma in Mechanical Engineering
- Advanced Diploma in Civil Engineering
- Advanced Diploma in Renewable Energy Engineering
- Advanced Diploma in Computer Engineering / Advanced Diploma in Information Technology

Advanced Diploma in Electrical Engineering

This program is designed with 60 credit points integrating 30 credit points Diploma in Electrical Engineering. The completion of this program can be articulated into 60 of 120 credit points Professional Diploma in Electrical Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Advanced Diploma in Electrical Engineering can apply for Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Study Areas

Electrical Power Circuits, Electrical Power System, Mathematics, Physics, AC/DC Machines, Control System, Power System Protection, Energy Efficiency, Project Management, Advanced Electrical Drafting, Power Transmission Line, Engineering Officer Competency Report.

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs
http://www.highlightcomputer.com/detailedcontent.htm

Advanced Diploma in Mechanical Engineering

This program is designed with 60 credit points integrating 30 credit points Diploma in Mechanical Engineering. The completion of this program can be articulated into 60 of 120 credit points Professional Diploma in Mechanical Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Advanced Diploma in Mechanical Engineering can apply for Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Study Areas

Higher Mathematics, Fluid Dynamics, Automation & Robotics, Computer Aided Design & Manufacturing, Control System, Manufacturing, Mechatronics, Numerical Control, Pneumatics, Building Services. Air-conditioning Refrigeration

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.
Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs
http://www.highlightcomputer.com/detailedcontent.htm

Advanced Diploma in Civil Engineering

This program is designed with 60 credit points integrating 30 credit points Diploma in Civil Engineering. The completion of this program can be articulated into 60 of 120 credit points Professional Diploma in Civil Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Advanced Diploma in Civil Engineering can apply for Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Study Areas

Surveying, Road & Bridges, Structure, Estimating, Electrical Installation, Electrical Wiring, Air-conditioning Refrigeration, Engineering Mechanics

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.
Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs
http://www.highlightcomputer.com/detailedcontent.htm

Advanced Diploma in Renewable Energy Engineering

This program is designed with 60 credit points integrating 30 credit points Certificate in Renewable Energy Course Completion Certificate which is delivered through the public seminars . The completion of this program can be articulated into 120 credit points Professional Diploma in Renewable Energy Engineering which is the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Advanced Diploma in Renewable Energy Engineering can apply for Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

Study Areas

Advanced contents in Renewable Energy, Electrical Engineering, Basic Civil & Mechanical Enginering, Electrical Machines, Electronics Control

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.
Renewable Energy Engineering Public Seminar + Diploma& Bachelor of Engineering (Renewable Energy)
http://www.highlightcomputer.com/re.pdf

Advanced Diploma in Computer Engineering/ Advanced Diploma in Information Technology

This program is designed with 30 credit points integrating 30 credit points Diploma in Information Technology . The completion of this program can be articulated into 60 of 120 credit points Professional Diploma in Information Technology or Professional Diploma in Computer Engineering which is the award of Bachelor of Applied Science (Information Technology)/Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Advanced Diploma in Computer Engineering can apply for Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.
The graduates of Advanced Diploma in Information Technology can apply for membership of International Institute of Science Engineering & Management.
To be awarded Advanced Diploma in Computer Engineering, the students need to do Advanced Diploma in Information Technology & Diploma in Electrical Engineering at the same time.

Study Areas

Organizational Behaviour, IT Networking, Information System Analysis & Design, Advanvced Programming, Project Work

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.
Advanced Diploma in Information Technology Course Outline
http://www.filefactory.com/file/7dmpqlotj2fn/n/Advanced_Diploma_in_Information_Technology_pdf
Electrical Engineering Course Outline
http://www.highlightcomputer.com/Diploma_&_Advanced_Diploma_in_Electrical_Engineering_Course_outline.doc
Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs
http://www.highlightcomputer.com/detailedcontent.htm

Professional Diploma in Electrical Engineering
Professional Diploma in Mechanical Engineering
Professional Diploma in Civil Engineering
Professional Diploma in Computer Engineering
Professional Diploma in Renewable Energy Engineering

Professional Diploma in Engineering (Electrical+ Mechanical+ Civil+ Renewable Energy Engineering+ Computer Engineering & Information Technology) Course Outlines

IQY Technical College's four years Professional Diploma in Engineering is designed to train the students to work as Engineering Technologist /Professional Engineer in wide ranges of industries.
It is designed at the same academic requirement as to Bachelor of Engineering degree but IQY Technical College is operating as a vocational education & training college not as a university, the award is to be described as Professional Diploma. The graduates of the Professional Diploma in Engineering can be awarded Bachelor of Engineering by the universities which are affiliated to IQY Technical College.
The program is designed to train the students to become Professional Engineers who are required to take responsibility for engineering projects and programs in the most far-reaching sense.
It is designed to provide the following competencies.

- To perform the reliable functioning of all materials, components, sub-systems and technologies used; their integration to form a complete, sustainable and self-consistent system; and all interactions between the technical system and the context within which it functions. The latter includes understanding the requirements of clients, wide ranging stakeholders and of society as a whole; working to optimise social, environmental and economic outcomes over the full

lifetime of the engineering product or program; interacting effectively with other disciplines, professions and people; and ensuring that the engineering contribution is properly integrated into the totality of the undertaking.

- To do interpreting technological possibilities to society, business and government; and for ensuring as far as possible that policy decisions are properly informed by such possibilities and consequences, and that costs, risks and limitations are properly understood as the desirable outcomes.
- To bring knowledge to bear from multiple sources to develop solutions to complex problems and issues, for ensuring that technical and non-technical considerations are properly integrated, and for managing risk as well as sustainability issues. While the outcomes of engineering have physical forms, the work of
- To train the students to become predominantly intellectual in nature. In a technical sense, Professional Engineers are primarily concerned with the advancement of technologies and with the development of new technologies and their applications through innovation, creativity and change. Professional Engineers may conduct research concerned with advancing the science of engineering and with developing new principles and technologies within a broad engineering discipline.
- To contribute to continual improvement in the practice of engineering, and in devising and updating the codes and standards that govern it.
- To take a particular responsibility for ensuring that all aspects of a project are soundly based in theory and fundamental principle, and for understanding clearly how new developments relate to established practice and experience and to other disciplines with which they may interact. One hallmark of a professional is the capacity to break new ground in an informed, responsible and sustainable fashion.

The program is also designed to provide the skills required for the graduated to lead or manage teams appropriate to these activities, and may establish their own companies or move into senior management roles in engineering and related enterprises.

COMPETENCIES

1. KNOWLEDGE AND SKILL BASE
1.1. Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline.
1.2. Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline.
1.3. In-depth understanding of specialist bodies of knowledge within the engineering discipline.
1.4. Discernment of knowledge development and research directions within the engineering discipline.
1.5. Knowledge of engineering design practice and contextual factors impacting the engineering discipline.
1.6. Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline.

2. ENGINEERING APPLICATION ABILITY
2.1. Application of established engineering methods to complex engineering problem solving.
2.2. Fluent application of engineering techniques, tools and resources.
2.3. Application of systematic engineering synthesis and design processes.
2.4. Application of systematic approaches to the conduct and management of engineering projects.

3. PROFESSIONAL AND PERSONAL ATTRIBUTES
3.1. Ethical conduct and professional accountability.
3.2. Effective oral and written communication in professional and lay domains.
3.3. Creative, innovative and pro-active demeanour.
3.4. Professional use and management of information.
3.5. Orderly management of self, and professional conduct.
3.6. Effective team membership and team leadership.

Professional Diploma in Engineering can be studied in the following specializations

- Professional Diploma in Electrical Engineering
- Professional Diploma in Mechanical Engineering
- Professional Diploma in Civil Engineering
- Professional Diploma in Renewable Energy Engineering
- Professional Diploma in Computer Engineering / Professional Diploma in Information Technology

Professional Diploma in Electrical Engineering

This program is designed with 120 credit points integrating 60 credit points Advanced Diploma in Electrical Engineering. The completion of this program can be awarded Professional Diploma in Electrical Engineering together with the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Professional Diploma in Electrical Engineering can apply for Fellow of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technologists or ASEAN Engineer.

Study Areas

Mathematics, Engineering Mechanics & Thermodynamics, Electrical Circuit Analysis, Electro-magnetics & Electrical Machines, Control System, Power System, Electronics, Telecommunication, Industrial Management, Computer Programming, Computer Network, Engineering Project, Building Services, Competency Demonstration Report Writing

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Bachelor of Engineering (Electrical Engineering) Course Outline
http://www.filefactory.com/file/5ftv3w6yjcrn/BACHELOR%20OF%20APPLIED%20ENGINEERING.doc

Detailed Contents of BE,B Bus& B App Sc (IT) Programs
http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

Professional Diploma in Mechanical Engineering

This program is designed with 120 credit points integrating 60 credit points Advanced Diploma in Mechanical Engineering. The completion of this program can be awarded Professional Diploma in Mechanical Engineering together with the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Professional Diploma in Mechanical Engineering can apply for Fellow of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technologists or ASEAN Engineer.

Study Areas

Mathematics, Engineering Mechanics & Thermodynamics, Industrial Management, Computer Programming, Computer Network, Engineering Project, Building Services, ,Air-conditioning & Refrigeration, Machine Design, Mechanical Instrumentation, Production Technology, Engineering Materials, Maintenance Engineering , Mechanical Power Generation, Applied Electrical/Electronics & Control System, Competency Demonstration Report Writing

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Bachelor of Engineering (Mechanical Engineering-Mechatronics) Course Outline
http://www.filefactory.com/file/113wq8regbuh/n/Bachelor_of_Applied_Engineering_Mechanical-Mechatronics_Course_Outline_doc
Bachelor of Applied Engineering (Final Year Mechanical Design) Course Outline
http://www.filefactory.com/file/7greuugxlvyh/n/Graduate_Diploma_of_Mechanical_Engineering_B_App_Eng_Mech_Course_Outline_doc

Detailed Contents of BE,B Bus& B App Sc (IT) Programs
http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

Professional Diploma in Civil Engineering

This program is designed with 120 credit points integrating 60 credit points Advanced Diploma in Civil Engineering. The completion of this program can be awarded Professional Diploma in Civil Engineering together with the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.
The graduates of Professional Diploma in Civil Engineering can apply for Fellow of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technologists or ASEAN Engineer.

Study Areas

Mathematics, Engineering Mechanics & Thermodynamics, Industrial Management, Computer Programming, Building Construction, Estimating, Fluid Mechanics, Structural Engineering, Reinforce Concrete, Timber Engineering, Soil & Rock Mechanics, Environmental Engineering, Road & Bridges, Building Service Engineering, Traffic Engineering, Surveying, Water Supply Sanitation, Engineering Competency Demonstration Report Writing.

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Bachelor of Engineering (Civil Engineering-Building Services) Course Outline
http://www.filefactory.com/file/npiwt5ekau5/Bachelor%20of%20Applied%20Engineering%20%28Civil-Building%20Services%29%20Course%20Outline.doc

Bachelor of Applied Engineering (Final Year Civil Design) Course Outline
http://www.filefactory.com/file/37twg21wx97z/Graduate%20Diploma%20of%20Civil%20Engineering%2BB%20App%20Eng%20%28Civil%29%20Course%20Outline.doc

Detailed Contents of BE,B Bus& B App Sc (IT) Programs
http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

Professional Diploma in Renewable Energy Engineering

This program is designed with 120 credit points integrating 60 credit points Advanced Diploma in Renewable Energy Engineering. The completion of this program can be awarded Professional Diploma in Renewable Energy Engineering together with the award of Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

This program explores the way to make the best use of renewable energy technologies including solar thermal systems, photovoltaics, wind and biomass. Renewable Energy Engineering borrows much of its structure from some other areas of engineering, such as electrical engineering and photovoltaic engineering. It encompasses a broad range of renewable energy technologies including electricity generation from solar thermal systems, photovoltaics, wind and biomass. It also covers solar architecture and energy efficient housing design

The graduates of Professional Diploma in Renewable Energy Engineering can apply for Fellow of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technologists or ASEAN Engineer.

Study Areas

Foundation Studies in Renewable Energy and Sustainability, Grid Connected Photovoltaic Power Systems, Solar and Thermal Energy Systems, Energy Storage Systems, Renewable Energy Resource Analysis, Wind Energy Conversion Systems, Energy System Efficiency, Mathematics & Physics, Engineering Materials, Civil & Mechanical Engineering, Electrical Engineering, Electrical Machines, Electronics Control, Design & Management, Project, Engineering Competency Demonstration Report Writing.

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Renewable Energy Engineering Public Seminar + Diploma& Bachelor of Engineering (Renewable Energy)
http://www.highlightcomputer.com/re.pdf

Professional Diploma in Computer Engineering/ Professional Diploma in Information Technology

This program is designed with 120credit points integrating 60 credit points Advanced Diploma in Information Technology . Professional Diploma in Computer Engineering which is the award of Bachelor of Applied Science (Information Technology)/Bachelor of Engineering degree by the universities affiliated IQY Technical College.

The graduates of Professional Diploma in Computer Engineering can apply for Fellow of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technologist or ASEAN Engineer.

The graduates of Professional Diploma in Information Technology can apply for membership of International Institute of Science Engineering & Management.

To be awarded Professional Diploma in Computer Engineering, the students need to do some Bachelor of Engineering (Electrical) units at the same time.

Study Areas

Computer

Computer Programming, Computer Network, Software Engineering, Artificial Intelligence, Telecommunication Engineering, Project Management,

Electrical/Electronics

Electrical Engineering, Analog & Digital Control, Control System, Engineering Management
Engineering Competency Demonstration Report Writing

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Detailed Contents of BE,B Bus& B App Sc (IT) Programs
http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

Bachelor of Engineering (Electrical Engineering) Course Outline
http://www.filefactory.com/file/5ftv3w6yjcrn/BACHELOR%20OF%20APPLIED%20ENGINEERING.doc

Diploma in information Technology

Diploma in Information Technology

This course will provide the students with the skills and knowledge to manage information and communications technology (ICT) support in small-to-medium enterprises using a wide range of general ICT technologies. The students will learn skills to support computer systems, involving people, hardware, software and procedures in a networked environment. They will also learn skills that enable them to maintain and guide teams and manage projects.

This program is designed with 30 credit points integrating 15 credit points Certificate in Information Technology . The completion of this program can be articulated into 60 points Advanced Diploma in Information Technology & 120 credit points Professional Diploma in Information Technology or Professional Diploma in Computer Engineering which is the award of Bachelor of Applied Science (Information Technology)/Bachelor of Engineering degree by the universities affiliated to IQY Technical College.

The graduates of Diploma in Computer Engineering can apply for Associate Member of Singapore Institute of Engineering Technologists & then leading to the professional status of ASEAN Engineering Technician.

The graduates of Diploma in Information Technology can apply for membership of International Institute of Science Engineering & Management.

To be awarded Diploma in Computer Engineering, the students need to do Diploma in Information Technology & Diploma in Electrical Engineering at the same time.

Study Areas

IT Fundamental , Computer Application, Computer Programming, System Analysis, Software Engineering, IT Project, Business Information System

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Diploma in Information Technology Course Outline
http://www.highlightcomputer.com/Diploma_in_Information_Technology_Course_outline.doc

Electrical Engineering Course Outline
http://www.highlightcomputer.com/Diploma_&_Advanced_Diploma_in_Electrical_Engineering_Course_outline.doc

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs
http://www.highlightcomputer.com/detailedcontent.htm

Advanced Diploma in information Technology

Advanced Diploma in Information Technology

The Advanced Diploma in Information Technology provides the students with high level Information and Communications Technology (ICT) process improvement in senior ICT roles within organisations. The qualification builds on a base core of management competencies, with specialist and general elective choices to suit particular ICT and business needs, especially in the areas of knowledge management and systems development.

This qualification is suited to dynamic leaders who wish to broaden their business perspective, enhance management capability and strengthen leadership behaviour. The focus is on managing the strategic direction of a business through leadership, financial management and comprehensive business operations. It is ideal for those in senior management positions with responsibility for strategic leadership across the business or in specialist areas.

The following competencies are integrated in this course

- Provide leadership across the organisation
- Manage employee relations
- Develop and implement a business plan
- Manage organisational change
- Manage innovation and continuous improvement
- Manage risk

· to builds on a solid foundation in software and hardware and through flexible study plans allows students to specialise if desired.
· to include bioinformatics, computer systems and networks, enterprise information systems, human-computer interaction, software design and software information systems at technologist level.
· to be project-focused with studies in programming languages, algorithms and information structure and develop the ability to process data or information in

order to solve problems at technologist level.

- to provide team dynamics, presentation skills and project management at middle class manager level.
- The completion of this program can be articulated into 60 of 120 credit points Professional Diploma in Information Technology which is the award of Bachelor of Applied Science (Information Technology) or Bachelor of Information Technology degree by the universities affiliated to IQY Technical College.
- Detailed contents of the units

Detailed contents of the units can be viewed at the following links

Advanced Diploma in Information Technology Course Outline.

http://www.highlightcomputer.com/Advanced_Diploma_in_Information_Technology.pdf

Diploma in Information Technology Course Outline
http://www.highlightcomputer.com/Diploma_in_Information_Technology_Course_outline.doc

Management Course Outline
http://www.highlightcomputer.com/Diploma_of_Management.doc

Professional Diploma in Information Technology

IQY Technical College's four years Professional Diploma in Information Technology is designed to train the students to work as computing professionals, to use ICT to be a better scientist, or to empower themselves to better understand the technology behind many of today's careers. Increasingly, employers see an ICT qualification as a sign of academic well-roundedness. ICT drives innovations such as the human genome project, vaccine research, environmental modelling. Emerging areas include electronic security, earth simulation (related to the mining boom) and bioinformatics. Independent job market surveys show that demand for graduates is escalating, along with salaries. Industry is concerned about a shortage of talent.

It is designed at the same academic requirement as to Bachelor of Information Technology degree but IQY Technical College is operating as a vocational education & training college not as a university, the award is to be described as Professional Diploma. The graduates of the Professional Diploma in Engineering can be awarded Bachelor of Applied Science (Information Technology) & Bachelor of Information Technology by the universities which are affiliated to IQY Technical College.
The graduates can apply for membership of International Institute of Science Engineering & Management.
The program is designed to train the students to become ICT Professionals who are required to take responsibility for ICT projects and programs in the most far-reaching sense.
It is designed to provide the following competencies.

- to builds on a solid foundation in software and hardware and through flexible study plans allows students to specialise if desired.
- to include bioinformatics, computer systems and networks, enterprise information systems, human-computer interaction, software design and software information systems.
- to be project-focused with studies in programming languages, algorithms and information structure and develop the ability to process data or information in order to solve problems.
- to provide team dynamics, presentation skills and project management.

See the course list for courses that can be studied as part of the Bachelor of Information Technology.

Study Areas

- Computer Systems and Networks
- Enterprise Information Systems
- Human-Computer Interaction
- Software Design
- Software Information Systems
- Electrical Engineering for the award of Professional Diploma in Computer Engineering

Detailed contents of the units
Detailed contents of the units can be viewed at the following links.
Bachelor of Applied Science (Computer Science & Computer Technology)
http://www.highlightcomputer.com/B_App_Sci_(CS&_CT)_Course_outline.pdf

Bachelor of Engineering (Electrical Engineering) Course Outline
http://www.filefactory.com/file/5ftv3w6yjcrn/BACHELOR%20OF%20APPLIED%20ENGINEERING.doc

Professional Diploma of Engineering Practice (Computer Control Engineering) Course Outline
http://www.highlightcomputer.com/Graduate_Diploma_of_Engineering_Practice_Computer_ControlUpdate%5b1%5d.doc

Detailed Contents of BE,B Bus& B App Sc (IT) Programs
http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

Diploma in Management

IQY Technical College's one year Diploma in Management is designed to train the students to work as middle class managers in wide ranges of industries & companies.
This program is designed with 30 credit points integrating 15 credit points Certificate in Information Technology or pure management stream. The completion of this program can be articulated into 60 points Advanced Diploma in Information Technology Management & 120 credit points Professional Diploma in Business Management which is the award of Bachelor of Business Management degree by the universities affiliated to IQY Technical College.
The graduates can apply for membership of The Institute of Professional Business and Technical Managers.
It is designed to provide the following competencies.

- To explore the factors for achieving success with a business, management is becoming increasingly challenging.
- To provide the planning on a management career,
- To provide the understanding of the leadership process will form the foundation to build the management skills.
- To be able to effectively manage others to perform at their best while focusing on the growth of a business.
- This course can turn your management experience into a formal qualification, or it can up-skill you to get further ahead in your career.

This course will also train the students to develop a project plan, manage budgets and seek opportunities for furtherbusiness improvement. The students will gain knowledge on how to liaise with stakeholders and ensure team effectiveness. This diploma also addresses the multiple challenges faced by managers in today's rapidly changing business environment and provides solutions and strategies to work under various business conditions.

This course is fully flexible with no assessment due dates or classes to attend. Structure your learning around students' current commitments and take the next step in their business management career.

Potential career outcomes

- business manager
- team leader
- facilities coordinator

- department manager

Detailed contents of the units

Detailed contents of the units can be viewed at the following links.

Management Course Outline

http://www.highlightcomputer.com/Diploma_of_Management.doc

Detailed Contents of Diploma + Advanced Diploma in Engineering, IT , Management & Business Programs

http://www.highlightcomputer.com/detailedcontent.htm

Advanced Diploma in Management

Advanced Diploma of Information Technology Management

The Advanced Diploma in Information Technology Management provides the students with high level Information and Communications Technology (ICT) process improvement in senior ICT roles within organisations. The qualification builds on a base core of management competencies, with specialist and general elective choices to suit particular ICT and business needs, especially in the areas of knowledge management and systems development.

This program is designed with 60 credit points which is integrated with 30 points from Diploma in Information Technology or Diploma in Management.

- The students who complete Diploma in Information Technology attend the Diploma in Management units together with Advanced Diploma in Information Technology units and then can be graduated with Advanced Diploma in Information Technology Management.
- The students who complete Diploma in Management attend the Diploma in Information Technology units together with Advanced Diploma in Information Technology units and then can be graduated with Advanced Diploma in Information Technology Management.

It is designed to provide the following competencies.

The following competencies are integrated in this course

- Provide leadership across the organisation
- Develop and implement strategic plans
- Manage employee relations
- Develop and implement a business plan
- Manage organisational change
- Manage finances
- Manage innovation and continuous improvement
- Manage risk

- to builds on a solid foundation in software and hardware and through flexible study plans allows students to specialise if desired.
- to include bioinformatics, computer systems and networks, enterprise information systems, human-computer interaction, software design and software information systems at technologist level.
- to provide team dynamics, presentation skills and project management at middle class manager level.

The completion of this program can be articulated into 60 of 120 credit points Professional Diploma in Information Technology or Professional Diploma in Business Management which is the award of Bachelor of Applied Science (Information Technology), Bachelor of Information Technology or Bachelor of Business Management degree by the universities affiliated to IQY Technical College.

Detailed contents of the units

Detailed contents of the units can be viewed at the following links

Advanced Diploma in Information Technology Course Outline.

http://www.highlightcomputer.com/Advanced_Diploma_in_Information_Technology.pdf

Diploma in Information Technology Course Outline
http://www.highlightcomputer.com/Diploma_in_Information_Technology_Course_outline.doc

Management Course Outline
http://www.highlightcomputer.com/Diploma_of_Management.doc

Professional Diploma in Management

Professional Diploma in Business Management

Professional Diploma in Business (Management) is a highly innovative and flexible program that is designed to develop professional capabilities for tomorrow's managers and business leaders.

As well as providing the operational skills and knowledge required to manage successful organisations, students also participate in workplace learning subjects that provide real-life, practical experience.

An optimum blend of theory and practice is offered, with a combination of subjects to develop both soft skills for working with people and hard skills directed at areas in operations and project management.

This course is designed with 120 Credit points integrating 60 Points Advanced Diploma in Information Technology Management.

It is designed at the same academic requirement as Bachelor of Business Management degree but IQY Technical College is operating as a vocational education & training college not as a university, the award is to be described as Professional Diploma. The graduates of the Professional Diploma in Business (Management) can be awarded Bachelor of Business by the universities which are affiliated to IQY Technical College.

The graduates of Professional Diploma in Business (Management) can apply for Membership of Institute of Professional Business and Technical Managers.

Course structure

Bachelor of Business /Bachelor of Applied Management Course Outline

http://www.filefactory.com/file/3dcrz90tirvh/Dip%2BAdv%20Dip%2BB%20Bus%20S%20Course%20Outline.doc

Detailed Contents of BE,B Bus& B App Sc (IT) Programs

http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm

Bachelor of Engineering (Electrical)

Bachelor of Engineering (Civil)

Bachelor of Engineering (Mechanical)

Bachelor of Engineering (Civil-Building Services)

Bachelor of Engineering (Mechanical-Mechatronics)

Bachelor of Applied Science (Information Technology)

Bachelor of Business

Bachelor of Engineering (Electrical)

YEAR 3 +4

Subjects
BAE 401 Advanced Engineering Mathematics
BAE 402 Calculus
BAE 403 Engineering Mechanics
BAE 404 Engineering Materials & Thermodynamics
BAE 405 Advanced Circuit Analysis
BAE 406 Electro-mechanics
BAE 407 Advanced Electro-magnetics Field & Materials
BAE 408 Analogue & Digital Electronics
BAE 501 Advanced Power Systems & Power Transmission Networks
BAE 502 Linear System
BAE 503 Control System
BAE 504 Power System Analysis
BAE 505 Power System Optimization
BAE 506 Power System Stability & Protection
BAE 507 Electro-mechanical Energy Conversion
BAE 508 Industrial Engineering & Industrial Management
BAE 601 Computer Programming
BAE 602 Computer Network
BAE 603 Software Engineering
BAE 604 Telecommunication Engineering
BAE 605 Engineering Management
BAE 606 Building Service Electrical & Mechanical Engineering
BAE 607 Radio Wave Propagation & Microwave Techniques
BAE 608 Professional Engineer Competency Demonstration Report

Bachelor of Engineering (Civil)

Year (3) Part 1 ADVANCED GENERAL CIVIL ENGINEERING DEGREE LEVEL

Subjects

BAE 401 Advanced Engineering Mathematics
BAE 402 Calculus
BAE 403 Engineering Mechanics
BAE 404 Engineering Materials & Thermodynamics
BAE 508 Industrial Engineering & Industrial Management

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Year (3) Part 2 ADVANCED GENERAL CIVIL ENGINEERING DEGREE LEVEL (18 Pt)

BAE421 Building Construction Engineering (4 pt)

BAE422 Estimating (2 pt)

BAE423 Fluid Mechanics (2 pt)

BAE424 Reinforced Concrete (2 pt)

BAE425 Timber Engineering (2 pt)

BAE521 Road & Bridge (2 pt)

BAE522 Rock Mechanics (2 pt)

BAE523 Soil Mechanics (2 pt)

BAE 523A Environmental Engineering

TOTAL 35 Pt

Year (4) Part 1

AE 601 Computer Programming
AE 605 Engineering Management
AE 606 Building Service Electrical & Mechanical Engineering
AE 609 Design Project
otal Credit points in this group

Year (4) Part 1

(12 Pt)

BAE621 Structural Engineering (3 pt)

BAE623 Surveying & Traffic Engineering (2 pt)

BAE624 Water Supply , Sanitation & Finishing (2 pt)

BAE 608 Engineering Competency Demonstration Report Writing (2pt)

SELF STUDY

BAE622 Architecture (3 pt)

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Bachelor of Engineering (Mechanical)

Year (3)

GENERAL APPLIED ENGINEERING (MECHANICAL) DEGREE

ubjects

AE 401 Advanced Engineering Mathematics

AE 402 Calculus

AE 403 Engineering Mechanics

AE 404 Engineering Materials & Thermodynamics

AE 507 Electro-mechanical Energy Conversion

AE 508 Industrial Engineering & Industrial Management

AE511 Air-conditioning & Refrigeration Part 1
AE613 Mechanical Instrumentation Process
AE614 Machine Design
AE512 Building Service Water Supply System
AE511 Air-conditioning & Refrigeration Part 2
AE613 Mechanical Instrumentation Process

Year (4) Part 1 BE (Mechanical + General Related Subjects)

AE 601 Computer Programming

AE 602 Computer Network

AE 603 Software Engineering

AE 605 Engineering Management

AE 606 Building Service Electrical & Mechanical Engineering

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Year (4) Part 2

Bachelor of Engineering (Mechanical) Specialization (13 pt)

BAE311 Plant Engineering (2 pt)

BAE312 Design Engineering (2 pt)

BAE313 Environmental Control (2 pt)

BAE314 Mechanical Power Generation (2 pt)

BAE315 Materials Engineering (2 pt) Part 1 Part 2

BAE 608 Engineering Competency Demonstration Report Writing (3 pt)

Elective (2 pt)

Subjects
BAE513 Production Technology
BAE611 Maintenance Engineering
BAE612 Engineering Metallurgy

Bachelor of Engineering (Civil-Building Services)

STAGE (3) BASIC ELECTRICAL & ELECTRONICS ENGINEERING (18 Pt)

REFER DIPLOMA/ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING DETAILED CONTENTS

EE101 DC Circuit Problems

EE102 Basic Electrical Fitting & Wiring

EE103 Basic Electrical Drafting

EE104 Electrical Equipments Safety Protection

EE105 Electrical Installation Design

EE107 Electrical Equipments

EE106 Advanced Electrical Wiring

EE108 Electrical Fault Finding

EE109 Electrical Control Circuits

EE111 Electromagnetism & Basic Electrical Machines

EE112 Alternating Current Principle

EE113 Electrical Fundamental

EE115 Basic Analogue & Digital Electronics

EE116 Process Control System

EE117 Solar Electrical System

EE119 Electrical Risk Assessment

EE120 Electrical Contracting & Specifications

EE308 Sustainability

STAGE (4 A) ADVANCED MECHANICAL ENGINEERING STUDY (6Pt)

REFER DIPLOMA/ADVANCED DIPLOMA IN MECHANICAL ENGINEERING DETAILED CONTENTS

ME 102 Engineering Thermodynamics

ME 109 Engineering Drawing

ME 107 Heat Transfer

ME 201 Introduction to Fluid Mechanics

ME 204 Engineering Fluid Mechanics

ME 301 Fluid Dynamics

STAGE (4B)ADVANCED ELECTRICAL & ELECTRONICS ENGINEERING STUDY

(ADVANCED DIPLOMA) (4 pt)

REFER DIPLOMA/ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING DETAILED CONTENTS

EE201 Engineering Mathematics

EE204 Engineering Physics

EE302 Advanced Engineering Mathematics

EE307 Energy Efficient Building Design

STAGE (5)BACHELOR OF APPLIED ENGINEERING (BUILDING SERVICE) DEGREE (32 pt)

ubjects

AE 401 Advanced Engineering Mathematics

AE 402 Calculus

AE 403 Engineering Mechanics

AE 404 Engineering Materials & Thermodynamics

AE 508 Industrial Engineering & Industrial Management

AE 601 Computer Programming

AE 605 Engineering Management

AE 606 Building Service Electrical & Mechanical Engineering

AE 609 Design Project

Bachelor of Engineering (Mechanical-Mechatronics)

Advanced Diploma of Mechanical Engineering)

REFER DIPLOMA/ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING DETAILED CONTENTS

REFER DIPLOMA/ADVANCED DIPLOMA IN MECHANICAL ENGINEERING DETAILED CONTENTS

(1) ME104 Principle of Machine

(2)EE624 Process Control

EE115 Basic Analogue & Digital Electronics

EE116 Process Control System

(3)ME 334 Airconditioning and Refrigeration

(4) ME202 Aerodynamics

(5) ME 302 Automation-and-Robotics

(6) ME 303 Computer Aided Design and Manufacturing

(7) ME 234 Wind Turbines

(8) ME 201 Introduction to Fluid Mechanics

(9) ME 204 Engineering Fluid Mechanics +
ME 301 Fluid Dynamics

(10) ME 206 Introduction to Turbo Machinery

(11)ME 205 Manufacturing Processes & Materials

(12) ME 207 Chemical Thermodynamics

(13)ME 208 Hydrocarbons

(14) ME 634 Pneumatics

(15) ME 203 Control

(16) ME 534 Numerical Control

(17) ME 434 Mechtronics-Robotics

(18)EE 617 Building Electrical and Mechanical System

(19)EE105 Electrical Installation Design
EE107 Electrical Equipments

EE105 Electrical Installation Design

EE107 Electrical Equipments

(20)EE106 Advanced Electrical Wiring

(21) EE116 Process Control

(22) EE117 Solar Electrical System

(23) EE119 Electrical Risk Assessment
EE120 Electrical Contracting

(24) ME 109 Engineering Drawing

EE301 Advanced Electrical Drafting

(25) EE121 Electronics Power Control Devices

(26) EE206 AC

(27) EE207 DC

(28)EE202 Electrical Circuits

(29)EE203 Three Phase Power Circuits

(30) ME 305 Corrosion Prevention

(31) ME 306 Theory-of-waves-in- materials

Bachelor of Applied Engineering (Mechanical-Mechatronics)

ubjects

AE 401 Advanced Engineering Mathematics

AE 402 Calculus

AE 403 Engineering Mechanics

AE 404 Engineering Materials & Thermodynamics

AE 405 Advanced Circuit Analysis

AE 406 Electro-mechanics

AE 408 Analogue & Digital Electronics

AE 502 Linear System

AE 503 Control System

AE 507 Electro-mechanical Energy Conversion

AE 508 Industrial Engineering & Industrial Management

AE 601 Computer Programming

AE 602 Computer Network

AE 603 Software Engineering

AE 604 Telecommunication Engineering

AE 605 Engineering Management

AE 606 Building Service Electrical & Mechanical Engineering

BAE 401 Advanced Engineering Mathematics (9 pt)

An Introduction to theory of complex variables

Complex numbers

Functions

Differentiability

Integration in the complex plane

Integral theorems

Power series

Introduction of rational functions of trigonometric functions.

Continuous distribution

Exponential distribution

Normal distribution

Gamma distribution

Convergence in distribution

F distribution

Discrete distribution

Binomial distribution

Poisson distribution

Elementary linear algebra

Algebra in F^n Example problems

Geometric meaning of vectors

Geometric meaning of vector addition

Distance between points in Rn Length of vector

Geometric meaning of scalar multiplication

Dot product

Cross product

System of equation geometry

System of equation – Algebric operation

Matrice arithmetic

Determinants –Basic technique & properties

Integration and differential equations

List of integrals

Introduction to background

Theorem of integration

Improper integrals

Improper integral problems

Integration of rational functions

Differential equations

First order ordinary differential equations

Homogenous equations

The general linear equations

Random variables

Simple introduction examples

Problems

Frequency and distribution functions in 1 dimension

Mathematical modelling preliminary

Introduction

Discrete time model

Maths 301 Introduction to Complex Variables

The residue Theorem

Fourier Transform

Integral theorem of complex analysis with applications to the evaluation of real integral

Introduction

Integral theorems – The green Theorem

Cauchy's integral theorem

Cauchy's residue theorem

Maths 302 Elementary Linear Algebra

A formula for the inverse

Cramer's rule

Example 6.2.3 , 6.2.4 , 6.2.6, 6.2.7

Rank of a matrix

Example 8.2.9 , 8.2.10, 8.3.3 , 8.3.5, 8.3.6, 8.3.7, 8.3.8

Linear independence and bases

Linear transformation

Constructing the matrix of a linear transformation

Linear programming

Maths 401 Continuous Distribution

X^2 Distribution

F Distribution

F Distribution & " t " Distribution

Estimation of parameters

Maths 402 Discrete Distribution

Geometric distribution

Pascal distribution

Negative binomial distribution

Hyper geometric distribution

Maths 303 Essential Engineering Mathematics

Vectors and matrices

Functions and limits , Example problems

Calculation of one variable (Part 1) Differentiation,

Calculation of one variable (Part 1) Integration,

Calculus of many variables,

Ordinary differential equations,

Complex function theory

Maths 501 Introduction to probability

Theoretical background

Playing card

Binomial distribution

Lotto Example

Conditional probabilities –Baye's formula

Maths 501 Linear algebra and matrices

Linear transformation matrices

Definition 2.1.1 to 2.1.3

i j Entry of product Definition 2.1.8

Rank of matrices

Row operations

Maths 502 Introductory Finite Difference Method for PDE

Partial differential equations. Example problems

Taylor theorem

Iterative solution methods

Jacobi Iteration

Gauss Seidel Iteration

Successive Relaxation method

Maths 601 Random Variables

Theoretical results

Frequencies and distribution (1 dimension)

Function of random variables

BAE 402 Calculus (3 pt)

-

Calculus 1 a .pdf
Differentiation, Example problems
Integration, Example problems
Simple differential equations, Example problems

Calculus 2 a .pdf

Integration of trigonometric polynomials

Complex decomposition of a fraction between two polynomials

Chain rule

Calculation of the directional derivatives

An overview of integration in the plane and in the space

Line integrals

Surface integral

Green’s theorem in the plane

Calculus 2b 1.pdf

The range of functions in several variables

Line integral

Space integral

Line integral

Calculus 3b. pdf

Power series method in solution of problems, Example problems

Calculus 3C 1. pdf

Sequence in general

Calculus 4C 1. pdf

Sum function of Fourier series

Maths 303 Engineering Mathematics

Introduction and background

Integration of rational functions

Integration of trigonometric functions

Differential equations

Maths 403 Second Order Differential Equations

Power series solutions

Bessel equations and Bessel functions

Legendre polynomials

Differential equations

BAE 403 Engineering Mechanics (1 pt)

Stress Example

Stress lectures

Strain All examples

Strain lessons

Mechanical properties of materials

Mechanical properties of materials

Axial members

Axial members

Torsion of shaft

Torsion of shaft

Symmetric bending of beams

Symmetric bending of beams

Deflection of symmetric beams

Deflection of symmetric beams

Stress transformation

Stress transformation

Strain transformation

Strain transformation

Design and failure

Design and failure

Stability of columns

Stability of columns

Newton motion

One dimensional motion

Simple harmonic motion

Damped oscillation

$X(t) = Ar\, e^{-rt/l} \cos(wt - \delta_r)$

Rotating reference frame equations

Modern Mechanics Part 1

Modern Mechanics Part 2

Modern Mechanics Part 3

Modern Mechanics Part 4

Modern Mechanics Part A

Modern Mechanics Part B

Modern Mechanics Part C

-

ME 301 Applied Mathematics

Kinematics

Projectiles

Forces

Resistance forces

Resolving forces

Rigid bodies

Centre of gravity

Momentum

Energy

Circular motion

Gravitation and planetary motion

The language of vectors

BAE 404 Engineering Materials & Thermodynamics (3 pt)

Heat Transfer. pdf

(1) Heat transfer mode Example problems

(2) Conduction Example problems

(3) Convection Example problems

(4) Radiation Example problems

(5) Heat Exchanger Example problems

Theory of waves in materials.pdf

Materials-Preliminary

Materials- Basic mechanical properties

Basic wave phenomena

Harmonic waves

Elastic volume and shear waves

Rayleigh Elastic waves

Engineering Thermodynamics

General definition

Thermodynamics-Working fluids

Laws of Thermodynamics

Worked Example 3.1 to 3.25

ME434 Wind Turbines

Wind Energy

Theory of wind energy

Wind turbine types and components

Wind energy measurement, Wheel encoder Worked

ME634 Pnuematics

Principle of pneumatics

Linear actuators

Flow control

Pnuematics sensors

Pnuematics symbols

BAE 405 Advanced Circuit Analysis (3 pt)

DC Circuit Analysis

Circuit Theory

Modulators

Analog, digital signals , electric current, power summary

Circuit analysis, electric potential, electric power, sign convection, electric source, Kirchoffs' law

Circult elements, characteristics KCL, KVL

Resistor (Series, parallel, wheatstone bridge, Nodal analysis

Nodal analysis, mesh analysis

Superposition theorem, Thevenin's theorem, Norton theorem, Maximum power transfer theorem,

Operational amplifier

Inverting amplifier circuit, Summing amplifier, Differential amplifier

Capacitor, Op-amp integrator, stored energy

Mutual inductance, time constant, transient

Transient response of 1 st order circuit, RL transient analysis, sequential switching

RC/RL Circuit , Propogation, Delay, DRAM

Semi conductor

PN Junction diode

Light emitting diode

MOSFET

Digital signal

CMOS Digital circuit

Combinational logic circuits

Flip flops

Propagation delay in timing diagram

Integrated circuit fabrication

Device isolation methods

Interconnected resistance and capacitance

Transistor scaling

Integrated circuit design for application in communications

Small signal amplifiers

Network noise intermodulation distortion

CAD for noise analysis

Snsors & Detectors

Low noise design methodology

Oscillators

Modulators and demodulators

Concepts in Electrical Circuit

Circuit theorem

Sinusoids & phasors

Frequency response

EE303 Engineering Circuit Analysis

Basic circuits

Basic Nodal and Mesh analysis

Linear and Superposition/ Source Transformation

RL/ RC Circuits

RLC Circuits

Sinusoidal steady state analysis

AC Power Circuit Analysis

Polyphase Circuits

Magnetically coupled circuits

Complex Frequency / Laplace Transform

Laplace Transform

Circuit analysis in " S " domain

Pole/ Zero constellation

Frequency Response

Two ports network

Fourier Circuit Analysis

Use of symmetry theory

EE404 Electrical Measurement (1 pt)

Measurement of inductance and capacitance

Measurement of resistance

Magnetic measurement

High voltage measurement and tesating

Location of cable fault

Measurement of power

Measurement of energy

BAE 406 Electro-mechanics (2 pt)

Electro-mechanic -1.0.1 Scope of application

1.1 Electro-magnetic theory

1.1.1a Magnetic field system, Table 1.1

1.1.1.b Electric field system Table 1.2

Lumped electro-mechanical elements

Lumped parameter-electro-mechanic

Rotating machines

Lumped parameter-electro mechanical dynamics

EE 502 Electrical Machines

DC Generator, Example problems

DC Motors, Example problems

Efficiency & heating of electrical machines, Example problems

Three phase transformer, Example problems

Three phase induction motors, Example problems

Synchronous generators, Example problems

Synchronous motors, Example problems

Basic of industrial motor control, Example problems

ME 301 Machine Principle

Rotating machines

Machinery mounting

Balancing

Bearing

Power transmission

BAE 407 Advanced Electro-magnetics Field & Materials (1 pt)

Electric field

Electrostatic potential

Dipole and quadrature pole movements

Batteries, resistors, ohm laws

Capacitors

Magnetic effect of an electric current

Force on current in a magnetic field

Electro-dynamics of moving bodies

Magnetic potential

Electro-magnetic Induction

Dimensions

Properties of magnetic materials

Alternating current

Laplace transform

Maxwell Equation

CGS Electricity & Magnetism

Magnetic dipole movement

Outlines

Electric field

Electrostatic Energy

Laplace's equation (1)

Laplace's equation (2)

Remarks on units

Green's functions

Multipole expansion

Electro-static in matter

Boundary condition

Magneto statics (1)

Magneto statics (2)

Macroscopic magneto statics

Maxwell's equation

DISC movement

Electro-magnetic plane waves

Reflection & refraction

Casual relation between D & E

Wave guides and load cavities

Electromagnetic radiation and scattering (1)

Electromagnetic radiation and scattering (2)

Scattering by small di-electric sphere

Electro-magnetism

Electro magnetic fields and moving charges

Multipole expansion

Magnetic constants and materials

Ampere law

Brief history of electro magnetism

Gauss's law

Numerical solutions to Laplace's equation

Small current loop

Curvilinear co-ordinate system

Problems

Dielectric tensors and constants

Analytic solution to Laplace equation

Magnetostatic boundary condition

Electrostatic boundary condition

Electromagnetic field

The gradient vector

Maxwell's equation

Electro-magnetic wave propagation

BAE 407 Advanced Electro-magnetic Field & Materials

Electro dynamics

Introduction to electro statics

Boundary value problems in electro statics (1)

Boundary value problems in electro statics (2)

Multi-poles Macroscopic media –Dielectrics

Static and stationary magnetic fields

Maxwell's equations

Plane wave and wave propogation

Wave guides and cavities

Radiation

The special theory of relativity

Particles and field dynamics

Charged particle collisions-Energy loss, Scattering

Radiation by moving charges

BAE 407 Advanced Electro-magnetic Field & Materials

EMFT book.pdf

Summary of electro statics

Potential

Electro-magnetics waves

Classical optics

Conservation Law

Conservation Law

Conservation Law

Generic wave

Electromagnetic waves in vacuum

Electromagnetic waves in matter

Electromagnetic waves in conductor

Electromagnetic waves propagation

Electromagnetic waves field

Wave guides

Electromagnetic waves radiation

Electro-dynamics

Frequency

EE407 Electro-magnetism

Di-electric materials and capacitance

Transmission Lines

Maxwell's equations and electro-magnetic waves

Electrostatics

Di-electric

Transmission Line

Maxwell Equation

BAE 408 Analogue & Digital Electronics (5 pt)

Semi conductor devices

Digital circuits

Power Electronics Converters

Introduction to Electronic Engineering

Power Electronics & Applied Electronics

Digital System

Digital Signal Processing

Digital Image Processing

Electronics Circuits

Power Electronics Control

Digital System

- Number system basics
- Introduction to logic gates
- Combinational logic
- Karnaugh map
- Arithmetic circuit
- Coders/ Multiplexers
- Counters

Digital Signal Processing

- Signal system representation
- Fourier/ Z Transform
- Discrete Fourier Transform
- Principle of filter design
- FIR filter design

Digital Image Processing

- Introduction
- Intensity transformation & spatial filtering
- Filtering in frequency domain
- Discrete Fourier Transform
- Butterworth Low Pass Filter
- Butterworth High Pass Filter
- Image restoration / Noise analysis

Digital Image Processing

- Introduction
- Intensity transformation & spatial filtering
- Filtering in frequency domain
- Discrete Fourier Transform
- Butterworth Low Pass Filter
- Butterworth High Pass Filter
- Image restoration / Noise analysis

BAE 501 Advanced Power Systems & Power Transmission Networks (3 pt)

Principle of Power System

- Source of energy
- Steam power station
- Hydro power station
- Diesel power station
- Nuclear power station

Gas turbine power station

Variable load on power station

Interconnected grid system

Economic of power generation

Importance of high load factor

Tariffs

PF improvement

Supply system

Mechanical design of OH line

Corona

Sag

Electrical design of OH line

Performance of transmission line

Line generalised constants

UG cable

Capacitance in 3 core cable

Distribution system

DC Distribution

DC System

AC Distribution

Voltage control

Introduction to switch gear

Circuit breaker

Fuse

Relays

Protection transformers

Substation

Advanced Power System –Power Transmission Network

Consequence of power quality

Power quality & applications

Power quality analysis

Power quality monitoring

Management, control and automation of power quality improvement

Electrical generation and distribution system and power quality disturbances

Integration of hybrid distribution units in power grid

Optimal location and control of multi hybrid model based wind shunt facts to enhance power quality

Power quality and voltage sags indices in electrical power systems.

Power Transmission Line

AASR Conductors

ARC Fault

Circuit breaker rating

Current transformer

Electrical bushing

Electrical fuse

Induction motor model

IP rating

Load factor

Load redundancy

Over current protection

Partial discharge

Per unit system

Phase conversion

Resonance

RL Switching

Sequence network

Short circuit calculation

Symmetrical component

Transformer impedance

Power Transmission Line 2

AC Power Transmission

Insulation Resistance test

Dry type transformer

Electrical software

Insulation resistance test

Electrical Power Generation System

Designing for high temperature and pressure

Turbine components

Burning of fuel

Facts about fuel

Burning gas and oil

Selecting fuel

Water treatment

Heat exchanger

Computer control

System economics

Power System

Transmission & distribution system

Control of power and frequency

Control of voltage and reactive power

Load flow

Faults

System stability

Over voltage and insulation requirement

Substations and protection

Electrical Power

Power line

Neutral earthing

Switch gear

Instrument

Protection

Power system

Generator response to system faults

Calculation of fault current

Symmetrical components

Commissioning electrical plant

Power System Technology

Power system fundamental

Modern power system

Power control devices

Operational control system

Power conversion

Specialised testing & measurement devices

Generation , Transmission and Distribution of Electric Power

Voltage transient and line surge

Transmission of electrical energy

Corona

UG Cable

Voltage drop in distribution

Regulation

Line and machine chart

Voltage regulation stability

Fault calculation in line

Electrical Power Distribution in Industry & Transmission (Electrical Distribution Engineering)

Planning & design

Electrical design

Mechanical design (Over head)

Mechanical design (Under ground)

Metering

Conductor inductance & capacitance

Power Transmission and Practical Power Distribution

Electric power system

Percentage and per unit quantities

Circuit constants

Assemblies of power system components

Power circuit stability

BAE 502 Linear System (1 pt)

Controllability of linear control system

Finite dimensional linear control system

Linear partial differential equations

Introduction to intelligent control system with high degrees of autonomy

Overview of field

Control system

System identification

Digital and analog

System metrics

System modelling

Classical control

Transform

Transfer functions

Sampled data system

System delays

Poles and zeros

Modern control

State space equation

Linear system solution

BAE 503 Control System (4 pt)

Gain

Block diagram

Feedback control loop

Bode plot

Nichol chart

Stability

Stability

Routh Hurwitz Criterion, Root Locus

Nyquist Criterion

State Space Stability

Controllers & Compensators

Controllability & Observability

System Specifications

Controllers, Compensators

Z - Transform

Non Linear Control Applications

Application of input/ output linearization

Non linear control for 2 stages PF correction converter

Non linear observer based control allocation

Control Engineering MATLAB

Transfer functions and their responses

Frequency response/ Plotting

Closed loop control

Controller design

Feedback and Control System

Introduction to linearized dynamic model

Transfer function model of physical systems

Transient performance / S- Plane

Feedback system modelling / Performance

Dynamic compensation of feedback system

PID Control

Application of PID controllers in motor drive system

Applications of Non Linear Control

Introduction

Phase plane method

Process Control

Analog Signal Conditioning

Digital Signal Conditioning

Final Control

Discrete State Control

Controller Principle

Analog Controller

Digital Controller

Control Loop Characteristics

Numerical Control

Introduction to numerical control machinery

Numerical control system

Programming co-ordinates

Two axis programming

Three axis programming

Maths for numerical control programming

BAE 504 Power System Analysis (1 pt)

Overview

Real & Reactive power injected bus

Classification of buses

Classification of buses

Preparation of data for load flow

Load flow by Gauss Seidel method

Updating load bus voltage

Updating PV bus voltage

Convergence of the algorithm

Solution of a set of non linear equation by Newton Raphson method

Load flow by Newton Raphson method

Load flow algorithm

Formation of Jacobian matrix

Formation of Jacobian matrix

Solution of Newton Raphson load flow

Load flow results

Load flow results

Load flow programs in MATHLAB

Forming Y bus matrix

Gauss Seidel Load Flow

Solving non linear equation using Newton Raphson method

Newton Raphson load flow

Power System Analysis

Transformer

Transmission line model

Gauss Seidel Algorithm

Newton Raphson Iteration

DC Power Flow Algorithm

Modelling

Transient Stability

Power System Analysis

Power Apps Transient Stability validiation document for single pole open/ close simulation

(Power flow analysis + FAULT ANALYSIS + Power system dynamics and Stability)

Static Analysis

Introduction

Network model

Active & reactive power flow

Nodal formation of power flow problem

Basic power flow problem

Solution of power flow problems

Fault analysis

Power system dynamics and stability

Synchronous machine model

The swing equation

Power swing in simple system

Oscillation in multi machine system

Voltage stability

Control of reactive power voltage

BAE 505 Power System Optimization (1 pt)

Introduction

Power Flow Analysis

Classic Economic Dispatch

Linear programming method

Mathematical model of economic dispatch

Linear programming model

Optimization of power system performance using facts devices

Optimization of dynamical system

Matrix Eigen Value Method

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BAE 506 Power System Stability & Protection (2 pt)

Transient in RL circuit

Symmetrical fault

Transient in RL circuit

DC Source

AC Source

Faults in AC Circuit

Short circuit in unloaded synchronous generator

Symmetrical faults in power system

Calculation of fault current using Z bus matrix

Circuit breaker selection

Symmetrical components & representation of faulted network

Overview

Overview

Real & reactive power

Real & reactive power

Orthogonal Transformation

Sequence circuit for star load

Sequence circuit for delta load

Sequence circuit for synchronous generator

Sequence circuit for symmetrical transmission line

Sequence circuit for transformer

Star/ Star Connected Transformer

Delta/Delta Connected Transformer

Star/ Delta Connected Transformer

Sequence Network

Un- symmetrical Faults

Introduction

Single line to ground fault

Line to line fault

Two lines to ground fault

Fault current computation using sequence network

Transient Stability

Introduction

Power angle relationship

Swing equation

Equal area criterion

Equal area criterion

Multi machine stability

Oscillation in “ S “ Two areas System

Compensation of power transmission

Introduction

Ideal shunt compensator

Improving voltage profile

Improving power angle characteristics

Improving stability margin

Improving damping power oscillations

Ideal series compensator

Impact of series compensator for voltage profile

Improving power angle characteristics

Improving power angle characteristics

Alternate mode to voltage injection

Alternate mode to voltage injection

Comparison of two modes of operation

Power flow control and power swing damping

Power System Protection

Different types of relays and settings

- Technical feasibility of various options
- Cost of options
- Type of transmission AC/DC
- Number of circuits
- Conductor type
- Transmission loss
- Reactive power support requirements
- Reliability
- Quality of power supply
- Stability aspects of the interconnected system
- Operational planning
- Short circuit levels and breaker requirements
- over voltages and control
- Insulation coordination at substations
- Substation arrangements at the end of line, including switching arrangements.
- Insulation requirements.
- Protection, monitoring, control and automation requirements
- Study of harmonics where needed [as in case of HVDC or when a terminating station is close to sources of harmonics]
- Basic and Detailed engineering related to transmission towers, routes, substations

Philosophy of protective relaying

Fundamental of relaying

Current/ voltage/directional/ differential relay

Distance relaying

Pilot wire relay

Carrier current relay

Voltage transformer

Relay response

Generator protection

Transformer protection

Busbar protection

Line protection

Line protection with distance relay

Line protection with pilot relay

Power system stability

Power system stability Guidelines

Power system stability guidelines for determination and report

Direct stability analysis of electric power system using energy functions

Power system stability –New opportunity for control

Typical power quality and harmonic measurement plots

Robust power system stabilizer design using particle swarm optimisation techniques

Harmonic analysis

Power Quality

Power quality

Electrical protection for power system

Substation automation

Introduction to power quality

Harmonic model of transformer

Substation automation

Modelling analysis of synchronous machines

Life time reduction

Power system modelling under non sinusoidal condition

Impact of power quality on reliability

Role of filters in power system

BAE 507 Electro-mechanical Energy Conversion (2 pt)

Basic semiconductor physics

PN Junction semiconductor

Power switching devices

Electrical rating of switching devices

Cooling

Load/ switch communication

Driving semiconductor & thyristor

Protecting diode / Thyristor/ Transistors

Switching circuit energy recovery

Series , parallel devices operation protection

Naturally commutating converter

AC Voltage Regulator

DC choppers

Power inverters

Switched mode & resonant DC-DC power supplies

Capacitors

Soft magnetic materials

Resistors

Motor Control Electronics

AC Induction motor control

Motor control MCU

Networking for motor control system

DC motor control design

Motor control electronic devices

Power semi conductors

Mechatronics/ Robotics

Robotics Application

Robotic Gears

Interfacing

Robotic Sensors

Communication

BAE 508 Industrial Engineering & Industrial Management (1 pt)

Effective management decision making

Chapter (1) Introduction

Business Information System

Chapter (1) Defining Information System

Chapter (7) Acquiring Information System

Chapter (8) Developing Information System

Managing Human Resources in 21 Century

Chapter (3) Human resources Management

Management Basics

Chapter (2) The Manager's Job

Chapter (4) Planning in Organization

Operation Management

Chapter (1) Introduction

Chapter (2) Operation Strategy

Chapter (10) Work System Design

Chapter (11) Project Management

Chapter (12) Inventory Management

Quality Management

Chapter (7) Leadership in Quality Management

Chapter (8) Strategic Quality Management

Chapter (15) Implementing Quality Management

Strategic Financial Management

Chapter (1) Finance An Overview

Chapter (2) Capital Budgeting

Chapter (5) Equity Valuation & Cost of Capital

Strategic Management

Chapter (2) The Basic of Strategy

Chapter (3) The Levels of formulation of strategy

Chapter (6) External analysis

Chapter (7) Internal analysis

Chapter (10) Strategy implementation

Understanding organization part 1

Chapter (3) Organization structure

Chapter (4) Organization culture

Chapter (5) Managing behaviour

Chapter (6) Effective leadership

Part (2) Competency Units

Mgt 501 Basic Management & Communication Skills (1 pt)

Textbook – Mgt 501 Management Basics

Chapter (1) Management basics

Chapter (3) Planning

Chapter (5) Organizing

Chapter (6) Organizing the organization

Chapter (7) Leading

Textbook—Mgt501 Management Briefs

Chapter (2) Leadership

Chapter (5) Motivation

BAE 601 Computer Programming (3 pt)

Part (1) Overview Knowledge of the subject

Select any of the following textbooks

- C Programming
- C++ Programming
- C# Programming
- Object Oriented Programming
- C Programming in Linux

IT 401 Object Oriented Programming (1 pt)

IT 402 Structured Programming (1 pt)

IT 403 Visual Basic Programming (1 pt)

BAE 602 Computer Network (1 pt)

Computer Network

Peer to peer networking

Client server networking

Network hardware

Network cable

Hub

Wired network

Wireless network card

Firewall

Wiring the network

Wiring the network

Running the network program

Viewing network connection

Network set up on additional computers

Viewing network connection

Introduction

Network model

Data and signals

Data and signals

Data rate limit

Performance

Digital transmission

Digital transmission

Analog transmission

Analog transmission

Bandwidth utilization/ Multiplexing/ Spreading

Bandwidth utilization/ Multiplexing/ Spreading

Transmission media

Error detection & correction

Error detection and correction

Defining needs

Area covered

Organization information requirement

System VS Procedure

Types of systems

What are the systems?

Infrasturcture

Support system

Data mart

Organizational structure

Planning for system development

System design

Security of information system

Risk management

BAE 603 Software Engineering (2 pt)

Introduction

Software process

Feasibility study

Project management

Documentation, Requirement analysis

Requirement specification

Business/ Legal aspect

Source code management

Formal specification

Object oriented design 1

Object oriented design 2

Object oriented design 3

System Architecture 1

System Architecture 2

System Architecture 3

Design for utility

Performance of computer system

Coding standard/ Tools for designing 1

Dependable system 1 Reliability

Dependable system 2 Validation

Law aspect

Risks in software engineering

Software engineering as engineering

Nano Technology

What is Nano technology?

Motivation for Nano technology

Scaling laws

Nano technology

BAE 604 Telecommunication Engineering (2 pt)

Communication fundamental

Information & bandwidth

Amplitude modulation transmission

Amplitude modulation reception

Single side banded communication

Frequency modulation –Transmission

Frequency modulation –Reception

Communication Techniques

Communication Receivers

Pulse Modulation

Code transmission

ISDN

Transmission lines

Wave propagation

Antenna

Fibre optics

Data Communication

Overview of data communication

Data terminals

Massage and transmission channels

Asynchronous modems and interfaces

Synchronous modem and digital transmission

Protocol and error control

Electronics Telecommunication

RF Transmission

Transmission Lines & Antennas, Video signals

BAE 605 Engineering Management (5 pt)

Part (1) Overview Knowledge of the subject

Completion of BAE 508 Overview also completes BAE 605 Overview

Part (2) Competency Units

Mgt 502 Operation Management (1 pt)

Mgt 503 Production & Operation Management (1 pt)

Mgt 504 Project Management (1 pt)

Mgt 505 Quality Management and Manufacturing Engineering (1 pt)

Mgt 506 Strategic Financial Management (1 pt)

Mgt 502 Operation Management (1 pt)

Chapter (3) Product design and process selection

Chapter (4) Total quality management

Chapter (7) JIT & Lean System

Chapter (8) Capacity planning

Mgt 503 Production & Operation Management (1 pt)

Chapter (6) Planning production

Chapter (7) Managing inventories-Material requirement planning

Chapter (11) Manufacturing

Chapter (13) Dealing with technology and design

Chapter (15) Operation strategy

Mgt 504 Project Management (1 pt)

Chapter (1) Project management

Chapter (2) Project organization

Chapter (4) Project plan

Chapter (5) Progress & performance measurement

Chapter (6) Risk management

Chapter (7) Documentation/ Audit/ Closure

Mgt 505 Quality Management and Manufacturing Engineering (1 pt)

Chapter (2) Background

Chapter (3) Why quality management

Chapter (5) Standards and models

Chapter (5) Progress & performance measurement

Chapter (8) Strategic quality management

Chapter (7) Documentation/ Audit/ Closure

Mgt 506 Strategic Financial Management (1 pt)

Chapter (3) Capital budgeting

Chapter (4) Treatment of uncertainty

Chapter (6) Debt valuation and cost of capital

BAE 606 Building Service Electrical & Mechanical Engineering (2 pt)

Building Construction 1

- Making building
- Foundations
- Wood
- Interior finish for wood light frame construction
- Wall types
- Concrete construction

Air-conditioning & Refrigeration

- Controlling the temperature of mass
- Electric heat
- Humidification
- Air-conditioning –Cooling / Comfort
- Air-distribution & Balance
- Reference Tables

Sanitation & Water Supply

- Design of onsite sanitation system
- Hydraulic design of sewers

Building Electrical & Mechanical System Part 1

- Climate comfort and design strategies
- Thermal control
- Designing for heating cooling
- Large building HVAC system
- Water and basic design
- Water supply
- Water and waste
- Fire protection
- Fire protection
- Illumination
- Lighting design
- Signal system

Airconditioning and Refrigeration

- Theory of heat
- Solar heat
- Humidification
- Air-conditioning-Cooling
- Air-distribution & Balance
- Air-conditioning Calculation worksheets

BAE 607 Radio Wave Propagation & Microwave Techniques (2 pt)

Radio Wave Propagation

- Introduction to radio wave propagation

Propagation features/ Overviews

Electromagnetic waves, Prpagation through atmosphere

Antenna

Radio wave propagation fundamentals

Antennas and propagation

Mobile radio propagation

Propagation

Wave propagation

Radio navigation

Wireless communication

Microwave Technique

Microwave antenna and radio wave propagation

Distributed element circuit analysis techniques

Matching networks

Couplers, combiners, dividers

Mixers

Gain and stability

Noise

Electromagnetism and RF Propagation

Antenna Fundamental

Communication system

RF Safety

Rain attenuation of microwave and milli-meter wave signals

Design of microwave filters (Vol 1)

Mechanically & magnetically tunable microwave filters

Design of microwave filters (Vol 1)

General applications of filter structure in microwave engineering

Properties of some common microwave filter elements

BAE 608 Professional Engineer Competency Demonstration Report

- The students will have to write Engineering Competency Demonstration Report based on their academic study and work experiences gained after completion of academic study.
- Competency Demonstration Report is voluntarily to be submitted. It prepares the students to have the necessary skills to gain the membership of Engineers Australia later.
- The outlines of Competency Demonstration Report will be provided to the students after completion of the last course work subject.

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BAE421 Building Construction Engineering

- Basic skills
- Isomatric drawing
- Retaining walls & Post footings
- Stair
- Doors & Windows
- Trusses
- Buildings
- Collar truss
- Howe truss

- Timber
- Steel
- Brick masonry
- Timber
- Brick-nogging
- Steel
- Reinforced concrete
- Floor plans
- Foundation plan
- Cross section
- Front elevation
- Back elevation
- Left side elevation
- Right elevation
- Culverts
- Bridges
- Buildings
- Pipe culvert
- Box culvert
- Slab culvert
- Deck and girder bridge
- Half top plan of culvert
- Half bottom plan of culvert
- Cross section of culvert
- Longitudinal section of culvert
- Elevation of culvert
- Mix Design
- Permissible water cement ratio

BAE422 Estimating (2 pt)

- Preliminary estimates
- Detailed estimating
    - Culverts
    - Bridges
    - Buildings
    - Roads
- Analysis of rates
- Detailed Estimating
- Buildings
- Up to plinth level
- Above plinth level
- Culverts

- Bridges
- Roads
- Earthworks
- Analysis of Rates
- Total workdone
- Material and labour requirements
- Estimated cost
- Actual PAE or CCE or RFT
- Complete items
- Quantity
- Measurements
- Content calculation
- Rates
- Buildings
- Above plinth level
- Culverts
- Analysis of rates

BAE423 Fluid Mechanics (2 pt)

- *Methods of Application of water*
- *Water Logging, Drainage, land reclamation and irrigation management*
- *Theoretical Concepts of Boundary Layer, Surface Roughness, Velocity Distribution*
- *Gradually varied flow*
- **Scale Model in Hydraulic Engineering**
- Surface irrigation methods
- Subsurface irrigation methods
- Sprinkler irrigation
- Drip or trickle irrigation
- Flooding Methods
- *Wild or uncontrolled Flooding*
- *Controlled Flooding*
- *Flooding from field channels*
- *Border strip methods*
- *Check method*
- *Basin method*
- *Zig-zag method*
- Furrow Method

- Contour Farming

BAE424 Reinforced Concrete (2 pt)

- Design of Concrete Structures
- FUNDAMENTALS OF FLEXURAL BOND
- Source of bond strength
- Bond Stress Based on Simple Cracked Section Analysis
- Actual Distribution of Flexural Bond Stress
- Development Length
- Factors influencing Development Length
- ACI CODE PROVISION FOR DEVELOPMENT OF TENSION REINFORCEMENT
- ANCHORAGE OF TENSION BARS BY HOOKS
- Development Length and Modification Factors for Hooked Bars
- ANCHORAGE REQUIREMENTS FOR WEB REINFORCEMENT
- Special Requirements near the Point of Zero Moment
- Structural Integrity Provisions

BAE425+525 Timber Engineering (2 pt)

- Bending Stress and Deflection of Wood Joists
- Shearing Stress Caused by Stationary Concentrated Load
- Shearing Stress Caused by Moving Concentrated Load
- Strength of Deep Wooden Beams
- Design of a Wood-Plywood Beam
- Determining the Capacity of a Solid Column
- Design of a Solid Wooden Column
- Investigation of a Spaced Column
- Compression on an Oblique Plane
- Design of a Notched Joint
- Allowable Lateral Load on Nails
- Capacity of Lag Screws
- Design of a Bolted splice
- Investigation of a Timber-Connector Joint

BAE521 Road & Bridge (2 pt)

- Hydraulic Design of Bridge
- The establishment of afflux levels
- Back water levels
- Long Contraction
- Yarnell’s empirical equation
- The limiting values of σ
- Skewed bridges

- Discharge computation
- Scour depth under the bridge
- Scour around bridge piers
- Scour protection works around bridge piers
- Road bridge

BAE522 Rock Mechanics (2 pt)

+

BAE523 Soil Mechanics (2 pt)

- Soil
- Soil Mechanics
- Geotechnical Engineering
- Subsoil Exploration
- Testing (In-situ Tests & Laboratory Tests)
- SPT, CPT, Vane Shear Test
- Moisture content
- Index Properties Tests (LL, PL, SL)
- Grain Size Distribution Test (Sieve Analysis & Hydrometer)
- Specific Gravity
- Shear Strength Tests (Tri-axial Compression:, Direct Shear, Unconfined Compression:)
- Compaction test, CBR Test
- Consolidation Test, Permeability Test

BAE 523A Environmental Engineering

- Distribution of water
- Requirement for good distribution system
- METHOD OF DISTRIBUTION
- Gravity System
- Combined gravity and pumping system
- Pumping system
- PRESSURE IN DISTRIBUTION MAINS
- SYSTEM OF WATER SUPPLY
- CONTINUOUS SYSTEM
- INTERMITTENT SYSTEM

- DRAWBACKS OF INTERMITTENT SYSTEM
- DISTRIBUTION RESERVOIR
- CAPACITY OF DISTRIBUTION RESERVOIR
- **Mac Donald's equation**
- DETERMINATION OF STORAGE CAPACITY
- Hydrograph method
- Mass curve method
- HEAD LOSS DUE TO FRICTION
- Darcy Weisbach formula
- Hazen William formula
- Manning's formula
- Combined Darcy Weisbach and Colebrook White formula
- LAYOUT OF DISTRIBUTION SYSTEM
- Dead end system or Tree system
- Grid iron system or Reticular system
- Circular system or ring system
- Radial system
- ANALYSIS OF PRESSURE IN DISTRIBUTION SYSTEM
- Equivalent pipe method
- Hardy cross method

BAE621 Structural Engineering (3 pt)

- DESIGN OF A SLAB BRIDGE
- FOUNDATION SETTLEMENTS
- Major problems with soil settlement analysis
- Settlement classification
- Immediate settlement & consolidation settlement
- Stresses in soil mass
- Approximate method (2:1 slope)
- Boussinesq's method
- Westergaard's method

BAE623 Surveying & Traffic Engineering (2 pt)

- Airport Runway Orientation
- Wind Rose Diagram
- Highway Pavement Performance
- Traffic
- Roadbed Soils (Sub grade Material)
- Materials of Construction

- Environment
- Drainage
- Reliability
- Transportation Engineering
- Transportation Planning
- Urban Transportation Planning
- Urban Transportation Planning Process
- Coding and Zoning
- Inventory Studies
- Travel Studies
- Forecasts for the Horizontal Year
- Trip General Analysis
- Trip Distribution Analysis
- Modal Split Analysis
- Network Assignment Analysis
- Evaluation

BAE624 Water Supply , Sanitation & Finishing (2 pt)

- Water Quality
- Dissolved Oxygen
- BOD (Biochemical Oxygen Demand)
- COD (Chemical Oxygen Demand)
- Water Sampling
- Requirements for good Sampling Procedure

BAE622 Architecture (3 pt)

Refer any architecture text book , study & prepare the report on practical application problem given by the tutor.

BAE511 Air-conditioning & Refrigeration

- Heat transfer by Conduction
- Convection
- Radition
- Thermal Conductivity, *k*
- Boundary and Initial Conditions
- Properties and state
- The System
- Internal energy (U)
- Enthalpy (H)
- Work (W)
- Heat (Q)

- Specific Head Capacity (c)
- Heat Engine
- The characteristic equation of a perfect gas
- Expansion processes
- Adiabatic process
- Isothermal Process

BAE613 Mechanical Instrumentation Process

- Problem-solving Methodology
- Matlab Environment
- Initializing Variables
- Data Format
- Printing Matrices
- Useful Commands and Functions
- Fundamental Engineering Computations
- Two-Dimensional Arrays and Matrices
- Variational Method
- Collational Method
- Subdomain Method
- Galerkin's Method
- Least Square Method

BAE614 Machine Design

- **Balancing**
- **Forces**
- **Cam Profile**
- **Resultant Effects of Engine**
- **Arrangement to balance the primary moment (C.W)**
- **V-Engine Mechanism**
- **FORCES IN ENGINE**
- **Inertia Forces and D'Alembert's Principle**

BAE512 Building Service Water Supply System

- Pressure loss in duct
- Pressure loss in duct by loss coefficient method
- Pressure loss in duct by Equivalent Length Method
- To find the duct size by Equal Friction Method
- To find the duct size by Balance Capacity Method
- Design the duct system

BAE311 Plant Engineering (2 pt)

- ***Three Degree of freedom***
  (a) Newton's method
  (b) Mechanical Impedance method
  (c) Influence coefficients
  (d) Matrix method
  (e) Holzer method
  (f) Matrix Iteration method
- **INTRODUCTION TO CONTROL SYSTEM**
- **DIFFERENTIAL EQUATIONS**

- **LINEARIZATION OF A NON-LINEAR FUNCTION**
- **MODELLING OF CONTROL SYSTEMS**
- **FREQUENCY RESPONSE METHODS**
- **Stability**

BAE312 Design Engineering (2 pt)

This unit is the same as

BAE621 Structural Engineering (3 pt)

BAE313 Environmental Control (2 pt)

This unit is the same as

BAE 523A Environmental Engineering

BAE314 Mechanical Power Generation (2 pt)

- **PLC Basics**
- **PLC Structure**
- **PLC in Comparison with Other Control Systems**
- **PLC's CPU**
- **PLC's Memory**
- **PLC in Comparison with Other Control Systems**
- **PLC's CPU**
- **PLC's Memory**
- **Programming Devices**
- **Programming Languages**
- **Instruction Set**
- **Typical Combinations of Languages**
- **Basic Symbols**
- **Elementary Logic Circuit**
- **PLC's Functions**
- **Industrial Programming**
- **PLC PRACTICE**
- **Selection of PLC**
- **Types of I/O & Capacity Needed**

- **Control System Basic**
- **Sequence Control**
- **Automatic Control**
- **Terms of Sequence Control**
- **Basic Knowledge on Contacts**

- **INDUSTRIAL MACHINE CONTROLS**

BAE315 Materials Engineering (2 pt)

- Load, Stress and Strain, Hook's law ,
- Principal of Superposition
- Tensile Test , Factor of Safety
- Strain Energy, Resilience
- Impact Loads
- Varying Cross-section and Loads
- Strain Energy , Resilience
- Compound Bars
- Temperature Stresses

Elective (2 pt)

Subjects
BAE513 Production Technology
BAE611 Maintenance Engineering

BAE612 Engineering Metallurgy

Refer any text book , study & prepare the report on practical application problem given by the tutor.

Bachelor of Applied Science (Information Technology)

Year 1+2 Refer Diploma & Advanced Diploma in Information Technology Detailed Contents

Bachelor of Applied Science (Computer Science & Computer Technology)

Year (3)

Unit	Topics	Reference	Points
ICT 301	General Electrical Knowledge	EE101	3
ICT 302	Digital Electronics	EE209/H012	3
ICT 303	Amplifier	EE208/H013	3
ICT 304	Material Science	E081	3
EE204	Physics	E046	3
EE201	Mathematics 1	E050	3
EE202	Mathematics 2	E026	3
EE306	Basic Control	I008	3
BAE605	Management		3
BAE408	Analog & Digital Electronics		3
		TOTAL	30

Year (4)

Unit	Topics	Reference	Points
ICT 401	Advanced Mathematics 1	BAE401	3
ICT 402	Advanced Mathematics 2	BAE402	3
BAE604	Telecommunication System		3
BAE508	Project Management		3
ICT 305	Professional Programming (1) C++		3
ICT 403	Professional Programming (2) Object Oriented		3
ICT 404	Professional Programming (3) Java		3
ICT 405	Professional Practice (1) Network		3
ICT 406	Professional Practice (2) Website		3
ICT 407	Artificial Intelligence		3
		TOTAL	30

Refer Diploma & Advanced Diploma in Electrical Engineering Detailed Contents

ICT 305 Professional Programming (1) C++

- Introduction
- Basic program architecture

- Variables
- Console programs
- Program control
- String
- Arrays
- Object oriented programming
- Classes
- Design of classes
- Methods
- Inheritance
- The class object
- Abstract classes
- Interfaces
- Static members
- More about arrays
- Types
- Enum
- Struct
- Generic types
- Exception handling
- Comments
- Extension methods
- Collection classes
- List Stack
- Linked list
- Dictionary
- Text file
- Binary files
- Object serialization
- Lottery
- Expression

ICT 403 Professional Programming (2) Object Oriented

object-oriented-programming-using-c-sharp

- Introduction to object oriented programming
- Unified Modelling Language (UML)
- Inheritence & Method Overriding
- Object rules & the importance of polymorphism
- Overloading
- Object oriented software analysis and design
- Generic collection & how to serialize them
- C# development tools
- Creating & using exceptions
- Agile programming
- Case studies

ICT 404 Professional Programming (3) Java

object-oriented-programming-using-java

- Introduction to object oriented programming
- Unified Modelling Language (UML)
- Inheritence & Method Overriding
- Object rules & the importance of polymorphism
- Overloading
- Object oriented software analysis and design
- Collection framework
- Java development tools
- Creating & using exception
- Agile programming
- Case study

ICT 405 Professional Practice (1) Network

This competency standard unit covers develop services for network clients for emails, internet access, shared resources and the like. It encompasses safe working practices, installing and configuring Domain Name Server (DNS), email servers, Dynamic Host Configuration Protocol (DHCP), remote access servers, Network Address Translation (NAT), directory services, Authentication Servers and documenting development activities.

Essential knowledge and associated skills

This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and developing network services.

The extent of the essential knowledge and skills required is given Volume 2 Part 2, Clauses

· **Network infrastructure**

Evidence shall show an understanding of network infrastructure to an extent indicated by the following aspects:

a. Domain Name Service (DNS) encompassing
   - DNS Server Service
   - Root name server
   - Configuring zones
   a. *Note:* Examples include configuring for dynamic updates and delegating zone for DNS
   - Caching – only server
   - DNS client
   - Testing DNS Server service
   - Manually creating DNS source
   - Managing and monitoring DNS

b. Dynamic Host Configuration Protocol (DHCP)
   - Installation of DHCP Server Service
   - DHCP scopes, superscopes and multicast scopes
   - DHCP – DNS integration
   - Active DirectoryTM
   - Managing and monitoring DHCP

c. Network Infrastructure encompassing
   - Configuring and troubleshooting remote access
   a. *Note:* Examples include remote access policy, configuration of remote access profile, Virtual Private Network (VPN), multi link connection, routing and remote access for DHCP
   - Managing and monitoring remote access
   - Remote access security
   - Note. Examples include authentication protocols, encryption protocols and access policy

d. Network Protocols encompassing
   - Installation, configuration and troubleshooting of network protocols
   a. *Note:* Examples include Transmission Control Protocol / Internet Protocol (TCP/IP), NWLink and network bindings
   - Configure TCP/IP packets
   - Configuring and troubleshooting network protocol security and IP Security (IPSec
   - Managing and monitoring network traffic

e. Internet Naming Services in a network encompassing
   - Installation, configuring and troubleshooting
   - Configuring Internet Naming Services replication
   - Configuring an application networking interface
   - Managing and monitoring Internet Naming Services

f. IP Routing encompassing
   - Installation, configuring and troubleshooting of IP routing protocols
   a. *Note:* This includes updating routing tables, and implementing demand-dial routing
   - Managing and monitoring IP routing
   a. *Note:* This includes border routing, internal routing and IP routing protocols

g. Network Address Translation (NAT) encompassing

- Installing Internet connection sharing
- Installing NAT
- Configure NAT properties and interfaces

h. Certificate Services encompassing
- Installing and configuring Certificate Authority
- Issuing and revoking certificates
- Removing the Encrypted File System recovery keys

- **Directory services**

Evidence shall show an understanding of directory services to an extent indicated by the following aspects:

a. Installing and configuring directory services encompassing
- Installing forests, trees and domains including automatic domain controller
- Creating sites, subnets, site links and connection objects
- Configuring server objects including site membership and global catalogue designation
- Transferring of operations master roles
- Verification and troubleshooting of directory services installation
- Implementation of and organisational unit structure

b. Domain Name Service (DNS) for directory services encompassing
- Installation and configuration of DNS for directory services

a. *Note:* Examples are integration with existing DNS infrastructure, configuration of zones for dynamic and secure dynamic updates and creation and configuration of DNS records

- Management, monitoring and troubleshooting of DNS

c. Change and Configuration Management encompassing
- Implementing and troubleshooting Group Policy

a. *Note:* Examples are Group Policy Object (GPO), linking to an existing GPO, delegation of administrative control of Group Policy, filtering of Group Policy settings by using security groups and modification of Group Policy prioritisation

- Managing and troubleshooting user environments using Group Policy
- Configuring directory services to support Remote Installation Services (RIS) including configuration of RIS options and security.

d. Components of a directory service infrastructure encompassing
- Management of directory objects

a. *Note:* Examples are moving objects, publishing resources in the directory service infrastructure, location of objects in the directory service infrastructure, creation and management of objects manually and by scripting, access control of objects and delegation of administrative control

- Monitoring, optimisation and troubleshooting of the directory services infrastructure performance and replication
- Backup and restoring directory services infrastructure

a. *Note:* Examples are authoritative and non authoritative restoration of directory services, restoration from systems failure and the seizing of operations master roles

e. Security encompassing
- Applying security policies using Group Policy
- Creating, analysing and security modification by using Security Configuration and Analysis snap-in and the Security Templates snap-in
- Implementation of an audit policy

f. Monitoring and analysing security events

Multi-layer switched networks

Evidence shall show an understanding of multi-layer switched networks to an extent indicated by the following aspects:

a) Campus network design encompassing:
o core layer
o distribution layer
o access layer
o selection of appropriate devices
o defining workgroups

b) Managing Redundant Links encompassing:
o Spanning Tree Protocol (STP)
o Controlling STP in redundant environments
o STP in Virtual Local Area Network (VLAN) environments
o Configuring redundant routing protocols for a fault-tolerant routing

Note. An example is Hot Standby routing protocol (HSRP)
c) Fast layer 2 services encompassing:
o Fast Ethernet
o Trunking
o Fast Ether channels
o Gigabit services

d) Inter VLAN Routing encompassing:
o Hardware vs. Software switching
o Overview of fast switching technologies
o Elements of a multi-layer switch
o Configuring multi-layer switches

e) Multicast encompassing:
o Multi-cast group management
o Configuring multi-cast control at layer 2
o Configuring multi-cast control at layer 3

f) Controlling Access to the Campus Network
g) Managing Network Traffic

ICT 406 Professional Practice (2) Website

This unit covers installation, set up, implementation and provision of on-going support of web services. It encompasses working safely, installing and administering server software and databases, server side scripting, configuring access and security and documenting work activities.

Development, implementation and testing HTML pages with at least four of the following features:

Relative and absolute links, images and table formatting
Cascaded styles sheets
Forms
New browser windows
Validation of form data

Development, implementation and testing of server scripting for database access with at least four of the following features:

Form data input response
Form data processing
Database access
Output of database table contents
Insertion of table data to database

Installation and administration of key features of Web and Web application servers

Programming elements

Evidence shall show an understanding of the programming elements to an extent indicated by the following aspects:

a) Algorithm Design encompassing:
o Problem Definition
o Steps in Problem-Solving
o Modular Design
o Top-Down Design
o Flow-Charts and Structured Programming
o Pseudo-Code
o Filtering allowable Data Input
o Using standard Input & Output methods
o Object-Oriented Design (brief intro.)
o Documentation Rationale
o Acceptable Documentation Method

b) Machine-Code, Assemblers and Compilers
c) Brief History of Languages & Limitations
d) Parameters of different programming languages encompassing:
o Constants and variables
o Data types and declarations
o Logical flow control
o Detecting breaches of structure
o Documentation instruction examples
o Procedures and function calls
o Parameter-passing
o Local and global variables
o Object-oriented methods
o Classes and objects,
o encapsulation and inheritance.
o Visual programming methods
o General-purpose program libraries

e) Data structures encompassing:
o Records
o Arrays
o File Input/output

f) Testing and validation encompassing:
o Sequencing the process
o Inconsistencies detection

Note, An examples is comparing code to documentation, commonly called —Desk-Checking'.
o Test data selection
o Modular testing & debug
o Problems with using

Client side programming

Evidence shall show an understanding of client side programming them to an extent indicated by the following aspects:

a) Client server architecture
b) Hyper Text Markup Language (HTML) encompassing:
o Forms
o Table
o Cascading style sheets

c) Hyper Text Markup Language (HTML) scripting encompassing:
o Exposed object model
o Events and event handling
o Objects methods, properties, events
o Window, document, form, and form elements
o String object, methods, properties
o Form field validation

Note: Examples of scripting language are JavaScript and Visual Basic (VB) Script
d) Extendable Markup Language (XML) encompassing:
o Syntax
o Structure (well formed XML)
o Schemas
o Transformations
o Parsing Document Object Model (DOM) and Simple API (SAX)
o Scripting to Document Object Model (DOM)

e) Extendible Stylesheet Language (XSL) generating HTML from XML
f) Wireless thin client programming
Note. Examples include Java2 Micro Edition (JEME), Mobile Information Device Profile (MIDP), Windows CE and Palm OS
g) Consideration for system architecture
h) Configurations and profile overview

Server scripting

Evidence shall show an understanding of server scripting the to an extent indicated by the following aspects:
a) Client server architecture
b) Web and Application Servers
c) Server scripting languages e.g. JSP, ASP, PHP, Perl
d) Server script Tags
e) Integrating script with HTML
f) Server script object model
g) Request, Response, Session, Application
h) Using server objects
i) Server components
j) Using components in server scripts
k) Scope of server components e.g. session, page, application
l) Component get / set methods
m) Deploying server components
n) Advanced server scripting concepts

Database access

Evidence shall show an understanding of database access to an extent indicated by the following aspects:

a) Relational Databases encompassing:
o Tables, keys, design rules and normalisation
o Database management utilities

Note. Example include MSSQL, MYSQL and Access
b) Structural query language (SQL) queries encompassing:
o Select, insert, update and delete processes
o Application of conditionals _where', _distinct' and _like'
o Create and dropping tables

c) Data Base connectivity components encompassing:
o Drivers, data sources
o Database connectivity component loading
o Query connection and execution
o ResultSets / RecordSets
o Rows, columns, cursors, concurrency, pooling
o Iterating through ResultSets / RecordSets

Note. Example include ODBC, JDBC, ADO

Web applications and services

Evidence shall show an understanding of web servers to an extent indicated by the following aspects:
a) Comparison of HTTP servers and platforms
Note. Examples include IIS and Apache
b) Comparison of Application servers and platforms
Note. Examples include J2EE / tomcat, .NET
c) HTTP Servers encompassing:
o Installation requirements and methods
o Security configuration
o Content publishing and security

d) WEB application technologies encompassing:
o Server installation and deployment
o Security

e) Server scripting technologies encompassing:
o WEB application installation and deployment
o Application server administration

f) Web services overview encompassing:
o WEB services XML, API, RPC
o XML API processing
o XML DOM
o SOAP (simple object access protocol)
o WEB Services Security

ICT 407 Artificial Intelligence

- Paths to artificial intelligent
- Agents and environment
- Framework for agents environment
- Agent oriented programming languages
- Net logo development
- Movement, Behaviour & Decision making
- Terms of movement
- Animated mapping simulation Embodiment
- Reactive versus cognitive agents
- Emergence, Self organization
- Adaptibility evolution
- Communication
- Search behaviour

- Resoning rules and logic
- Knowledge & reasoning using decision trees
- Intelligence
- Design objectives for artificial intelligence
- Computer problem solving ability

Bachelor of Business

Year 1Refer Diploma in Management Detailed Contents

Year 2 Refer Diploma & Advanced Diploma in Information Technology Detailed Contents

YEAR (3)

Bachelor of Business (E-Business & Management)

The learning system will be based on self study. Read the given references study materials and prepare the project work. You need to read the books in English.

The following units common to MBA course are to be studied.

Mgt 301 Electronics Business

Mgt 302 Information Security

Mgt 303 Management Information System

Mgt 304 Electronics Commerce

Mgt 305 Quantitative Methods for Management

Mgt 306 Human Resources Management

Mgt 307 Marketing Management

Mgt 308 Artificial Intelligence

To assess Level 3, you need to write the report of 10 pages each on what you have learnt in the unit.

YEAR (4)

Mgt 401 Management Project

Mgt 402 Electronics Business Project

Mgt 301 Electronics Business

l Project Objective
l Business Capabilities
l Benefits
l Deliverables & Dependencies
l Costs
l Financial Appraisal
l Timescales & Milestones
l Success Criteria
l Risks
l the impacts of electronic commerce
l drivers and inhibitors of electronic commerce from the perspective of the CEOs
l the impacts of Electronic Commerce on the Industry Supply Chain
l Electronic Commerce Maturity Model

Mgt 302 Information Security

Fundamentals of network security

Evidence shall show an understanding of fundamentals of network security to an extent indicated by the following aspects:
a) Network Security fundamentals
b) Securing Perimeter Routers
c) Access Control Lists (ACLs)
d) Router Authentication, Authorisation and Accounting (AAA) Security
e) Intrusion Detection
f) Internet Protocol (IP) Security
g) Virtual Private Network (VPN)
h) Firewalls
i) Translations and Connections
j) Access Control Lists for Firewalls
k) AAA and Firewalls
l) Intrusion
m) Intrusion Detection Systems (IDS)
n) Firewall Failover and System Maintenance
o) Firewall VPN's
p) Firewall Device Management

- Introduction of Computer Networks and Internet :
  - Overview of the Internet, client/server program, circuit switching, packet switching, physical media, queuing delay and packet loss, TCP/IP Service models, Internet Protocol Stack (Layers)
- Application Layer :
  - Service requirements, WWW, HTTP, FTP, Electronic Mail, Domain Name System, Socket programming

- Transport Layer
  - Service models, Multiplexing/Demultiplexing, Connection-less transport (UDP), Principles of reliable data transfer, Connection-oriented transport (TCP), TCP congestion control
- Network Layer :
  - Routing and forwarding, IP(The Internet Protocol) IPv4, IPv6 ,Routing algorithms, Routing in the Internet, Multicast
- Link Layer and Local Area Networks :
  - Link layer services, Error detection and correction, Multiple Access Protocols, Link layer addressing, Ethernet, Hubs and switches, Point-to-Point Protocol
- understand principles of network security:
  - cryptography and its *many* uses beyond "confidentiality"
  - authentication
  - message integrity
  - key distribution
  - security in practice:
  - firewalls
  - security in application, transport, network, link layers
  - key distribution
  - security in practice:
  - firewalls
  - security in application, transport, network, link layers

Mgt 303 Management Information System (MIS)

- The role of information system
- Hardware & software in enterprise
- Database management system
- Business Telecommunication system
- Communication network
- Network application
- Contemporary mobile service
- Examples of information systems
- Management of MIS
- Managing the Digital Firm
- Emergence of the Digital Firm
- The business information value chain
- A Business Perspective on Information Systems
- Variation in returns on information technology investment
- Sociotechnical Systems
- New Options for Organizational Design:
- The Digital Firm and the Collaborative Enterprise
- Redesigned workflow for insurance underwriting
- The Challenges of Information Systems: Key Management issues

Mgt 304 Electronics Commerce

- **Types of E-commerce**
- **Understanding E-commerce: Organizing Themes**
- **E-commerce Business Models and Concepts**
- **The Internet and World Wide Web: E-commerce Infrastructure**
- **Building an E-commerce Web Site**
- **Online Security and Payment Systems**
- **Marketing Communications**
- **E-commerce Marketing Concepts**
- **Ethical, Social, and Political Issues in E-commerce**
- **Online Retail and Services**
- **E-commerce Business Models and Concepts**
- **The Internet and World Wide Web: E-commerce Infrastructure**
- **Security and Encryption**
- **E-commerce Payment Systems**
- **E-commerce Marketing Communications**
- **Ethical, Social, and Political Issues in E-commerce**
- **Online Service Industries**
- **Supply Chain Management and Collaborative Commerce**
- **Auctions, Portals, and Communities**
- **Online Content and Media**
- **Social Networks, Auctions, and Portals**
- **Online Content Providers: Digital Media**
-

Mgt 305 Quantitative Methods for Management

- Research approach
- Data source
- Qualitative method
- Quantitative Methods
- Experiment research & observation
- Questionaries survey
- Sampling
- Survey analysis
- Statistical analysis
- Writing research report
- Prescriptive Process Models
- Agile Development

Mgt 306 Human Resources Management

- Meeting Present and Emerging Strategic Human Resource Challenges
- **Managing Work Flow and Conducting Job Analysis**
- Understanding Equal Opportunity and the Legal Environment
- Managing Diversity
- Recruiting and Selecting Employees
- Appraising and Managing Performance
- Rewarding Performance
- Managing Compensation

Mgt 307 Marketing Management

- Company (Distributor) background (e.g. brief history, nature of business, etc.)
- Marketing objective(s) on the Chosen product/service
- S.W.O.T Analysis
- Target customers
- Product Positioning in the market
- Describe the current marketing mix:
  - Product
  - Pricing
  - Distribution
  - Marketing Communications (Promotion)
- overall competitive strategy
- planning the details of the marketing mix.

- sales & marketing materials
- understanding of company's competitors
- Marketing Recommendations for improvement
- marketing strategies

Mgt 308 Artificial Intelligence

This is the same as

ICT 407	Artificial Intelligence

Mgt 401 Management Project

Mgt 402 Electronics Business Project

Two reports one for Management for (Mgt 303+Mgt 305+Mgt 306) & another for Electronics Business + Marketing (Mgt 301+Mgt 302+Mgt 304+Mgt 307+Mgt 308) subjects are required to be presented.

Each should contain 4000 to 6000 words of how you pursue the study in Management,, Marketing, Electronics Business subjects should be described.

The project should contain management plans, business plan & performance, task, job procedures IT integration etc of the topics of your choices.

http://www.filefactory.com/file/3dcrz90tirvh/Dip%2BAdv%20Dip%2BB%20Bus%20S%20Course%20Outline.doc

St Clements University Certificate/ Diploma / Advanced Diploma in Electrical Engineering

Course + Credit Outlines

YEAR 1	**Certificate in Electrical Engineering 15 credits**	
	SEMESTER (1)	**Credits**
EE101	DC Circuit Problems	1
EE102	Basic Electrical Fitting & Wiring	1
EE103	Basic Electrical Drafting	1
EE104	Electrical Equipments Safety Protection	2
EE105	Electrical Installation Design	1
EE106	Advanced Electrical Wiring	1
EE107	Electrical Equipments	1
EE108	Electrical Fault Finding	1
EE109	Electrical Control Circuits	1
EE110	Computer Applications	1
EE111	Electromagnetism & Basic Electrical Machines	2
EE112	Alternating Current Principle	2
		15 Credits
	Diploma in Electrical Engineering 30 credits	**Credits**
	SEMESTER (2)	_
EE113	Electrical Fundamental	2
EE114	Electrical Power Principle	1
EE115	Basic Analogue & Digital Electronics	2
EE116	Process Control System	3
EE117	Solar Electrical System	1
EE118	Electrical Energy Supply System	3
EE119	Electrical Risk Assessment	1
EE120	Electrical Contracting & Specification	1
EE121	Electronics Power Control Device	1
		30 Credits

	Advanced Diploma in Electrical Engineering 60 credits	**Credits**
	SEMESTER (1)	
EE201	Engineering Mathematics	1
EE202	Electrical Circuits	1
EE203	Three Phase Power Circuits	1
EE204	Engineering Physics	1
EE205	Electrical Power System	2
EE206	AC Machines	2
EE207	DC Machine	1
EE208	Operational Amplifiers	2
EE209	Analogue Electronics	1

	SEMESTER (2)	
EE301	Advanced Electrical Drafting	1
EE302	Advanced Engineering Mathematics	2
EE303	Transmission Line	2
EE304	Power System Protection	2
EE305	Power Transformer	2
EE306	Electro-mechanical Control	2
EE307	Energy Efficient Building Design	2
EE308	Sustainability	1
EE309	Project Management	2
EE310	Engineering Officer Competency Report	2
		30 Credits

EE101	DC Circuit Problems

This unit covers determining correct operation of single source d.c. series, parallel and series-parallel circuits and providing solutions as they apply to various electrotechnology work functions. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predictable problems in single and multiple path circuits.

Evidence shall show an understanding of electrical fundamentals and direct current multiple path circuits to an extent indicated by the following aspects:

T1 Basic electrical concepts encompassing:

- electrotechnology industry
- static and current electricity
- production of electricity by renewable and non renewable energy sources
- transportation of electricity from the source to the load via the transmission and distribution systems
- utilisation of electricity by the various loads
- basic calculations involving quantity of electricity, velocity and speed with relationship to the generation and transportation of electricity.

T2 Basic electrical circuit encompassing:

- symbols used to represent an electrical energy source, a load, a switch and a circuit protection device in a circuit diagram
- purpose of each component in the circuit
- effects of an open-circuit, a closed-circuit and a short-circuit
- multiple and sub-multiple units

T3 Ohm's Law encompassing:

- basic d.c. single path circuit.
- voltage and currents levels in a basic d.c. single path circuit.
- effects of an open-circuit, a closed-circuit and a short-circuit on a basic d.c. single path relationship between voltage and current from measured values in a simple circuit
- determining voltage, current and resistance in a circuit given any two of these quantities
- graphical relationships of voltage, current and resistance
- relationship between voltage, current and resistance

T4 Electrical power encompassing:

- relationship between force, power, work and energy
- power dissipated in circuit from voltage, current and resistance values
- power ratings of devices
- measurement electrical power in a d.c. circuit
- effects of power rating of various resistors

T5 Effects of electrical current encompassing:

 physiological effects of current and the fundamental principles (listed in AS/NZS 3000) for protection against the this effect
 basic principles by which electric current can result in the production of heat; the production of magnetic fields; a chemical reaction
 typical uses of the effects of current
 mechanisms by which metals corrode
 fundamental principles (listed in AS/NZS3000) for protection against the damaging effects of current

T6 EMF sources energy sources and conversion electrical energy encompassing:
 basic principles of producing a emf from the interaction of a moving conductor in a magnetic field.
 basic principles of producing an emf from the heating of one junction of a thermocouple.
 basic principles of producing a emf by the application of sun light falling on the surface of photovoltaic cells
 basic principles of generating a emf when a mechanical force is applied to a crystal

(piezo electric effect)
 principles of producing a electrical current from primary, secondary and fuel cells
 input, output, efficiency or losses of electrical systems and machines
 effect of losses in electrical wiring and machines
 principle of conservation of energy

T7 Resistors encompassing:
 features of fixed and variable resistor types and typical applications
 identification of fixed and variable resistors
 various types of fixed resistors used in the Electro technology Industry. e.g. wire-wound, carbon film, tapped resistors.
 various types of variable resistors used in the Electro technology Industry e.g. adjustable resistors: potentiometer and rheostat; light dependent resistor (LDR); voltage dependent resistor (VDR) and temperature dependent resistor (NTC, PTC).
 characteristics of temperature, voltage and light dependent resistors and typical applications of each
 power ratings of a resistor.
 power loss (heat) occurring in a conductor.
 resistance of a colour coded resistor from colour code tables and confirm the value by measurement.
 measurement of resistance of a range of variable' resistors under varying conditions of light, voltage, temperature conditions.
 specifying a resistor for a particular application.

T8 Series circuits encompassing:
 circuit diagram of a single-source d.c. 'series' circuit.
 Identification of the major components of a 'series' circuit: power supply; loads; connecting leads and switch
 applications where 'series' circuits are used in the Electro technology industry.
 characteristics of a 'series' circuit - connection of loads, current path, voltage drops, power dissipation and affects of an open circuit in a 'series' circuit.
 the voltage, current, resistances or power dissipated from measured or given values of any two of these quantities
 relationship between voltage drops and resistance in a simple voltage divider network.
 setting up and connecting a single-source series dc circuit
 measurement of resistance, voltage and current values in a single source series circuit
 effect of an open-circuit on a series connected circuit

T9 Parallel circuits encompassing:
 schematic diagram of a single-source d.c. 'parallel' circuit.
 major components of a 'parallel' circuit (power supply, loads, connecting leads and

· applications where 'parallel' circuits are used in the Electrotechnology industry.
 characteristics of a 'parallel' circuit. (load connection, current paths, voltage drops, power dissipation, affects of an open circuit in a 'parallel' circuit).
 relationship between currents entering a junction and currents leaving a junction
 relationship between branch currents and resistances in a two branch current divider network.
 calculation of the total resistance of a 'parallel' circuit.
 calculation of the total current of a 'parallel' circuit.
 Calculation of the total voltage and the individual voltage drops of a 'parallel' circuit.
 setting up and connecting a single-source d.c. parallel circuit
 resistance, voltage and current measurements in a single-source parallel circuit
 voltage, current, resistance or power dissipated from measured values of any of these quantities
 output current and voltage levels of connecting cells in parallel.

T10 Series/parallel circuits encompassing:
 schematic diagram of a single-source d.c. 'series/parallel' circuit.
 major components of a 'series/parallel' circuit (power supply, loads, connecting leads and switch)
 applications where 'series/parallel' circuits are used in the Electrotechnology industry.
 characteristics of a 'series/parallel' circuit. (load connection, current paths, voltage drops, power dissipation, affects of an open circuit in a 'series/parallel' circuit).
 relationship between voltages, currents and resistances in a bridge network.
 calculation of the total resistance of a 'series/parallel' circuit.
 calculation of the total current of a 'series/parallel' circuit.
 calculation of the total voltage and the individual voltage drops of a 'series/parallel' circuit.
 setting up and connecting a single-source d.c. series/ parallel circuit
 resistance, voltage and current measurements in a single-source d.c. series / parallel circuit
 the voltage, current, resistances or power dissipated from measured values of any two of these quantities

T11 Factors affecting resistance encompassing:

 four factors that affect the resistance of a conductor (type of material, length, cross-sectional area and temperature)
 affect the change in the type of material (resistivity) has on the resistance of a conductor.
 affect the change in 'length' has on the resistance of a conductor.
 affect the change in 'cross-sectional area' has on the resistance of a conductor.

effects of temperature change on the resistance of various conducting materials
· effects of resistance on the current-carrying capacity and voltage drop in cables.
 calculation of the resistance of a conductor from factors such as conductor length, cross-sectional area, resistivity and changes in temperature
 using digital and analogue ohmmeter to measure the change in resistance of different types of conductive materials (copper, aluminium, nichrome, tungsten) when those materials undergo a change in type of material length, cross-sectional area and temperature.

T12 Effects of meters in a circuit encompassing:
 selecting an appropriate meter in terms of units to be measured, range, loading effect and accuracy for a given application.
 measuring resistance using direct, volt-ammeter and bridge methods.
 instruments used in the field to measure voltage, current, resistance and insulation resistance and the typical circumstances in which they are used.
 hazards involved in using electrical instruments and the safety control measures that should be taken.
 operating characteristics of analogue and digital meters.
 correct techniques to read the scale of an analogue meters and how to reduce the 'parallax' error.
 types of voltmeters used in the Electrotechnology industry – bench type, clamp meter, Multimeter, etc.
 purpose and characteristics (internal resistance, range, loading effect and accuracy) of a voltmeter.
 types of voltage indicator testers. e.g. LED, neon, solenoid, volt-stick, series tester, etc. and explain the purpose of each voltage indicator tester.
 operation of various voltage indicator testers.
 advantages and disadvantages of each voltage indicator tester.
 various types of ammeters used in the Electrotechnology industry – bench, clamp meter, multimeter, etc.
 purpose of an ammeter and the correct connection (series) of an ammeter into a circuit.
 reasons why the internal resistance of an ammeter must be extremely low and the dangers and consequences of connecting an ammeter in parallel and/or wrong polarity.
 selecting an appropriate meter in terms of units to be measured, range, loading effect and accuracy for a given application
 connecting an analogue/digital voltmeter into a circuit ensuring the polarities are correct and take various voltage readings.
 loading effect of various voltmeters when measuring voltage across various loads.
 using voltage indicator testers to detect the presence of various voltage levels.
 connecting analogue/digital ammeter into a circuit ensuring the polarities are correct and take various current readings.
T13 Resistance measurement encompassing:
 Identification of instruments used in the field to measure resistance (including insulation resistance) and the typical circumstances in which they are used.
 the purpose of an Insulation Resistance (IR) Tester.
 the parts and functions of various analogue and digital IR Tester (selector range switch, zero ohms adjustment, battery check function, scale and connecting leads).
 reasons why the supply must be isolated prior to using the IR tester.
 where and why the continuity test would be used in an electrical installation.
 where and why the insulation resistance test would be used in an electrical installation.
 the voltage ranges of an IR tester and where each range may be used. e.g. 250 V d.c, 500 V d.c and 1000 V d.c
 AS/NZS3000 Wiring Rules requirements – continuity test and insulation resistance (IR) test.
 purpose of regular IR tester calibration.
 the correct methods of storing the IR tester after use
 carry out a calibration check on a IR Tester
 measurement of low values of resistance using an IR tester continuity functions.
 measurement of high values of resistance using an IR tester insulation resistance function.
 volt-ammeter (short shunt and long shunt) methods of measuring resistance.
 calculation of resistance values using voltmeter and ammeter reading (long and short shunt connections)
 measurement of resistance using volt-ammeter methods

T14 Capacitors and Capacitance encompassing:
 basic construction of standard capacitor, highlighting the: plates, dielectric and connecting leads
 different types of dielectric material and each dielectric's relative permittivity.
 identification of various types of capacitors commonly used in the Electrotechnology industry (fixed value capacitors -stacked plate, rolled, electrolytic, ceramic, mica and Variable value capacitors – tuning and trimmer)
 circuit symbol of various types of capacitors: standard; variable, trimmer and polarised
 terms: Capacitance (C), Electric charge (Q) and Energy (W)
 unit of: Capacitance (Farad), Electric charge (Coulomb) and Energy (Joule)
 factors affecting capacitance (the effective area of the plates, the distance between the plates and the type of dielectric) and explain how these factors are present in all circuits to some extent.
 how a capacitor is charged in a d.c. circuit.
 behaviour of a series d.c. circuit containing resistance and capacitance components. - charge and discharge curves

the term 'Time Constant' and its relationship to the charging and discharging of a capacitor.
 calculation of quantities from given information: Capacitance (Q = VC); Energy (W =½CV2); Voltage (V = Q/C)
 calculation one time constant as well as the time taken to fully charge and discharge a given capacitor. (τ = RC)
 connection of a series d.c. circuit containing capacitance and resistor to determine the time constant of the circuit

T15 Capacitors in Series and Parallel encompassing:
 hazards involved in working with capacitance effects and the safety control measures that should be taken.
 safe handling and the correct methods of discharging various size capacitors
 dangers of a charged capacitor and the consequences of discharging a capacitor through a person

 factors which determine the capacitance of a capacitor and explain how these factors are present in all circuits to some extent.
 effects of capacitors connected in parallel by calculating their equivalent capacitance.
 effects on the total capacitance of capacitors connected in series by calculating their equivalent capacitance.
 Connecting capacitors in series and/or parallel configurations to achieve various capacitance values.
 common faults in capacitors.
 testing of capacitors to determine serviceability.
 application of capacitors in the Electrotechnology industry.

EE102	Basic Electrical Fitting & Wiring

This unit covers fixing, securing and mounting techniques as apply in the various electrotechnology work functions. It encompasses the safe use of hand and portable power tools, safe lifting techniques, safe use of ladders and elevated platforms and the selection and safe application of fixing devices and supporting accessories/equipment.

KS01-EE105A Fixing and support devices/techniques
Evidence shall show an understanding of accessories and support and fixing device and methods and their use to an extent indicated by the following aspects:
T1. Device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to hollow walls encompassing:
 types and safe application of devices for hollow wall fixing and support
 methods/techniques used to fix/support to wood, hollow wall, masonry blocks, plasterboard, panelling
 types and safe application of fixing devices used in the electrotechnology industry for wood and hollow wall structures (wood screws, coach bolts, self-tappers, self

drilling, metal thread, hollow wall anchors, behind plaster brackets, stud brackets, plasterboard devices, toggle devices)
 types of tools used for hollow wall fixing and supporting.
 using various fixing methods to fix/support to hollow walls.

T2. Device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to solid walls encompassing:
 types and safe application of devices used for solid wall fixing and support
 methods/techniques used in to fix to masonry and concrete structures
 fixing devices used in the electrotechnology industry for solid wall structures (wall-plugs, expanding concrete fixing devices, gas powered fixing tools, powder actuated fixing tools, loxins, dynabolts, chemical devices)
 regulatory requirements for use of powder fixing tools.
 hand and power tools used in fixing and supporting accessories
 using various fixing methods to fix/support to solid walls

T3. Device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to metal fixing encompassing:
 accessories that may be fixed to metal (saddle clips, conduits, brackets, switches)
 techniques for fixing to metal
 fixing devices: coach bolts, self-tappers, metal thread bolts, hollow wall anchors, rivets
 fixing tools - spanners, screwdrivers, power screw drivers, pop riveters, files, reamers
 OH&S issues related to drilling, cutting, eye protection, metal filings, swarf, noise
 Using power drills, drill bits, change drill speeds.
 Install a fixing device and accessory capable of supporting up to 20 kg on the metal plate.

T4. Securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories using fixing adhesives and tapes encompassing:
 types and safe application of using adhesives and tapes as fixing devices (load limits of different commercial products)
 accessories that may be fixed using adhesives and tapes
 techniques for the application of adhesives and tapes
 tools used to apply and cut adhesives and tapes
 hazards and safety measures when working with adhesives and chemical fixing devices (fumes, cutting, eye protection, physical contact, hand protection, ingestion)

EE103	Basic Electrical Drafting

This unit covers the use of drawings, diagrams, cable schedules, standards, codes and specifications as they apply to the various electrotechnology work functions. It encompasses the rudiments for communicating with schematic, wiring and mechanical diagrams and equipment and cable/connection schedules, manuals, site and architectural drawings and plans showing the location of services, apparatus, plant and machinery and understanding the use and format of compliance standards and job specifications.

KS01-EE107A Drawings, diagrams and schedules
Evidence shall show an understanding of drawings, diagrams and schedules used in electrotechnology work to an extent indicated by the following aspects:
T1 Architectural drawings encompassing:
 site plans, floor plans detailed drawings and standard drawings
 architectural floor plan to determine the power and lighting or communications / audio/ video layouts required in a domestic installation
 site plan to locate the service point, consumers mains, communication services, main switchboard, distribution boards and/or builders supplies.
 standard drawing scales to determine the actual lengths represented by dimensions on an architectural drawing.

 reading and interpretation of floor plans to determine the location of the electrical/ communication/audio accessories and appliances.
 Australian standard symbols used on floor plans to show the location of the accessories

and appliances as detailed in an electrical schedule.

T2 Electrical drawings encompassing:
 types of electrical drawings: block, circuit, wiring and ladder diagrams
 purpose and application of block, circuit, wiring diagrams and ladder diagrams
 Australian standard symbols used to represent components on electrical diagrams.
 conventions used in and the features of circuit diagrams
 converting a circuit diagram to a wiring diagram
 identification of cable type, origin and route from a cable schedule.
 developing a cable schedule for a given installation.

T3 Circuit diagrams encompassing:
 purpose of circuit diagrams in the electrotechnology industry
 conventions used in and the features of circuit diagrams
 sketching basic circuit diagrams
 common symbols used in circuit diagram (Australian Drawing Standard AS/NZS 1102)
 developing switching charts to identify the terminals of various types of switches
 connecting equipment using circuit diagrams.

T4 Wiring diagrams encompassing:
 purpose of wiring diagrams in the electrotechnology industry
 conventions used in and the features of wiring diagrams
 sketching basic wiring diagrams
 common symbols used in wiring diagram (Australian Drawing Standard AS/NZS 1102)
 connecting equipment using wiring diagrams.

T5 Building construction drawings and diagrams encompassing:
 building types: timber frame, brick veneer, double brick and metal frame.
 identification of different types of: footings, floors, external walls, roofs, interior walls
 typical cable routes through buildings, structures and premises
 sequence of each constructional stage for brick, brick veneer and timber cottages
 identification of the stages at which the electrical/communications - first and second fixing occurs in the constructional sequence
 areas of cooperation between electrical/communications and other building trades

EE104	Electrical Equipments Safety Protection

This unit covers the arrangement and termination of circuits, control and protection devices and systems for electrical installations operating at voltages up to 1,000 V a.c. or 1,500 V d.c. It encompass knowledge and application of schemes for protection of persons and property, correct functioning, ensuring compatibility with the supply, arranging installation into circuits and selecting and arranging switchgear/controlgear and protective devices to meet compliance requirements and documenting arrangement decisions

KS01-EG063A Electrical installations — arrangement, control and protection
Evidence shall show an understanding of circuit arrangements, control and protection of electrical installations that comply with the Wiring Rules and Service Rules to an extent indicated by the following aspects:
T1 Safety principles to which electrical systems in building and premises shall comply.
 Safety principles are given in Part1 (Section 1) of the Wiring Rules AS/NZS 3000 with deemed-to-comply requirements given in Sections 2 to 8.
 Compliant methods for providing protection - include those for providing protection against direct and indirect contact; thermal effects; unwanted voltages; overcurrent; fault currents; overload; overvoltage; injury from mechanical movement.
 Requirements for installation design and selection of equipment - includes compliant protection arrangements; correct functioning; compatibility with supply; estimation of maximum demands; voltage drop considerations; arrangement of circuits and the like

T2 Circuit and control arrangements encompassing:
 reason for dividing electrical installations into circuits
 factors that shall be considered in determining the number and type of circuits required for an installation.
 daily and seasonal demand for lighting power, heating and other loads in a given installation.
 number and types of circuits required for a particular installation.
 diagrams/schedules of circuits for given installations.
 application and arrangements of SELV and PELV circuits
 application and arrangement of an isolated supply

T3 Hazards and risks in an electrical installation encompassing:
 effects on the human body of various levels of a.c. and d.c. current and duration of current flow for various current paths.
 risk of ignition of flammable materials due the thermal effects of current or electric

arcs in normal service of an electrical installation.
 risk of injury from mechanical movement of electrically actuated equipment.
 Protection against direct contact (basic protection)
 acceptable methods
 use of extra-low voltage

T4 Protection against indirect contact encompassing:
 indirect contact with live parts of an electrical installation may occur.
 methods and devices that comply with the Wiring Rules for providing protection against indirect contact.
 components of the 'automatic disconnection of supply' method of protection against indirect contact.
 the terms ‘touch voltage’ and ‘touch current’.
 the current path when a short circuit fault to exposed conductive parts of an appliance occurs.

 protection against indirect contact is by the use of Class II equipment and by electrical separation.
 additional protection by use of Residual Current Devices (RCDs)
 protection against indirect contact by use of extra-low voltage and electrical separation.
 Protection requirements for damp situations.

T5 Earthing encompassing:
 the terms: earthed, earthed situation, earth electrode, equipotential bonding, multiple earthed neutral (MEN) system, protective earth-neutral (PEN) conductor, main earthing conductor, protective earthing (PE) conductor, functional earthing, MEN link.
 selection of minimum size-earthing conductor for a range of active conductor sizes and materials.
 parts of an earthing system and the purpose of each.
 typical arrangement for a MEN earthing system.
 arrangements of protective earthing conductors that comply with the Wiring Rules.
 requirements for equipotential bonding in a range of installation situations.
 Installation of a MEN earthing system for a single phase installation

T6 Protection against overload and short circuit current encompassing:
 overload current or fault currents in an electrical installation.
 equivalent circuit of an earth fault-loop
 level of fault current possible at a given point in an installation from the fault-loop impedance and data from the electricity distributor.
 methods and devices that comply with the Wiring Rules AS/NZS 3000 for providing protection against the damaging effects of overload and fault current
 requirements for co-ordination between protective devices and conductors

requirements for co-ordination of protection devices for discrimination and back-up protection.

T7 Devices for automatic disconnection of supply encompassing:
 operating principles of thermal/magnet circuit breakers.
 operating principles of common types of fuses.
 operating principles of residual current devices (RCD).
 time/current curves tripping characteristics of various types of circuit breakers that comply with the requirements of the Wiring Rules.
 time/current curves fusing characteristics of various types of fuses that comply with the requirements of the Wiring Rules.
 time/current curves tripping characteristics of various types of RCDs that comply with the requirements of the Wiring Rules.
 factors in a fault loop that will affect the impedance of the circuit.
 maximum impedance of an earth fault-loop to ensure operating of a protection device.
 selecting a fuse for fault current limiting protection.
 drawing switchboard wiring arrangements of 2-pole RCDs, 4-pole RCDs, combination RCD/MCBs.

T8 Protection against over voltage and under voltage encompassing:
 causes of over voltage and how this may affect the electrical system.
 methods for protection against over voltage.
 causes of under voltage and how this may affect the electrical system.
 methods for protection against under voltage.

T9 Control of an electrical installation and circuits encompassing:
 switch types, current and voltage ratings and IP rating and where these apply.
 switching requirements for isolation, emergency, mechanical maintenance and functional control.
 control arrangement for complete installations with and without safety services and an alternative supply.

T10 Switchboards / distribution boards encompassing:
 Purpose, types and applications.
 Physical and circuit arrangements for whole current and CT metering.
 Physical and circuit arrangements of main switches, circuit protection devices, fault-current limiters and metering equipment and other distributor equipment.
 compliance requirements (includes location and access, arc fault protection, identification, construction suitability, equipment marking, wiring, fire protection and arc-fault protection).

EE105	Electrical Installation Design

This unit covers selecting wiring systems and cables for electrical installations operating at voltages up to 1,000V a.c. or 1,500 V d.c. It encompass knowledge and application of wiring systems and cable types, selecting wiring system compatible with the installation conditions, selecting cables that comply with required current-carrying capacity and voltage drop and earth fault-loop impedance limitations, coordination between protective devices and conductors and documenting selection decisions

KS01-EG107A Electrical installation — cable selection and co-ordination
Evidence shall show an understanding of selecting cables and ensuring co-ordination between protection device and conductors in electrical installations that comply with the Wiring Rules, Selection of cables standards and Service Rules to an extent indicated by the following aspects:
T1 Performance requirements - design and safety encompassing:
 harmful effects against which the design of an electrical installation must provide protection.
 performance standards of a correctly functioning electrical installation.
 supply characteristics that shall be considered when designing an electrical installation.
 acceptable methods for determining the maximum demand in consumer's mains and sub-mains.
 AS/NZS 3000 requirements limiting voltage drop in an installation.
 reason for dividing electrical installations into circuits and the factors that shall determine their number and type.
 typical external factors that may damage an electrical installation and that shall be considered in the installation design.
 methods for protecting persons and livestock against direct and indirect contact with conductive parts and the typical application of each.
 acceptable methods of protection against the risks of ignition of flammable materials and injury by burns from the thermal effects of current, in

normal service.
- likely sources of unwanted voltages and the methods for dealing with this potential hazard.
- acceptable methods for protecting persons and livestock against injury and property against damage from the effects of over current.
- requirement for protection against fault current.
- requirement for protection against the harmful effects of faults between live parts of circuits supplied at different voltages.
- need for protection against injury from mechanical movement and how this may be achieved.
- features of 'fire rated construction' and how the integrity of the fire rating can be maintained in relation to electrical installation.

T2 Final subcircuit arrangements encompassing:
- factors that shall be considered in determining the number and type of circuits required

for an installation.
- daily and seasonal demand for lighting, power, heating and other loads in a given installation.
- number and types of circuits required or a particular installation.
- current requirements for given final subcircuits.
- layout/schedule of circuits for given installations.

T3 Factors affecting the suitability of wiring systems encompassing:
- wiring systems typically used with various construction methods and particular environments.
- installation conditions that may affect the current-carrying capacity of cables.
- external influences that may affect the current-carrying capacity and/or may cause damage to the wiring system.
- AS/NZS 3000 requirements for selecting wiring systems for a range of circuits, installation conditions and construction methods into which the wiring system is to be installed. Note: Wiring systems include cable enclosures, underground wiring, aerial wiring, catenary support, emergency systems, busbar trunking and earth sheath return.

T4 Maximum demand on consumer’s mains/submains encompassing:
- acceptable methods for determining the maximum demand on an installation’s consumer’s mains and submains.
- maximum demand for the consumer's mains for given installations up to 400 A per phase.
- maximum demand for given submains.

T5 Cable selection based on current carrying capacity requirements encompassing:
- installation conditions for a range of wiring systems and applications.
- external influences that require the use of a derating factor.
- AS/NZS 3000 requirements for coordination of cables and protection devices.
- AS/NZS 3008 used to select conductor size based on the maximum current requirement for a given installation condition including any applicable derating factors.

T6 Cable selection based on voltage drop requirements encompassing:
- AS/NZS 3000 requirements for maximum voltage drop in an installation.
- relevant tables in AS/NZS 3008 for unit values of voltage drop.
- calculation of the expected voltage drop in a given circuit.
- selecting cables to satisfy voltage drop requirements in addition to current carrying capacity requirements.

T7 Cable selection based on fault loop impedance requirements encompassing:
- AS/NZS 3000 requirements for maximum fault loop impedance in an installation.
- relevant tables in AS/NZS 3008 to determine cable impedances.
- calculation of the expected fault loop impedance for a given circuit arrangement.
- selecting cables to satisfy fault loop impedance requirements in addition to current

carrying capacity requirements and voltage drop requirements.

T8 Selecting protection devices encompassing:
- acceptable methods of protection against indirect contact.
- AS/NZS 3000 requirements for selecting methods and devices to protect against indirect contact for a range of installation types and conditions.
- coordination between conductors and protection devices to ensures the protection of cables from over heating due to over current.
- possible injuries to persons and livestock from hazards due to a short circuit.
- AS/NZS 3000 requirements for selecting devices to protect against overload current for a range of circuits and loads.
- AS/NZS 3000 requirements for selecting devices to protect against short-circuit current for a range of installation conditions.

T9 Selecting devices for isolation and switching encompassing:
- requirements for the provision of the isolation of every circuit in an electrical installation.
- need for protection against mechanical movement of electrically activated equipment.
- AS/NZS 3000 requirements for selecting devices for isolation and switching for a range of installations and conditions.

T10 Switchboards encompassing:
- AS/NZS 3000 and local supply authority requirements for switchboards.
- tariff structures for the supply of electricity.
- equipment installed at the main switchboards with capacities up to 400 A per phase.
- layout of a main switchboard for an installation supplied with single phase single tariff whole current metering.
- layout of a main switchboard for an installation supplied with single phase multiple tariff whole current metering.
- layout of a main switchboard for an installation supplied with multiphase single tariff whole current metering.
- layout of a main switchboard for an installation supplied with multiphase multiple tariff whole current metering.
- layout of a main switchboard for a multiple tenancy installation with whole current metering.
- layout of a main switchboard, including metering, for an installation supplied with three phase CT metering.
- local supply authority requirements for connection of an electrical installation to the electrical supply system

This unit covers the installation in building and premises of wiring enclosures, cable support systems, cables and accessories and designed to operate at voltages up to 1,000 V a.c. or 1,500 V d.c. It encompasses working safely and to installation standards, routing cables to specified locations, terminating cables and connecting wiring at accessories and completing the necessary installation documentation.

KS01-EG103A Installation of wiring systems
Evidence shall show an understanding of the installation of wiring systems that comply with standards to an extent indicated by the following aspects:

T1 Standards, codes and requirements applicable to the installation of wiring systems encompassing:
 Cables and methods of mechanical protection and support
 Protection against and from other services.
 Prohibited cable locations
 Building codes affecting the installation of cables in buildings, structures and premises (limitation on penetration of structural elements, maintenance of fire protection integrity, and wiring above suspected ceilings)
 Issues affecting electrical installations in heritage buildings and premises (limitation on penetration of structural and finished elements, accessing cable routes, types and colour of exposed accessories).

T2 Use of other installation standards called up by the Wiring Rules for special situations encompassing:
 standards that apply to Electromedical treatment areas.
 additional requirements for construction and demolition sites.
 Relocatable installations and their site supply
 additional requirements for caravan park.
 additional requirements for marinas and pleasure craft at low voltage.
 additional requirements for shows and carnivals.

T3 Hazardous areas encompassing:
 Conditions that apply in an areas that require them to be classified as a ‘Hazardous area’.
 Responsibility for classifying a hazardous area
 Awareness of standards called up by the Wiring Rules for selection of equipment and installations in Hazardous areas. (AS/NZS 3000 requirements for hazardous areas).

T4 Requirement for the installation of cables and accessories in damp situations and ELV installations encompassing:
 restricted zones around baths, showers, fixed water containers, pools, sauna heaters and fountains/water features for given installations.
 selecting equipment suitable for installation in given damp situations.
 voltage range that defines extra-low voltage.
 'Separated extra-low voltage (SELV) system' and a 'Protected extra-low voltage (PELV) system".
 AS/NZS 3000 requirements for selecting extra-low voltage systems and devices for a range of installations and conditions.

T5 Aerial cabling encompassing:
 Describe the types of aerial cabling.
 State the AS/NZS 3000 and local supply authority requirements for aerial cabling.
 Termination of aerial cables in accordance with AS/NZS 3000 and local requirements.
 installation of consumers mains for connection via overhead consumers terminals in

ccordance with AS/NZS 3000 and local requirements.
 Testing of installed cables compliance with Australian Standards

T6 Underground cabling encompassing:
 Describe permissible underground cabling systems.
 Identify other underground services.
 State the AS/NZS 3000 and local supply authority requirements for underground cabling.
 List the advantages and disadvantages of underground wiring systems
 selection of underground consumers mains in accordance with AS/NZS 3000 and local requirements

T7 Techniques for installing cables and wiring systems encompassing:
 Typical cable routes through buildings, structures and premises.
 Application of wiring accessories
 Drawing-in, placing and fixing of cables
 Cable and conductor terminations
 Maintaining fire rating integrity.
 Inspecting and testing installed and terminated cables to ensure they comply with continuity and insulation resistance and are safe to connect to the supply.

EE107	Electrical Equipments

This unit covers the installation of appliances protection devices, switchgear, controlgear, switchboards, and accessories designed to operate at voltages up to 1,000 V a.c. or 1,500 V d.c. It encompasses working safely and to installation standards, matching appliances and accessories with that specified, making required circuit connections and completing the necessary installation documentation.

vidence shall show an understanding of the installation of appliances (current-using equipment) and accessories to an extent indicated by the following aspects:
T1 Installation standards, codes and requirements applicable to installing electrical equipment encompassing.
 Protection against thermal effects
 Connection of electrical equipment (appliances, switchgear and accessories include switchgear and controlgear, switchboards, socket-outlets,

lighting equipment and accessories, lamps and luminaires, smoke and fire detectors, cooking appliances, appliances producing hot water or steam, room heaters, electric heating cables for floors and ceilings, space heating, duct heaters, electricity converters, motors, transformers, capacitors, and batteries).
 Required and permitted locations current-using equipment and accessories
 Control, switching and over current and RCD protection

T2 Terminal configuration for connection of phase, neutral and protective earthing conductors for each type of equipment.
T3 Building codes affecting the installation of current-using equipment and accessories in buildings, structures and premises encompassing:
 maintenance of fire protection integrity, requirements for emergency services (safety services) and the like.

T4 Issues affecting electrical installations in heritage buildings and premises encompassing:
 limitation on types and colour of exposed accessories.

EE108	Electrical Fault Finding

This unit covers trouble-shooting and repairing faults in electrical apparatus and interconnecting circuits and equipment operating at voltages up to 1,000 V a.c. or 1,500 V d.c. It encompasses working safely, reading circuit diagrams, sketching diagrams from traced wiring, logically applying fault finding procedures, conducting repairs and completing the necessary service documentation.

KS01-EG108A Electrical circuit and equipment faults and fault finding techniques
Evidence shall show an understanding of electrical circuit and equipment faults and fault finding techniques to an extent indicated by the following aspects:
T1 Troubleshooting concepts encompassing:
 need to understand the correct operation of a circuit or equipment, switching and control circuit arrangements.
 common faults with circuits and equipment including operator faults, incorrect connections, open-circuits, short-circuits, device faults (mechanical), supply faults.
 typical faults symptoms and their causes: operation of circuit protective device, appliance does not operate, single phase motor does not develop enough torque to drive the load, three phase motor does not develop enough torque to drive the load, motor overload trips
 factors to consider in clarifying the nature of a fault: initial fault report, confirmation of

symptoms of the fault, comparison of symptoms with normal operation
 effect to cause reasoning — assumptions of possible causes
 methods for testing assumptions: visual inspection, component isolation, test equipment, sectional testing, split-half tests
 repairing the fault and the steps needed to ensure fault doesn't re-occur
 dealing with intermittent faults (typical causes of intermittent faults are vibration, shock, changes in temperature and electromagnetic interference).
 final testing and re commissioning

T2 Troubleshooting water heater and appliance circuits/equipment encompassing:
 circuit diagrams of common single phase and three phase hot water systems
 single phase and three phase element resistance values (determined from measurement and calculation from power and voltage ratings)
 testing single and three phase elements for correct insulation resistance and continuity
 element replacement techniques
 operation of thermostats, thermal cut-outs and pressure relief valves, flow switches and checking sacrificial anodes
 locating faults in common single and three phase hot water systems
 repairing faulty water heating systems

T3 Troubleshooting electrical appliance circuits/equipment encompassing:
 circuit diagrams of common single phase and three phase appliances
 methods to determine the cause of an RCD operation
 identification of appliances that is causing an RCD to trip
 testing single and three phase appliances for correct insulation resistance and continuity
 operation of appliances controls
 locating faults in common single and three phase appliances
 repairing faulty appliances

T4 Troubleshooting lighting circuits encompassing:
 circuit and wiring diagrams of common lighting circuits including single light controlled by a single switch, multiple lights controlled by a single switch, two and three way switching using the loop at the light method and the loop at the switch method.
 causes of wiring faults from supplied symptoms and circuit and/or wiring diagrams
 causes of faults in ELV lighting devices, include transformer (iron core or electronic), voltage drop, heat, over-voltage, poor connections, incompatible dimmers
 diagrams of a basic fluorescent light circuit including lamp, ballast and starter
 locating faults in fluorescent light circuits
 operation of a range of lighting control including passive infra-red (PIR), dimmers, photo electric or day-light switches and time clocks
 locating faults in lighting control circuits

T5 Troubleshooting single phase motor and control circuits encompassing:

circuit diagrams of split phase, capacitor start, capacitor start capacitor run, universal and shaded pole single phase motors
 causes of single phase motor faults from supplied symptoms and circuit diagrams
 causes of electrical faults in single phase motors, include open and partially open circuit winding, short and partially short circuit winding, open circuit rotor, burnt out winding, coil shorted to frame.
 reasons for a thermal overload trip and how often they are to be reset before investigating a cause
 internal mechanical faults and their consequences, include bearings, fans, bent shaft, locked rotor, blocked air vents, centrifugal switches,

environmental factors
 faults on driven loads and couplings and their consequences, include slipping belts, poorly aligned coupling (shims), vibration, loads bearing failing, load stalling.
 locating faults in single phase motors and their controls

T6 Troubleshooting three phase induction motor encompassing:
 circuit diagrams of three phase induction motors
 causes of three phase motor faults from supplied symptoms and circuit diagrams
 causes of electrical faults in three phase motors, include open and partially open circuit phase winding, short and partially short circuit phase winding, open circuit rotor, burnt out phase winding, coil shorted to frame.
 reasons for a thermal overload trip and how often they are to be reset before investigating a cause
 internal mechanical faults and their consequences, include bearings, fans, bent shaft, locked rotor, blocked air vents, environmental factors.
 faults on driven loads and couplings and their consequences, include slipping belts, poorly aligned coupling (shims), vibration, loads bearing failing, load stalling.
 locating faults in three phase induction motors and their controls

T7 Troubleshooting electrical installations encompassing:
 circuit diagrams, wiring diagrams, cable schedules and specifications of electrical installations
 causes of electrical installation faults from supplied symptoms and circuit diagrams include open and partially open circuit wiring, short and partially short circuit wiring, low insulation resistance, incorrect polarity, transposition of conductors, RCD tripping.
 locating faults in electrical installations
 repairing faulty electrical installation circuits components and wiring.

EE109	Electrical Control Circuits

This unit covers developing, connecting and functionally testing electrical power and control circuits that perform specific control functions. It encompasses working safely; developing schematic/ladder diagrams and converting them to wiring diagrams; selecting and connecting contactors and control devices to perform a specific function.

KS01-EG109A Electrical control devices and circuits
Evidence shall show an understanding of electrical control devices and circuits to an extent indicated by the following aspects:
T1 Basic relay circuits encompassing:
 Identification of given circuit diagrams (schematic) symbols and explain the operation of the components represented
 labelling wires and terminal (numbering systems)
 control relay - operating principles, basic contact configurations and identification and common applications
 push button - switching configurations and common applications
 selecting pushbuttons/pilot lamps from manufacturer’s catalogues for specific applications
 development of simple stop-start relay circuit that incorporates pilot lights and latching circuit.
 connection and testing of control circuits
T2 Relay circuits and drawing conventions encompassing:
 circuit diagram drawing conventions
 selecting relays from manufacturers’ catalogue for specified applications
 circuit development of electrical control circuit in accordance with a written description (specification) and list the sequence of operation of the circuit
 connecting simple electrical control circuit from circuit diagrams
 applying safe working practices when testing an electrical control circuit

T3 Remote STOP-START control and electrical interlocking encompassing:
 operation of local and remote start-stop control of relays
 operation of an electrically interlocked relay circuit
 development of a relay circuit incorporating local and remote start and stop buttons and electrical interlocking.
 connecting electrical circuits with local and remote start-stop control and with electrical interlocking.
 applying circuit checking and testing techniques to an electrical control circuit.

T4 Time delay relays encompassing:
 timers - operating principles, basic contact configurations and identification and common applications
 selecting timers for specified functions from manufactures’ catalogues
 development of timer controlled circuits from a written description and list the sequence of circuit operation
 connecting a timer controlled circuit using a circuit diagram as a guide.
 timer circuit checking and testing procedures.

T5 Circuits using contactors encompassing:
 contactors - operating principles, basic contact configurations and identification and common applications
 thermal overloads - operating principles, basic contact configurations and identification and common applications
 circuit diagram symbols
 circuit development using a contactor
 using contactors for motor control.
 compliance requirements for devices for isolating circuits.

T6 Jogging and interlocking encompassing:
 purpose and application of jogging control of motors
 operation of motor control using start, stop and jog buttons
 purpose and application of electrical/mechanical interlocking
 developing a multiple motor starting circuit from a description of the circuit operation including jog and interlock functions.
 selecting circuit components using manufacturers’ catalogues for appropriate duty

ratings
 connecting and testing a multiple motor starting circuit which incorporates start, stop and jog control.

T7 Control devices encompassing:
 common control devices used in automatic control circuits: limit switches, proximity switches, photoelectric cells, pressure switches, float switches, light sensors and temperature sensors
 basic operating principles of common control devices
 advantages and disadvantages of common control devices
 applications for common control devices
 selecting control devices using manufacturers' catalogues for specified applications
 connection of control devices into control circuits

T8 Programmable relays encompassing:
 programmable relays - advantages over electromagnetic relay circuit control.
 typical applications of programmable relays.
 block diagram representation and basic operating principles
 input and output parameters, listing, connections and output types.
 connecting input and output devices to a programmable relay using a diagram
 basic programming of ladder circuits consisting of inputs, outputs i.e. stop-start circuit
 using the monitoring facility of the programmable relay to verify each ladder circuit operation.
 programming timers and using the monitoring facility of the programmable relay to check the values of the timer
 external devices
 implications of programming normally closed field devices
 conversion of control circuits
 installation of programmable control relays
 common faults and their symptoms

T9 Three-phase induction motor starters encompassing:
 reasons for limiting the starting current of large motors.
 requirements of the wiring rules (AS/NZS 3000) and the local supply authority service rules, with regard to starting and control of induction motors.
 DOL starter operating principles, applications and circuits
 electronic (soft) starter operating principles, applications and circuits
 connecting a DOL motor starter and testing the operation of the power and control circuits
 installation of DOL and soft starters

T10 Three-phase induction motor starters- reduced voltage encompassing:
 star-delta starter operating principles and circuits

primary resistance starter operating principles and circuits
· auto-transformer starter operating principles and circuits
 secondary resistance starter operating principles and circuits
 common applications for each starter type
 comparison of motor starters basic characteristics
 selecting the most suitable motor starter for a given situation
 connecting motor starter power and control circuits for correct operation
 measuring starting current and torque of selected motor starters
 installation of reduced voltage starters

T11 Three-phase induction motor reversal and braking encompassing:
 reversing operating principles and control circuits
 plug braking operating principles and circuits
 dynamic braking operating principles and circuits
 regenerative braking operating principles and circuits
 eddy current brakes operating principles and circuits
 mechanical brakes operating principles and circuits
 comparison of the difference braking methods used.
 typical applications for each braking method.
 connecting a circuit with a braking feature to operate a three-phase motor.
 installation of motor braking control circuits

T12 Three-phase induction motor speed control encompassing:
 pole changing operating principles and circuits
 variable frequency drives operating principles and circuits
 slip-ring motors operating principles and circuits
 installation of motor speed controllers.

EE110	Computer Applications

This unit covers the basic use of personal computers application relevant to a work function. It encompasses switching the computer on, applying user preferences, selecting basic applications, entering and retrieving information and printing files.

KS01-ED101A Basic Computer Applications
Evidence shall show an understanding of computer use basics to an extent indicated by the following aspects:
T1 Starting up
T2 Selecting application
T3 Entering information
T4 Saving
T5 Printing

EE111	Electromagnetism & Basic Electrical Machines

This unit covers determining correct operation of electromagnetic devices and related circuits and providing solutions as they apply to electrical installations and equipment. It encompasses working safely, power circuit problems solving processes, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predictable problems in electromagnetic devices and related circuits

KS01-EG101A Electromagnetic devices and circuits

Evidence shall show an understanding of electromagnetic devices and circuits to an extent indicated by the following aspects:

T1 Magnetism encompassing:

- magnetic field pattern of bar and horse-shoe magnets.
- magnets attraction and repulsion when brought in contact with each other.
- common magnetic and non-magnetic materials and groupings (diamagnetic, paramagnetic and ferromagnetic materials).
- principle of magnetic screening (shielding) and its applications.
- practical applications of magnets
- construction, operation and applications of reed switches.

T2 Electromagnetism encompassing:

- conventions representing direction of current flow in a conductor.
- magnetic field pattern around a single conductor and two adjacent conductors

carrying current.

- Using the “right hand rule” to determine the direction of magnetic field around a current carrying conductor.
- direction of force between adjacent current carrying conductors.
- effect of current, length and distance apart on the force between conductors (including forces on bus bars during fault conditions).
- magnetic field around an electromagnet.
- Using the “right hand rule” to determine the direction of magnetic field around a current carrying coil.
- magnetomotive force (m.m.f.) and its relationship to the number of turns in a coil and the current flowing in the coil.
- practical applications of electromagnets.

T3 Magnetic circuits encompassing:

- magnetic characteristic curve for various materials and identify the various regions.
- Identify the various conditions of a magnetic material from its Hysteresis loop.
- factors which determine losses in magnetic material.
- methods used to reduce electrical losses in a magnetic circuit.
- magnetic flux (definition, unit and symbol).
- reluctance as the opposition to the establishment of magnetic flux.
- permeability (definition, symbol and unit).
- difference for magnetic and non-magnetic materials in regards to reluctance and permeability.
- calculation of m.m.f., flux or reluctance given any two values.
- flux density (definition, symbol, unit and calculation).
- magnetising force (definition, symbol, unit and calculation).
- common magnetic circuit types.
- effect of an air gap in a magnetic circuit.
- terms “magnetic leakage” and “magnetic fringing”.

T4 Electromagnetic induction encompassing:

- principle of electromagnetic induction (Faraday’s law of electromagnetic induction).
- applying “Fleming’s right hand rule” to a current a carrying conductor under the influence of a magnetic field.
- calculation of induced e.m.f. in a conductor given the conductor length, flux density and velocity of the conductor.
- calculation of induced e.m.f. in a coil given the number of turns in a coil and the rate of change of flux.
- calculation of force on a conductor given the flux density of the magnetic field, length of the conductor and the current being carried by the conductor.
- Lenz’s law
- applications of electromagnetic induction

T5 Inductance encompassing:

- construction of an inductor, including a bifilar winding inductor.
- Australian Standard circuit diagram symbol for the four types of inductor.
- effect of physical parameters on the inductance of an inductor.
- common types of inductor cores.
- applications of the different types of inductors.
- definition of terms self induction, inductance and mutual inductance.
- calculation of value of self induced e.m.f. in a coil.
- mutual induction occurs between two coils.
- graphical relationship between load voltage, current and self induced e.m.f. in a single d.c. circuit having inductance.
- practical applications for the effects of self and mutual induction.
- undesirable effects of self and mutual induction.
- definition of term “time constant” and draw the characteristic curve as applied to a series circuit containing an inductor and a resistor. (LR circuit)Calculation of value of the time constant for an LR circuit given the values of the components.
- time constants required for the current in an LR circuit to reach its final value.
- determining of instantaneous values of voltage and current in an LR circuit using a universal time constant chart.

T6 Measurement Instruments encompassing:

- moving coil, moving iron, dynamometer meter movements and clamp testers.
- practical applications for moving coil, moving iron and dynamometer meter movements.
- Calculation of resistance of shunts and multipliers to extend the range of ammeters and voltmeters.
- factors to be considered in selecting meters for a particular application.
- safety category of meters and their associated applications.
- steps and procedures for the safe use, care and storage of electrical instruments.

T7 Magnetic devices encompassing:
 construction, operation and applications of relays.
 construction, operation and applications of contactors.
 magnetic methods used to extinguish the arc between opening contacts.
 construction, operation and applications of Hall Effect devices.
 operation and applications of magnetostriction equipment.
 construction, operation and application of magnetic sensing devices.

T8 Machine principles encompassing:
 basic operating principle of a generator.
 applying Fleming's right hand rule for generators.
 basic operating principle of a motor.

applying Fleming's left hand rule for motors.
· calculation of force and torque developed by a motor.

T9 Rotating machine construction, testing and maintenance encompassing:
 components of a d.c. machine.
 difference between a generator and a motor in terms of energy conversion.
 nameplate of a machine.
 using electrical equipment to make electrical measurements and comparison of readings with nameplate ratings.
 Identification of faults in a machine from electrical measurements.
 care and maintenance processes for rotating machines
 safety risks associated with using rotating machinery.

T10 Generators encompassing:
 basic operation of a d.c generator.
 calculation of generated and terminal voltage of a d.c. shunt generator
 prime movers, energy sources and energy flow used to generate electricity.
 types of d.c. generators and their applications.
 methods of excitation used for d.c generators.
 equivalent circuit for a d.c. generator.
 importance of residual magnetism for a self excited generator.
 open circuit characteristics of d.c. generators.
 load characteristics of a d.c generator.
 reversing the polarity of a d.c. generator
 Connect and test a d.c generator on no-load and load
 Identify safety risks associated with using generators.

T11 Motors encompassing:
 operation of a motor and its energy flow.
 effect of back e.m.f. in d.c. motors
 torque as the product of the force on the conductors and the radius of the armature/rotor.
 types of d.c. motors and their applications.
 circuit diagrams for the types of d.c. motors.
 equivalent circuit for the types of d.c. motors.
 calculation of power output of a motor.
 characteristics of the different types of d.c. motors.
 connection and testing a d.c. shunt motor on no-load and load
 reversing the direction of rotation of a d.c. motor.
 safety risks associated with using motors (include risks of series d.c. motors).

T12 Machine efficiency encompassing:
 losses that occur in a d.c machine.

methods used to determine the losses in a d.c. machine.
· calculation of losses and efficiency of a d.c machine.
 efficiency characteristic of a d.c. machine and the conditions for maximum efficiency.
 application of Minimum Energy Performance standards (MEPS).
 methods used to maintain high efficiency.

EE112	Alternating Current Principle

This unit covers ascertaining correct operation of single and three phase a.c. circuits and solving circuit problems as they apply to servicing, fault finding, installation and compliance work functions. It encompasses safe working practices, multiphase circuit arrangements, issues related to protection, power factor and MEN systems and solutions to circuit problems derived from calculated and measured parameters.

KS01-EG102A Alternating current power circuits
Evidence shall show an understanding of alternating currents power circuits to an extent indicated by the following aspects:
T1 Alternating Current Quantities encompassing:
 sine, cosine and tangent ratios of a right angle triangle
 Pythagoras Theorem to a right angle triangle.
 use of the CRO to measure d.c. and a.c. voltage levels
 sinusoidal voltage generated by a single turn coil rotated in a uniform magnetic fields

terms 'period', 'maximum value', 'peak-to-peak value', 'instantaneous value', 'average value', 'root-mean-square (r.m.s.) value', in relation to a sinusoidal waveform.
 calculation of the instantaneous value of induced voltage of a generated sinusoidal waveform.

 measurement of instantaneous, peak, peak-to-peak values and the period of a sinusoidal waveform.
 calculation of root-mean-square (r.m.s.) value and frequency of a sinusoidal waveform from values of peak voltage and period.

T2 Phasors Diagrams encompassing:
 purpose of phasor diagrams
 'in-phase', 'out-of-phase', 'phase angle" lead' and 'lag'.
 phase angle between two or more alternating quantities from a given sinusoidal waveform diagram.
 convention for representing voltage, current and the reference quantity in a phasor diagram.
 drawing phasor diagrams to show the relationship between two or more a.c. values of voltage and/or current.
 determination of phase relationship between two or more sinusoidal waveforms from a given diagram and measurements.

T3 Single Element a.c. circuits encompassing:
 setting up and connect a single-source resistive a.c. circuit and take voltage and current measurements to determine the resistance
 determining the voltage, current resistances from measure of given values of any tow of these qualities.
 relationship between voltage drops and current in resistive a.c. circuit
 applications of resistive a.c. circuits
 defining ‘inductive reactance’.
 calculation of inductive reactance for a given inductor and the relationship between inductive reactance and frequency.
 applying Ohm’s Law to determine voltage, current of inductive reactance in a purely inductive a.c. circuit given any two to these quantities.
 applications of inductive a.c circuits.
 calculation of capacitive reactance
 applying Ohm’s Law to determine voltage, current or capacitive reactance in a purely capacitive a.c circuit given any two of the quantities.
 applications of capacitive a.c circuits

T4 RC and RL Series a.c. circuits encompassing:
 impedance and impedance triangle.
 determining the impedance, current and voltages for a series RC circuit given the resistance, capacitance and supply voltage.
 drawing and labelling the impedance triangle for a series RC circuit

drawing phasor diagrams for a series RC circuit
· AS/NZS 3000 requirements for the installation of capacitors.
· examples of capacitive components in power circuits and systems and the effect on the phase relationship between voltage and current.
 determining the impedance, current and voltages for a series RL circuit given the resistance, inductance and supply voltage.
 drawing and labelling the impedance triangle for a series RL circuit
 drawing the equivalent circuit of a practical inductor
 Draw phasor diagrams for a series RL circuit.
 examples of inductive components in power circuits and systems and describe their effect on the phase relationship between voltage and current

T5 RLC Series a.c. circuits encompassing:
 measuring component voltages in a series RLC circuit and using a phasor diagram to determine the supply voltage and phase angle between circuit voltage and circuit current.
 determining the impedance, current and voltages for a series RLC circuit given resistance, inductance, capacitance and supply voltage.
 drawing and labelling the impedance triangle for a series RLC circuit.
 calculation of total impedance for a series RLC circuit.
 calculation of voltage drop for cables using the values for reactance and a.c. resistance from AS/NZS 3008.
 comparison of current limiting characteristics of inductors and resistors.
 practical examples of RLC series circuits

T6 Parallel a.c. Circuits encompassing:
 determining the branch currents of a parallel circuit that contain RL, RC or LC in two branches.
 using a phasor diagram to determine the total circuit current and phase angle in parallel RL, RC or LC circuits.
 determining the total circuit impedance of parallel RL, RC or LC circuits.
 measuring the branch currents in a parallel RLC circuit and use a phasor diagram to determine the total current and phase angle between circuit voltage and circuit current.
 determining the branch impedances, branch currents and phase angles voltages for a parallel RLC circuit given resistance, inductance, capacitance and supply voltage.
 calculation of impedance for a parallel RLC circuit.
 practical examples of parallel circuits.

T7 Power in an a.c. circuit encompassing:
 difference between true power, apparent power and reactive power and the units in which these quantities are measured.
 drawing the power triangle to show the relationships between true power, apparent power and reactive power
 defining the term "power factor" and phase angle.

methods used to measure single phase power, energy and demand.

T8 Power Factor Improvement encompassing:
 effects of low power factor.
 requirements for power factor improvement.
 methods used to improve low power factor of an installation.
 local supply authority and AS/NZS 3000 wiring rules requirements regarding the power factor of an installation and power factor improvement equipment.
 methods used to measure single phase power factor.
 using manufacturers catalogues to select power factor equipment for a particular installation

T9 Harmonics and Resonance Effect in a.c. Systems encompassing:
 term "harmonic" in relation to the sinusoidal waveform of an a.c. power system.
 sources in a.c. systems that produce harmonics.

 problems that may arise in a.c. circuits as a result of harmonics and how these are overcome.
 methods and test equipment used to test for harmonics
 methods used to reduce harmonics in a.c. power system
 conditions in a series a.c. circuit that produce resonance.
 dangers of series resonance circuits
 conditions in a parallel a.c. circuit that produce resonance.
 dangers of parallel resonance circuits
 AS/NZS3000 and the local supply authority requirements concerning harmonics and resonance effect in a.c. power systems.

T10 Three Phase Systems encompassing:
 features of a multiphase system.
 comparison of voltages generated by single and multiphase alternators.
 reasons for the adoption of three phases for power systems.
 how three phases is generated in a single alternator.
 Calculation of r.m.s. value of voltage generated in each phase given the maximum value.
 relationship between the phase voltages generated in a three phase alternator and the conventions for identifying each.
 term "phase sequence" (also, referred to as "phase rotation").
 determining the phase sequence of a three phase supply

T11 Three phase star-connections encompassing:
 connecting a three phase star-connection load.
 phase relationship between line and phase voltages and line and phase currents of a star-connected system.
 determining the r.m.s. value of line and phase voltage given any one of these quantities.

determining the r.m.s. value of line and phase current given any one of these quantities.
 terms "balanced load" and "unbalanced load".
 effect of a reversed phase winding of a star connected alternator.
 example of balanced and unbalanced loads in typical power systems.

T12 Three phase four wire systems encompassing:
 purpose of the neutral conductor in a three phase four wire systems.
 determining the effects of an high impedance in the neutral conductor of a three phase four wire system supplying an unbalanced load where MEN earthing is employed.
 determining the value and phase relationship of neutral current in an unbalanced three phase four wire systems given line currents and power factors.
 AS/NZS 3000 requirements regarding neutral conductors.
 AS/NZS 3008.1.1 method for determining voltage drop in unbalanced three phase circuits

T13 Three phase delta-connections and Interconnected systems encompassing:
 connecting three phase delta loads.
 phase relationship between line and phase voltages and line and phase currents of a delta-connected system.
 determining the r.m.s. value of line and phase voltage given any one of these quantities.
 determining the r.m.s. value of line and phase current given any one of these quantities.
 limitations and uses of open delta connections
 effect of a reversed phase winding of a delta connected transformer
 example of loads in typical power systems.
 drawing the typical combinations of three phase interconnected systems using star-connections and a delta-connection.
 relationship between line and phase voltages and line and phase currents in the typical interconnected systems using star-connections and delta-connections.

T14 Energy and power requirements of a.c. systems encompassing:
 purposes for measuring power, energy, power factor and maximum demand of a.c. power systems and loads.
 difference between true power, apparent power and reactive power and the units in which these quantities are measured in a three phase system.
 drawing the power triangle to show the relationships between true power, apparent power and reactive power in a three phase system.
 methods used to measure three phase power , energy, power factor and demand.
 determining how the power factor of a three phase installation can be improved.
 using manufacturers catalogues to select measurement equipment for a particular installation

T15 Fault Loop Impedance encompassing:
 term fault loop impedance of a a.c. power system
 determining fault loop impedance using resistance and reactance values from AS/NZS

3008.1.1
 measuring fault loop impedance of typical circuits
 procedures for testing fault loop impedance

EE113	Electrical Fundamental

This unit covers the application of calculations required to solve electrotechnical engineering problems. It encompasses working safely, applying problem solving techniques, using a range of mathematical processes and techniques to providing solutions to electrotechnical problems, and justifying such solutions.
Note.
Typical electrotechnical problems are those encountered in meeting requirements in meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions

This unit covers ascertaining correct operation of single and three phase machines and solving machine problems as they apply to servicing, fault finding, installation and compliance work functions. It encompasses safe working practices, machine connections circuit arrangements, issues related to machine operation, characteristics and protection and solutions to machine problems derived from calculated and measured parameters.

Evidence shall show an understanding of electrotechnical principles to an extent indicated by the following aspects:

T1 Resistance encompassing:

- relationship between voltage, current and resistance and the power dissipated in a circuit
- value of voltage, current and resistance in a circuit given any two of these quantities
- the factors of length, cross-sectional area and material effect the resistance of conductors
- effects of temperature change on the resistance of various conducting materials
- features of fixed and variable resistor types and typical applications
- characteristics of temperature, voltage and light dependent resistors and typical applications of each

T2 Series circuits encompassing:

- measurement of resistance, voltage and current values in a single source series circuit
- the voltage, current, resistances or power dissipated from measured or given values of any two of these quantities
- relationship between the voltage drops around a circuit and the applied voltage

T3 Parallel circuits encompassing:

- measurement of resistance, voltage and current values in a single-source parallel circuit
- the voltage, current, resistance or power dissipated from measured or given values of any of these quantities
- relationship between currents entering a junction and currents leaving a junction

T4 Series/parallel circuits encompassing:

- measurement of resistance, voltage and current values in a single-source series / parallel circuit
- the voltage, current, resistances or power dissipated from measured or given values of any two of these quantities

T5 Measurement of electrical quantities encompassing:

- operating characteristics of analogue and digital meters
- selecting an appropriate meter in terms of units to be measured, range, loading effect and accuracy for a given application

T6 Capacitance/Capacitors encompassing:

- definition of capacitance and explain how a capacitor is charged
- the units by which capacitance is measured
- relationship between capacitance, voltage and charge
- behaviour of a series d.c. circuit containing resistance and capacitance components
- factors which determine the capacitance of a capacitor and explain how these factors are present in all circuits to some extent

T7 Magnetism and electromagnetism encompassing:

- field patterns around given permanent magnets
- magnetic field patterns around a straight current carrying conductor and a solenoid
- direction in which the magnetic field around a straight current carrying conductor

T8 Electromagnetic induction encompassing:

- factors required to induce an emf in a conductor

T9 Sinusoidal alternating voltage and current encompassing:

- how a sinusoidal voltage is generated in a single turn coil rotated in a uniform magnetic field
- definition of the terms ‘period’, ‘maximum value’, ‘peak-to-peak value’, ‘instantaneous value’, ‘average value’ and ‘root-mean-square (r.m.s.) value’ in relation to a sinusoidal waveform
- instantaneous value of induced voltage of a generated sinusoidal waveform
- root-mean-square (r.m.s.) value and frequency of a sinusoidal waveform from values of peak voltage and period

T10 Test equipment encompassing:

- operating principles of a CRO including block diagram of functional areas
- set up, calibration and use of an oscilloscope to measure d.c and a.c. voltages and frequency
- measurement of the instantaneous, peak, peak-to-peak values and the period of sinusoidal and other common waveforms provided by a signal generator
- calibration and limitation of CRO probes
- use of signal generator as a voltage source

T11 Phase relationships in a.c. circuits encompassing:

- phasor representation of graphical waveforms
- ‘in-phase’, ‘out-of-phase’, ‘phase angle’, ‘lead’, and ‘lag’
- convention for representing voltage, current and the reference quantity in a phasor diagram
- phasor diagrams to show the relationship between two or more a.c. values of voltage and/or current

T12 Single-source resistive a.c. circuits of various frequencies encompassing:

single-source a.c. circuit and taking resistance, voltage and current measurements

- voltage, current, resistances or power dissipated from measured or given values of any two of these quantities

T13 Inductance in a.c. circuits encompassing:

- concept of inductance, self-inductance and mutual inductance. (in terms of storage of magnetic energy)
- factors affecting inductance and how the unit of inductance is derived
- value of induced voltage in a given circuit
- how a series d.c. circuit containing resistance and inductance behaves
- ‘inductive reactance’
- inductive reactance of a given inductor and show the relationship between inductive reactance and frequency
- applying Ohm’s law to determine voltage, current or inductive reactance in a purely inductive a.c. circuit given any two of these quantities
- examples of inductive components in circuits and systems and describe their effect on the phase relationship between voltage and current

T14 Capacitance in a.c. circuits encompassing:
 capacitive reactance of a given capacitor and the relationship between capacitive reactance and frequency
 applying Ohm's law to determine voltage, current or capacitive reactance in a purely capacitive a.c. circuit given any two of these quantities
 examples of capacitive components in electronic circuits and systems and describe their effect on the phase relationship between voltage and current

T15 Impedance in a.c. circuits encompassing:
 definition of 'impedance'
 impedance of series, parallel and series-parallel circuits and draw diagrams showing the relationship between resistive, inductive and capacitive components
 single-source a.c. circuit with resistance, voltage and current measurements
 determination of the voltage, current or impedance from measured or given values of any two of these quantities
 using phasor diagrams to solve problems and show the relationship between voltages and currents in a.c. circuits

EE114	Electrical Power Principle

KS01-EG006A Single and three-phase transformers
Evidence shall show an understanding of single and three phase transformers to an extent indicated by the following aspects:
T1 Transformer construction encompassing:
 types of lamination style and core construction used in single-phase, three phase, double wound, auto transformers and instrument transformers.
 identification of different winding styles/types used in transformers.
 methods used to insulate low and high voltage transformers.
 construction of transformer tanks for distribution transformers.
 transformer auxiliary equipment. (Bushings, surge-diverters, tap-changers, hot oil & winding indicators, breather, Buchholz relay and conservator).
 function of transformer auxiliary equipment.
 types of information stated on transformer nameplates.
 application of transformers.
 performing basic insulation resistance, continuity and winding identification tests.

T2 Transformer operation encompassing:
 principles of mutual induction of a transformer.
 factors that determine the induced voltage in a transformer winding.
 determining the value of a transformers secondary voltage and current given one winding's electrical details and turns ratio.
 identification of voltage and current components of a phasor diagram for a transformer on no-load.
 principles of power transferred from the primary to secondary when a load is connected using a phasor diagram neglecting impedance drops.
 selecting transformers for specific application/s.
 safety features specified in AS/NZS3000 with respect to transformers and isolating transformers.

T3 Transformer losses, efficiency and cooling encompassing:
 power losses which occur in a transformer.
 tests which allow the power losses of a transformer to be determine.
 determination of transformer losses and efficiency using test results.

relationship between transformer cooling and rating.
 methods used for natural and forced cooling of transformers.
 properties of transformer oil.
 tests conducted on transformer oil.

T4 Transformer voltage regulation and percent impedance encompassing:
 voltage regulation as applicable to a transformer.
 reasons for voltage variation in the output of a transformer.
 determine the voltage regulation of a transformer from voltage and percentage impedance values.
 percentage impedance as applied to transformers.
 determine the percent impedance by using test results.
 determine percent impedance of a transformer by calculation.

T5 Parallel operation of transformers and transformer auxiliary equipment encompassing:
 determine polarity markings for an unidentified single phase double wound transformer.
 need for parallel operation of transformers.
 conditions/restrictions required before two transformers can be connected in parallel.
 connecting transformers in parallel to supply a single load (loading on transformers operating in parallel).
 the consequences/effect of an incorrect connection.

T6 Auto-transformers and instrument transformers encompassing:
 identification of auto-transformers, voltage transformers and current transformers from their winding diagrams.
 determining voltage and current in the windings of an auto-transformer by calculation.
 advantages and disadvantages of an auto-transformer.
 AS/NZS3000 requirements with respect to transformers.
 construction of voltage transformers.
 ratings of voltage transformers.
 construction of current transformers.
 ratings of current transformers.
 precautionary measures taken to connect and disconnect instrument transformers.
 connection diagrams for instrument transformers.
 applications for auto-transformers and instrument transformers.

EE115	Basic Analogue & Digital Electronics

Part 1 Analogue

This competency standard unit covers developing engineering solutions to solve problems with analogue electronics. It encompasses working safely, apply extensive knowledge of analogue electronics circuit and device operation and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives.
Note.
Typical analogue electronic problems are those encountered in meeting performance requirements and compliance standards, revising analogue electronics operating parameters and dealing with analogue electronic malfunctions

KS01-EH145A Analogue electronic circuits and systems
Evidence shall show an understanding of analogue electronic circuits, applying safe working practices and relevant Standards, Codes and Regulations to an extent indicated by the following aspects:
Single-stage analogue electronics
T1. Understanding of differential amplifiers using discrete components (transistors) of suitable characteristics to meet system objective
- differential gain, common mode rejection ratio and the required CMRR
- variable gain input stage

T2. Operational amplifier circuits
- use of d.c. offset
- operation of single-supply inverting and non-inverting amplifiers employing DC offset bias at the input and blocking capacitors
- operation of a high input resistance unity gain
- areas of use for single-supply amplifiers.

T3. Comparator circuits (open loop, limited swing and hysteresis) using operational amplifiers:
- ideal op-amp comparator
- typical uses of the comparator.
- comparators with limited (i) negative swing and (ii) both positive negative swing
- hysteresis comparator with positive resistor divider feedback and calculate the input switching voltages.
- desirable properties of an operational amplifier for use as comparator and the characteristics of comparator op amps.

T4. Amplifiers with given piecewise linear transfer characteristics
T5. Operation and building precision of half-wave and fullwave rectifiers
- precision two-diode half-wave and full-wave rectifier
- typical applications of precision rectifiers.

T6. Oscillators
- Operation of oscillators
- Purpose of oscillators
- Conditions for sustained oscillation
- Operation of phase shift oscillators
- The operation and characteristics of a Colpitts oscillator
- Conditions that cause instability in amplifier circuits

Advanced power amplifiers
- Analysing the performance of power amplifiers
- Minimum power, voltage and current rating of an output transistor.
- Aspects of heat transfer related to heat sinking.
- Common forms of distortion encountered in power amplifiers. (eg. Total harmonic distortion)
- Techniques for overcoming common forms of distortion.

T9. (is the number correct?)Classes of power amplifiers and indicate typical maximum efficiencies for each class
- conduction, angle, output power and efficiency of a power amp.
- typical and/or maximum efficiencies of each class of power Amp.
- d.c and/or a.c load line,
- output power and efficiency of a large signal amplifier

T10. Operation of each class and type of power amplifier circuit
- load line operation.
- Class A – direct, RC, transformer coupled. Class B – Complementary symmetry, drivers, single supply/duel supply. Class C and Class D.
- measure the characteristics of a fully integrated operational power Amplifiers.

T11. Active filters
- frequency response of low-pass, high-pass, low-Q band-pass, high-Q bandpass, notch and all-pass filters and define pass-band, stop-band and rate of roll-off.
- main features in the amplitude and phase plots of Butterworth, Chebyshev, Cauer-Elliptic and Bessel filter responses.
- pros and cons of active and passive filters.
- non-unity gain Sallen-Key low-pass filter.
- Types of active filters available in IC form - Variable filter, Switched Capacitor Filters and digital (sampled data) filters.
- Low-Q (i.e. cascade of lowpass and high-pass) and/or narrow bandpass filters

Part 2 Digital

This unit covers determining correct operation of digital sub-systems. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predictable problems in digital components circuits.

KS01-EH112A Digital sub-system

Evidence shall show an understanding of digital sub-system troubleshooting, applying safe working practices and relevant Standards, Codes and Regulations to an extent indicated by the following aspects:

T1. Analogue and digital signals
- Comparison between analogue and digital signals
- Observing digital and analogue waveforms

T2. Numbering systems
- The binary number system
- The hexadecimal number system
- Binary addition and subtraction

T3. Numbering systems - conversions
- Conversion between numbering systems
- Binary Coded Decimal (BCD)
- Gray code
- The American Standard Code for Information Interchange (ASCII)
- Unicode

T4. Combinational logic circuits
- Precautions when handling electronic devices due to electrostatic discharge (ESD)
- Truth tables
- Basic operation and characteristics of logic gates

Logic probes
· Verification of operation of logic circuits

T5. Digital displays
- Seven segment LED displays
- Drive requirements
- Current limiting
- Multiplexed displays
- Seven segment Decoders
- Liquid Crystal Displays (LCD)
- Emerging display technologies
- Verification of seven segment display circuit
- Interfacing with logic circuits

T6. Digital subsystem building blocks
- Encoders and Decoders
- Multiplexers and Demultiplexers
- Timing diagrams
- Flip flops, Latches and registers
- Ripple counters
- MOD counters
- Synchronous counters Multi-vibrators
- Clocks
- Verification and operation (eg. PLDs, ICs)

T7. Digital fault finding
- General fault finding principles
- Common digital faults
- Digital test equipment
- Digital test equipment (eg. Logic probes, Digital Oscilloscopes, digital trainers)

T8. Logic families and specifications
- Input and output voltage characteristics
- Comparison of logic families
- Unit load
- Noise margin
- Interfacing different logic families
- Tri-state logic devices

Overview and applications of A/D converter and D/A converter

EE116	Process Control System

This unit covers solving problems in industrial control systems. The unit encompasses safe working practices, interpreting process and circuit diagrams, applying knowledge of industry controls to problem solving techniques, safety and functional testing and completing the necessary documentation.

Note.

Typical basic industrial control system problems are those encountered in meeting performance requirements and compliance standards, revising control operating parameters and dealing with control malfunctions.

KS01-EI120A **Industrial control systems**

Evidence shall show an understanding of industrial control systems to an extent indicated by the following aspects:

Control amplifiers encompassing:
- Introduction
- Amplifier Operation
- Operational Amplifiers
- Operational Amplifier Configurations

Industrial transducers encompassing:
 Introduction
 SI Units
 Forms of Energy
 Transducer Terminology
 Temperature Measurement
 Force Measurement
 Speed Measurement

SKILLS AND KNOWLEDGE

 Positional Measurement

Industrial final control elements encompassing:
 Introduction
 Electromagnetic Devices
 Valves
 Solid State Switching Devices

Industrial control systems encompassing:
 Automatic Control
 Open Loop Control
 Closed Loop Control
 Control System Terminology
 Control System Evaluation
 Two Position Control
 Proportional Control (P)
 Proportional + Integral Control (P+I)
 Proportional + Derivative Control (P+D)
 Proportional + Integral + Derivative Control (P+I+D)

Industrial control loops and control signals encompassing:
 Introduction
 Control Loops
 Converters (D to A and A to D)
 Multiplexing

EE117	Solar Electrical System

This unit covers providing known solutions to predictable problems in photovoltaic energy apparatus and systems operated at ELV and LV. It encompasses working safely, problem solving procedures, including the use of basic voltage, current and resistance measuring devices, providing known solutions to predictable circuit problems.

KS01-EK125A **Photovoltaic power systems**

Evidence shall show an understanding of photovoltaic power systems to an extent indicated by the following aspects:
T1 Daily irradiation encompassing:
 definition of the terms: declination angle, reflectance, sunshine hours, extraterrestrial irradiation, Latitude, direct and diffuse radiation, azimuth and altitude angles, radiance, solar window, tilt angle, solstice, equinox
 units and symbols for irradiation and irradiance
 interpretation of solar radiation data tables and contour maps.
 measuring solar irradiance with a solarimeter.

how radiation varies throughout the year on the surface of a fixed collector.
 determining, using field measurements and a sun path diagram, the times and dates when a PV array will be shaded by obstacles at a particular site.
 calculation of the daily average irradiation on a horizontal plane given extraterrestrial irradiation, location constants and sunshine hour data.
 calculation of the monthly mean daily irradiation falling on a PV array for each month of the year, adjusted for the effects of shading, using irradiance and irradiation data tables and a sun path diagram and/or appropriate software.
 selection of an appropriate tilt angle for fixed and seasonally-adjustable PV arrays at an given latitude

T2 Photovoltaic modules encompassing:
 definition of the terms: cell, module, array, mono-crystalline, poly-crystalline, amorphous, band gap energy, semi-conductor
 diagram of a basic crystalline silicon PV cell, showing its physical structure, with at least five major features labelled
 major steps in the production of PV modules based on bulk silicon cells, in comparison with the production of thin film PV modules.
 basic physical principles of PV cell operation for the main types of commercially available PV modules.
 efficiency, spectral response, cost and typical applications of the main types of commercially available PV modules.
 new photovoltaic technologies currently being developed towards commercialisation, and their major features.
 mechanical and electrical features necessary for the long life of a PV module under a wide range of operating conditions.

T3 Module characteristics encompassing:
 definition of the terms: I-V curve, fill factor, operating point, maximum power point (MPP), cell temperature co-efficient, nominal operating cell temperature (NOCT), current, voltage and power output co-efficient.
 equivalent circuit for a PV cell, labelling each of the elements and the polarity of the terminals.
 family of I-V curves for a PV module, labelling major points and showing the effects of variation in irradiance and variation in cell temperature.

jor ratings of a PV module from manufacturer's information or nameplate data.
 determination of the operating point of a PV module with a resistive load, a constant voltage source or any other load with known I-V characteristics, using the load line method.
 configuration of a typical PV array, including the function, placement and ratings of blocking and bypass diodes.
 the effect of partial shading of a PV module or array, the impact of bypass diodes and the significance of their configuration on output current in typical operating conditions.
 calculation of the power at MPP, and the power under typical battery charging conditions, of a PV module, given irradiance and ambient air temperature.
 calculation of the daily energy output of a PV array in accordance with AS 4509.2, and by using "rule of thumb" de-rating factors.
 the scope and content of Australian or international standards relevant to the performance of PV modules.
 the electrical characteristics of a PV module according to relevant Australian or International standards, using an outdoor test method.

EE118	Electrical Energy Supply System

2.6.21

a) Generation
primary energy sources
power stations
power station output
acts and legislation relating to generation
renewable energy sources and techniques

b) Transmission
system requirements
principal components of a power system
voltage levels
grid systems
acts/legislation relating to transmission
future trends

c) Distribution
high voltage distribution systems
medium/low voltage distribution systems
radial feeders
parallel feeders
ring main feeders
acts/legislation relating to distribution

d) Substations

purpose
location
layout

e) Overhead and underground systems
relative merits
applications
planning
installation

f) Power distribution system electrical characteristics
transmission and distribution systems
inductance, capacitance and resistance

g) Voltage problems in a power distribution system
low voltage
unbalanced voltages
voltage rises
h) Voltage regulation
autotransformers with OLTC
transformers with OLTC
static capacitors
load control

i) Control of OLTC
regulation relays
control circuits
line drop compensation

j) Power distribution system faults
type/classification of fault
typical causes/effects of faults
three-phase symmetrical fault levels
fault level limitation

k) Voltage surges in a power distribution system
lightning surges
switching surges
typical surge levels
surge impedance, typical values
significance of the system surge impedance.

l) Metering and metered quantities
purpose
energy
maximum demand
accuracy classes for metering systems

m) Energy and demand meters
construction
operation
adjustments
testing

n) Metering circuits
direct metering
instrument transformer metering

o) Electronic metering systems and recording meters
types
applications
connections

p) Load control
purpose
methods
.6.22.1

a) Protection fundamentals encompassing:
purpose of protection
features of a protection scheme

b) Instrument transformers for protection encompassing:

Operating principles
Applications of current transformers
Applications of voltage transformers

c) Feeder protection encompassing:
fuse protection
overcurrent & earth fault
sensitive earth fault
unit schemes
distance protection
trip/close sequences for feeders
recloser/sectionaliser systems

d) Transformer protection encompassing:
overheating protection
overcurrent protection
restricted earth fault protection
differential protection
oil and gas devices

e) Busbar protection encompassing:
types of fault
requirements of busbar protection
system protection
frame-earth protection

f) Surge protection encompassing:
voltage surges (revision)
surge diverters
arcing horns

EE119	Electrical Risk Assessment

This unit covers the mandatory requirements of persons in a supervisory role to implement and monitor an organisation's occupational health and safety policies, procedures and programs. It encompasses understanding an organisation's OHS obligations, providing safety information to staff, implementing and monitoring participative arrangements, safety procedures and training and maintaining safety records.

KS01-EE117A Energy sector Occupational Health and Safety, supervisory responsibilities
Evidence shall show an understanding of OHS enterprise responsibilities to an extent indicated by the following aspects:
T1 Provisions of relevant occupational health and safety legislation
T2 Principles and practice of effective occupational health and safety management
T3 Workplace hazards, range and selection of control measures
T4 Organisational health and safety management systems and policies and procedures needed for legislative compliance
T5 Impact of characteristics and composition of the workforce on occupational health and safety management
T6 Relevance of occupational health and safety management to other organisational management policies, procedures and systems.
T7 Analysis of entire work environment and judge occupational health and safety interventions
T8 Analysis of relevant workplace data
T9 Ability to assess resources needed for risk control

EE120	Electrical Contracting & Specification

This unit covers developing requirement to be incorporated into the writing of specifications for electrical engineering projects. It encompasses determining the safety requirements to be met, establishing client expectations, ensuring cost effective solutions are pursued and documenting design and technical requirements.

KS01-EE071B Electrical engineering specification development
Evidence shall show an understanding of electrical engineering specification writing to an extent indicated by the following aspects:
T1 Electrical engineering specifications encompassing:
- Purpose and nature of specification
- Performance based specifications
- Prescriptive specifications
- Acceptable evidence of compliance
- Additional service required with the supply of equipment

T2 Dealing with suppliers and manufacturer's encompassing:
- Documenting specification
- Customer/client relations encompassing:
- Importance of customer/client relations
- Interpersonal skills that enhance customer/client
- Dispute resolution
- Customer/client relations strategies

T3 Using basic computers functions encompassing:
- Starting up
- Selecting application

 Entering information
 Saving
 Printing

T4 Research skills encompassing:
 Terminology - Terminology used in a research workplace; Terminology used in research-specific literature and the like.
 Theory – why conduct research - The history of research; past research successes; past research failures; Research Protocols; Research practices and the like.
 The research environment - The research work environment; Standard research practices; Industrial, legal, ethical, political and market environment considerations; Legislation and regulation; Contractual obligations of all parties

and the like.
 Planning to conduct research - Concept development and/or research brief analysis; Research objectives; Research deliverables; Research project plan; Literature reviews; Methodology development, including; Experimental design, Technology selection, Information Management system selection and the like
 Clients - identifying client viewpoints and stake in project; Identifying client requirements and parameters; Determining research budgets, timelines, milestones and quality attributes with clients.
 Research, Development and Commercialisation - Research and Development goals versus Commercialisation goals and realities; Research and Development to inspire a commercialisation process

EE121	Electronics Power Control Device

This unit covers solving problems with electronic aspects of single phase power control devices and circuits. The unit encompasses safe working practices, interpreting diagrams, applying knowledge of electronic power control devices and their application, using effective problem solving techniques, safety and functional testing and reporting work activities and outcomes.
Note.
Typical single phase electronic power control problems are those encountered in meeting performance requirements and compliance standards, revising control operating parameters and dealing with control malfunctions.

KS01-EI148A **Single phase electronic power control circuit**

Evidence shall show an understanding of single phase electronic power control circuit to an extent indicated by the following aspects:
Introduction to Power Control
 Advantages and benefits of power control
 Need for power control and typical applications
 Power control methods
 Types of solid state switches
 Block diagram of a power converter
 Power control terminology

Modes of operation.

Single Phase Power Rectifiers
 Single Phase Rectifier Circuit Configurations
 Resistive/Inductive Loads
 Output Voltages/Waveforms
 Ripple Voltage/Frequency
 Peak Reverse Voltages
 Free Wheeling Diodes

Silicon Controlled Rectifiers (SCRs)
 Construction and Symbol
 Basic Operating Principles
 Characteristics
 Gate Requirements
 Commutation
 Electrical Ratings
 Testing SCRs
 Applications.

Triacs and Gate Turn Off (GTO) Thyristors
 Triac Construction and Symbol
 Triac Basic Operating Principles
 Triac Characteristics
 Triac Triggering Modes
 Triac Electrical Ratings
 Triac Testing
 GTO Construction and Symbol
 GTO Basic Operating Principles
 GTO Characteristics
 GTO Electrical Ratings
 Applications for Triac and GTOs

Power Transistors (BJTs)
 BJT Construction and Symbol
 BJT Basic Operating Principles
 BJT Characteristics
 BJT Electrical Ratings
 BJT Testing
 Applications for BJTs

Power Field Effect Transistors (FET)
 Types of FETs used for power control
 Power FETs Construction and Symbol
 FET Basic Operating Principles and Characteristics
 IGBT Basic Operating Principles and Characteristics
 Power FET Electrical Ratings

Power FET Testing
 Applications for Power FETs

Triggering Devices
Diac:
 construction and symbol
 operating principles
 breakover voltage.
 Unijunction transistors (UJTs)
 construction and symbol
 operating principles
 intrinsic standoff ratio and peak point voltage

Programmable Unijunction Transistors (PUTs)
 construction and symbol
 operating principles
 programmable standoff ratio
 peak point voltage

Triggering Circuits
 R-C Time Constant Circuits
 Diac Trigger Circuit Operation
 UJT Relaxation Oscillator Circuit Operation
 PUT Relaxation Oscillator Circuit

Half Wave Controlled Rectification

Phase shift control
 Controlled rectifiers
 Controlled rectifier power output control
 Single Phase Half-Wave Controlled Rectifier
 Circuit configuration
 circuit operation
 waveforms
 load voltage
 applications and limitations
 Problems Associated with Phase Shift Control

Full Wave Controlled Bridge Rectification
 Single phase full-wave controlled bridge rectifier circuit
 Output voltage
 Output waveforms
 Applications and limitations
 Advantages and disadvantages

Fully Controlled Bridge Rectification
 Single phase fully controlled rectifier bridge circuit
 Output voltage
 Output waveforms
 Applications and limitations
 Advantages and disadvantages

Single-Phase a.c. Voltage Control
 Phase control of a.c. power
 Circuit configurations - half and full control circuits
 Triggering circuits
 Circuit performance and operation on resistive and inductive loads
 Output voltage and waveform, determination of output voltage using circuit characteristics
 Range of control with inductive loads
 Triggering problems associated with inductive loads.
 Applications and limitations

Zero Voltage Switching (ZVS)
 Operating principles
 Circuit configuration – including trigger circuits

Circuit operation and waveforms – resistive loads only
 Relationship between load power and conduction time
 Solid state relays; types and ratings
 Applications and limitations

Fault Finding of Power Control Circuits
 Fault finding procedures
 Typical faults – power and trigger circuits
 Characteristics displayed by common faults
 Comparison of test data with expected data (voltage/current waveforms)
 Location and replacement of faulty components

EE201	Engineering Mathematics

This unit covers the application of computational processes to solve engineering problems. It encompasses working safely, applying problem solving techniques, using a range of mathematical processes, providing solutions to electrical/electronics engineering problems and justifying such solutions.
Note. Typical engineering problems are those encountered in meeting requirements in a design brief, meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions

KS01-EE126A Electrotechnology engineering maths
Evidence shall show an understanding of electrotechnology engineering maths to an extent indicated by the following aspects:
T1 Rational, irrational numbers and basic algebra
 simplification of expressions involving square roots and cube roots
 scientific and engineering notation
 evaluation of expressions using a calculator
 convert units of physical quantities using unity brackets
 substitute given values into formulae to find physical quantities
 manipulate algebraic expressions using mathematical operations in their correct order, the laws of indices, expansion of brackets and collecting like terms
T2 Algebraic manipulation
 Factorise algebraic expressions using common factors
 Factorise quadratic expressions using trial and error on the factors of the coefficients
 Simplify algebraic fractions using common denominators and cancelling
 Solve simple one variable equations including algebraic fractions
 Find the quotient and remainder given a linear divisor.
 Transpose formulae to find a required variable.
T3 Laws of indices
 Conversion between decimal notation, scientific notation and engineering notation
 Laws of indices: positive /negative values, multiplication/division, fractional values, index equals zero
 Logarithmic laws: multiply/divide
 solution of exponential equations using logarithms, substitution and solution of relevant formulae involving exponents or logarithms
 Graphs of exponential functions, 10x and ex and the inverses log10(x) and loge(x) functions on log-linear graphs
 Convert numbers into scientific and engineering notation using the laws of indices
 Manipulate and simplify arithmetic and algebraic expressions using the laws of indices and logarithms

 Express logarithms as indices.
 Perform logarithmic operations.
 Determine logarithms and antilogarithms to base 10, using a scientific calculator.
 Determine logarithms and antilogarithms to base e, using a scientific calculator.
 Convert logarithmic values from base 10 to base e and vice versa.
 Sketch given functions on log-linear graphs

T4 Estimations, errors and approximations

 Errors in measurement
 Maximum probable error
 Show awareness of errors in measurement and of giving results in appropriate number of significant figures
 Use estimations and approximations to check the reasonableness of results.

T5 Plane figures – triangles and basic trigonometry

 Angles in a triangle
 Isosceles and equilateral triangles
 Congruent triangles
 Similar triangles
 Pythagoras' theorem
 Area of triangles
 Basic trigonometry functions
 Degrees, radians
 The ratios: sin, cos, tan, cosec, sec, cot.
 Inverse trig functions
 Sine and cosine rules

T6 Plane figures - quadrilaterals and circles

 Types and properties of quadrilaterals
 Areas and perimeters of regular quadrilaterals
 Lengths of arcs
 Angles in a circle - degrees
 Angles in a circle - radians
 Lengths of chord segments
 Tangents to circles
 Circumference and area of circles
 Names and characteristics of common polygons

T7 Graphs of Trigonometric functions

 Graph trigonometric functions and solve trigonometric equations.
 Simplify trigonometric expressions using trigonometric identities
 Convert angular measure in degrees to radians and vice versa
 Graph trigonometric functions including graphs of y = sin x and y = cos x
 Using vocational applications of current or voltage as a function of time, consider changes in amplitude, consider changes in frequency.
 Examine relationships of frequency, period and angular velocity.
 Sketch graphs of the form f(t) = a sin φt and f(t) = a cos φt, where a is the peak voltage or current, and φ is the angular velocity
 Solve graphically equations of the form f(t) = a sin φt and f(t) = a cos φt

Show a positive or negative angle on the unit circle.

· Use symmetry properties to find trigonometric ratios for angles greater than ð/2.
· Solve simple vocational problems relating period, frequency and angular velocity.

T8 Graphs of linear functions

 The number plane
 Gradient and x and y intercepts of a straight line
 Equation of a straight line length and mid-point of a straight line segment
 Function notation

T9 Simultaneous equations

 Graphical solutions
 Substitution
 Elimination
 Solve 2 linear simultaneous equations both algebraically and graphically.

T10 Matrices

 Perform the basic operations on matrices up to 3 x 3
 Manipulate matrix equations and expressions
 Recognise inverse and identity matrices up to 3 x 3 and use to solve systems of linear equations.
 Find determinants up to 3 x 3 and use to solve systems of linear equations.
 Solve problems involving more than two simultaneous equations.
 State the limitations of graphical methods of solution.
 Distinguish between a matrix and an array.
 Describe the null, diagonal and unit matrix
 Describe and identify a singular/non-singular matrix

T11 Quadratic functions

 Graphs of quadratic functions represented by parabolas and the significance of the leading coefficient.
 Graph quadratic functions and solve quadratic equations.
 Sketch and interpret the graphs of quadratic functions showing the significance of the leading coefficient and the zeros
 Solve quadratic equations by factoring or using quadratic formula
 Solve simultaneously linear and quadratic equations algebraically and geometrically
 Interpret verbally formulated problems involving quadratic and linear equations and solve.

T12 Exponential and logarithmic functions

 Transform non-linear functions (including exponential) to linear forms and plot data.
 Draw curves of best fit, interpolate data and estimate constants in suggested relationships.

Interpret verbally formulated problems involving growth and decay, and solve.

· Graph exponential and logarithmic functions and solve exponential and logarithmic equations.
 Sketch the graphs of simple exponential and logarithmic functions showing behaviour for large and small values

T13 Vectors and Phasors
- The vector as an expression of magnitude and direction
- The vector sum of x and y values in terms of magnitude and direction
- Rectangular components of vectors in the form $x = r \cos \theta$ and $y = r \sin \theta$
- Rectangular-polar and polar-rectangular conversion
- Vector addition and subtraction
- Express rectangular components of vectors in the form $x = r \cos \theta$ and $y = r \sin \theta$

T14 Complex numbers
- Definitions and notation of complex numbers
- Complex numbers as vectors on an Argand diagram
- laws of complex numbers and apply the laws in suitable calculations.
- Plot complex numbers on the Argand plane.
- Express vectors as complex numbers and perform suitable calculations.
- Calculate the conjugate of a complex number.
- Using a calculator for rectangular-polar and polar-rectangular conversions.

EE202	Electrical Circuits

This unit covers determining correct operation of complex multiple path circuits and providing engineering solutions as they apply to various branches of electrotechnology work functions. It encompasses working safely, problem solving procedures, including using electrical measuring devices, applying appropriate circuit theorems and providing solutions derived from measurements and calculations and justification for such solutions.

KS01-EE125A Circuit analysis
Evidence shall show an understanding of circuit analysis to an extent indicated by the following aspects:
T1 Voltage/Current Sources and Kirchhoff's Law for d.c. Linear Circuits encompassing:
- calculating the effect of the internal resistance on terminal voltage and current delivered for practical voltage sources and current sources
- calculating current and voltage in any d.c. network of up to two loops and three sources.
- Kirchhoff's Law using a circuit simulation program.
- function and operation of an electronics circuit simulation program.
- using electronics circuit simulation program.

T2 Superposition Principles for d.c. Linear Circuits encompassing:
- d.c. networks (two loops, three sources)
- using simulation programs
- calculating current and voltage in any d.c. network of up to two loops and three sources.
- Superposition theorem using a circuit simulation program.

T3 Mesh and Nodal Analysis for d.c. Linear Circuits encompassing:
- writing mesh equations for d.c. networks containing up to three loops.
- writing Nodal equations for d.c. networks containing up to three nodes.
- using mesh analysis to find currents in d.c. networks of up to two loops.
- using nodal analysis to find node voltage and branch currents in d.c. networks of up to two nodes using a circuit simulation program to confirm the results of Mesh analysis or Nodal analysis of d.c. networks.

T4 Thévenin's principles for d.c. Linear Circuits encompassing:
- calculating the effect of the internal resistance on terminal voltage and current delivered for practical voltage sources and current sources.
- calculating the Thévenin equivalent voltage and resistance for d.c. networks and determining the load current, voltage and power.
- converting the Thévenin equivalent circuit to a Norton equivalent circuit and vice versa.
- verifying the equivalence of Thévenin equivalent circuits by measurement.

T5 Norton's principles for d.c. linear circuits encompassing:
- calculating the effect of the internal resistance on terminal voltage and current delivered for practical voltage sources and current sources.
- calculating the Norton equivalent current and resistance for d.c. networks and determining the load current, voltage and power.
- converting the Thévenin equivalent circuit to a Norton equivalent circuit and vice versa.
- verifying the equivalence of Norton equivalent circuits by measurement.

T6 Phasors encompassing:
- time domain and frequency domain
- frequency, angular frequency and units of measurement
- defining rms and convert between time domain and rms phasor values for a sine wave.
- converting between angular frequency and frequency.
- using a calculator to convert between polar and rectangular forms of phasor.
- representing a.c. voltages on a phasor diagram.

T7 Complex Impedance encompassing:
- defining impedance, resistance and reactance.
- defining admittance, conductance and susceptance.
- converting between conductance to resistance.
- converting between susceptance and reactance.
- converting between impedance and admittance.
- sketching impedance and admittance diagrams.
- calculating two-component series equivalent circuits and two-component parallel equivalent circuits and convert between these forms.

T8 Series and parallel a.c. linear circuits encompassing:
- Kirchhoff's Laws
- series equivalent impedance
- parallel equivalent impedance
- voltage divider and current divider rules
- calculating and measuring voltage and currents in a series a.c .circuit and draw the phasor diagram.

calculating and measuring currents in a parallel a.c. circuit and draw the phasor diagram.
· calculating and measuring voltage and currents in a series/parallel a.c. circuit and draw the phasor diagram.

T9 Superposition principles and Kirchoff's Laws applied to a.c. linear circuits encompassing:
- calculating current and voltage in any a.c. network of up to two loops and two sources.

 using circuit simulation programs to demonstrate the superposition theorem.
 function and operation of an electronics circuit simulation program.
 entering given circuit specifications into an electronic circuit program.
 setting the circuit simulation program operation parameters including input and output values, ranges and graduation.
 producing hardcopies of the circuit and analyse results.
T10 Mesh and Nodal analysis for a.c. linear circuits encompassing:
 Mesh analysis
 Node voltages and nodal analysis
 matrix representation
 method of determinants
 writing mesh equations for a.c. networks containing up to three loops.
 writing nodal equations for a.c. networks containing up to three nodes.
 using mesh analysis to find currents in a.c. networks of up to two loops.
 using nodal analysis to find node voltage and branch currents in a.c. networks of up to two nodes.
 using a circuit simulation program to confirm the results of mesh analysis or nodal analysis of a.c. networks.
T11 Thévenin and Norton theorems applied to a.c. linear circuits encompassing:
 calculating the effect of the internal resistance on terminal voltage and current delivered for practical voltage sources and current sources.
 calculating the Thévenin equivalent voltage and impedance for a.c. networks and determining the load current, voltage and power.
 calculating the Norton equivalent current and impedance for a.c. networks and determining the load current, voltage and power.
 converting the Thévenin equivalent circuit to a Norton equivalent circuit and vice versa.
 verifying the equivalence of Thévenin and Norton equivalent circuits by measurement.

T12 Star-delta conversions encompassing:
 Star connections
 Star-delta transformation formula equations
 selection of appropriate conversion
 calculating the delta connected equivalent of a star connected balanced a.c. or d.c. load and vice versa.
 converting a complex non-series/parallel network to a series/parallel network by means

of star-delta or delta-star conversions.
 verifying star-delta and delta-star network conversions by measurements.

T13 Complex a.c. power and maximum power transfer theorem encompassing:
 true power, reactive power and apparent power
 maximum power transfer
 calculating real, reactive and apparent power for series/parallel a.c. circuits and state the appropriate units of measurement.
 calculating the power factor of a.c. series/parallel circuits.
 drawing power triangle for a given circuit.
 calculating the load value which would consume maximum power and calculate this power for d.c. networks.
 calculating the load value which would consume maximum power in an a.c. network when the load is a pure resistance and calculate the power.
 calculating the load value which would consume maximum power in an a.c. network when the load is an impedance of variable resistance and reactance and calculate the power.
 verifying load selection by measurement.
T14 Transients encompassing:
 transients in R-C and R-L circuits
 growth and decay
 calculating voltage and currents in R-C series circuits using exponential equations.
 calculating voltage and currents in R-L series circuits using exponential equations

EE203	Three Phase Power Circuits

This unit covers determining correct operation of complex polyphase power circuits and providing solutions as they apply to electrical power engineering work functions. It encompasses working safely, problem solving procedures, including using electrical measuring devices, applying appropriate circuit theorems and providing solutions derived from measurements and calculations and justification for such solutions.

KS01-EG149A Polyphase power circuit analysis
Evidence shall show an understanding of polyphase power circuit analysis to an extent indicated by the following aspects:
T1 Polyphase supply system encompassing:
 advantage of three phase system compared to single phase systems
 double subscript notation
 phase sequence
 120 degree operator
 given circuit component parameters, solve practically based problems using:
 equivalent circuits of transformers, lines and loads.
 component values using rectangular and polar notation.
 current divider and potential divider rules using complex impedances.
 The “per unit” values of voltage, current, VA and impedance to a common VA base.

T2 Types of three phase system connections encompassing:
 supply to balanced star, 3 and 4 wire loads
 supply to delta connected loads
 effects of phase reversal

representation of currents and voltages as complex phasors for 3 phase and 3 phase and neutral quantities.
 calculation the values of and draw labeled phasor diagrams, not to scale, to represent complex values of current and voltage for balanced and unbalanced loads for star and delta systems.
 calculation of values of P, Q and S for balanced and unbalanced systems.
 draw and label single phase diagrams to represent 1 phase of a complex 3 phase system.

 represent unbalanced voltages or currents as symmetrical components.
 Phase to phase currents
 Phase to neutral/earth currents.
T3 Balanced three phase loads encompassing:
 calculations of balanced loads connected in star
 calculations of balanced loads connected in delta
 calculation of steady state values of fault current for various configurations.
 evaluation of the symmetrical component impedances for the various distribution system components. Transformers (earthed neutral case).
Generators (high impedance earth)
 calculation of fault currents using the per unit approach.
 calculation using the “worst case” values based on transformer impedance only (ie., a short circuit fault)
 estimation of peak values using accepted multipliers.
 effects of the d.c. component on the instantaneous magnitudes of fault currents in transformers and generators.
T4 Unbalanced three phase loads encompassing:
 Star – 4 wire systems
 Delta systems
 Star – 3 wire systems
 Star 4 wire with neutral impedance

T5 Power in three-phase circuits encompassing:
 summation of phase powers and power in balanced loads
 measurement of power in balanced loads – 2 Wattmeter methods

T6 Reactive three phase power encompassing:
 power triangle calculation
 measurement of VAR
 power factor correction
T7 Fault currents encompassing:
 symmetrical components
 positive, negative and zero sequence impedance

fault current breaking and let-through energy capacities of circuit breakers, fuses
 importance of fault/arc impedance
 calculation of fault currents - phase-to-earth faults
 calculation of fault currents - phase-to-phase faults
 analysis of asymmetrical faults currents.

T8 Harmonics in three phase systems encompassing:
 presence of triple in harmonics in 3 phase systems
 effects of 3 phase harmonics for different star and delta connections.
 methods for reducing harmonics in three phase systems.

EE204	Engineering Physics

This unit covers the law of physics and how they apply to solving electrotechnology related problems. It encompasses working safely, knowledge of measurements of physical phenomena, linear and angular motion, harmonic motion, wave theory, optics, acoustics and heat capacity and transfer, use of measurement techniques, solving physics related problems and documenting justification for such solutions.

KS01-EE082A Electrotechnology engineering physics
Evidence shall show an understanding of electro engineering physics to an extent indicated by the following aspects:
T1 Measurement encompassing
 SI units in measurement of physical phenomena
 Uncertainty and tolerance

T2 Linear motion
T3 Angular motion
T4 Simple harmonic motion and vibration
T5 Wave theory
 Interference
 Diffraction
T6 Electromagnetic waves and propagation
T7 Optics
 Mirrors and lenses
 Optical fibre

T8 Acoustics and ultrasonics
T9 Heat capacity and heat transfer
 Fluid power

EE205	Electrical Power System

2.6.22.6 Electrical power distribution systems diagnostic

a) Distribution system overview including:
regulatory conditions of supply and utilisation
compliance with Australian Standards.
reticulation system including overhead/underground, urban/rural, HV customers and high-rise building systems. The effects of industrial customers

methods used to ensure continuity of supply.
types of substations in current use.
systems of distribution used, (primary and secondary)
voltage levels, power factor, wave-form distortion and transient loading
supply quality
load curve profiles (residential/industrial/commercial)
types of feeders
distribution systems (urban, rural single-phase systems, SWER, spur, parallel and ring systems etc.)

b) Overhead lines and installation
industry and safety regulations
overhead conductors
conductor material
current rating factors (heating, voltage drops, power losses)
aerial bundled cables (HV and LV)
covered conductors

Note: The characteristics of lines and cables including the calculation of R, X and B for different arrangements of conductor. Typical values for actual lines. Transposition. Models based on line length. Voltage and line regulation
overhead line poles
types (wood, concrete and steel)
installation of poles (tooling, rake, life, labelling, sinking)
maintenance of poles – above & below ground
pole strength and loads
crossarms
types and standard sizes
insulators
insulation types
types (pin, suspension or disc, shackle)
creepage, necessary clearances
arcing horns, insulator mounting
structure types
mechanical properties (working strength, maximum tension, limiting size)
interpretation of stringing charts

determination of sag (by calculations or measurement and/or tension measurement)
sight and wave sagging, sag correction
stays
components, anchorage

c) Use of design schedules
sample design problems

Note: Examples of common design practice line, voltage, structure types used, line deviation, span sag, crossarms, insulators and stays wind loading and line deviation loading basic surveying
measurement of levels, deviation angle and compass bearings
perform survey of short distribution line extension of produce field notes

d) Underground cables
cable types, ratings, core material, design considerations, cable dielectrics, insulating materials and abbreviations, electric stress, cable volt drop and volt drop calculations, cable termination, joints and installation.
induction and eddy currents
cable testing, cable fault location
cable drawing

e) Voltage regulations of feeders and associated equipment
terminology used: distribution system, service line, customer‘s terminals, customer voltage, utilisation voltage, base voltage, voltage variation and bandwidth
voltage limits and effects of voltage variation
causes of variation: inductance, capacitance and reactance of distribution lines, transformers
methods of voltage control: off-load, on-load tap changers, voltage regulating relays, line drop compensation, different types of voltage regulators
voltage profiles: principles, effect on voltage profiles, limits of voltage, voltage drops due to LV mains transformers, tapsettings feeder and service lines
determining volt drops for components within the profile.

f) Control of voltage. Conditions leading to voltage collapse and system disintegration. Effects on the system of high/low volts. Voltage control devices including:
voltage regulators applied to generators and synchronous phase modifiers
electromagnetic voltage regulators
series and parallel capacitors
OLTC transformers and static Var compensations (SVCs)

g) Range of devices covered by SVCs including:
saturated reactor compensations (SRs)

thyristor controlled reactor compensators (TCRs)
combined TCR/TSCs and
production of wave-form distorting harmonics and control devices

h) Importance of the location in the system of voltage control devices
i) Types of communication systems including telephone, power line carrier, dedicated cable, micro-wave links and fibreoptics. Quantities and signals to be communicated. Advantages and disadvantages of the various systems. Equipment requirements
j) Transient over-voltages in power systems. Switching and lightning overvoltages and their
effect on different plant items. Transient over-voltage control and reduction using surge diverters, shield wires and CB are control. Insulation systems, insulation co-ordination, insulation grading in plant items, bushings and capacitor bushings
k) The principles of operation, voltage and current range, breaking capacity and field of use of the following types of circuit breakers.
bulk oil, small oil volume, air break, vacuum and SF6 (double pressure and puffer types).

l) The types of isolators in use. Examples include duo-roll, blade and scissor type.
m) Circuit breaker auxiliary systems including:
d.c. systems including battery types, charging and protection systems and earth fault detection systems
SF6 conditioning, storage and handling system

EE206	AC Machines	

Synchronous Machines

This unit covers developing engineering solutions to resolve problems with synchronous machines and their controls. It encompasses working safely, apply extensive knowledge of synchronous machine operation, construction and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives

KS01-EG143A Synchronous machine diagnostics
Evidence shall show an understanding of developing engineering solutions for synchronous machine problems to an extent indicated by the following aspects:
T1 a.c. generators – construction, types and cooling encompassing:
- construction of stator and rotor windings
- rotor construction (cylindrical and salient pole)
- advantages of rotating field construction
- excitation methods
- cooling methods
- prime movers

T2 a.c. generators – operating principles and characteristics encompassing:
- a.c. generator equivalent circuits (synchronous reactance and resistance components)
- tests – open circuit, short circuit, stator impedance
- voltage regulation, island generator's terminal voltage load power factor
- determination of excitation voltage and load angle

T3 Synchronising a.c. generators encompassing:
- conditions for synchronising (infinite bus)
- methods for synchronising (lamp methods, synchroscope)
- alternator load sharing, parallel operation

T4 a.c. generators power, torque and efficiency encompassing:
- power input, input torque, speed
- power losses
- output power, load power factor, rotor angle, pu power
- efficiency
- performance chart interpretation

T5 Voltage regulation (AVR) encompassing:
- need for AVR's
- features of AVR's
- effects of rotor inductance
- connections of AVRs
- operation of AVRs

T6 a.c. generator operational stability encompassing:
- power output, VAR effects, rotor angle, excitation
- control of VAR (OLTC transformers)
- voltage dependant nature of stability
- critical clearance angle of a.c. generator
- stability limits

T7 a.c. generator protection encompassing:
- restricted, unrestricted primary, back up and duplicated protection
- overcurrent, short circuit, differential, reverse power, load unbalance, rotor overload, loss-of-field, rotor earth fault, station earth fault, under frequency protection
- external fault protection

T8 Induction generator encompassing:
- types operating principles, characteristics
- excitation methods
- losses and efficiency
- synchronising and paralleling

T9 Three phase synchronous motors encompassing:

 construction – rotor, stator, windings
 excitation methods
 operating principles (equivalent circuits, synchronous impedance)
 hunting and stability limits
 power factor correction
 paralleling and synchronisation techniques
 starting methods
 braking methods

Part 2 Induction Machines

This unit covers developing engineering solutions to resolve problems with induction machines and their controls. It encompasses working safely; apply extensive knowledge of induction machine operation and construction and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives.
Note.
Typical motor problems are those encountered in meeting performance requirements and compliance standards, revising a machine operating parameters and dealing with machine malfunctions.

KS01-EG145A Induction machines diagnostics
Evidence shall show an understanding of developing engineering solutions for induction motor problems to an extent indicated by the following aspects:
T1 Operating principles of polyphase induction motors encompassing:
 rotating magnetic field torque slip
 MMF relationships
 Leakage fluxes

T2 Construction of polyphase induction motors encompassing:
 squirrel cage motors
 slip-ring motors
 construction considerations in minimisation of tooth locking

T3 Speed-torque relationships in induction motors encompassing:
 maximum torque
 torque – slip relationships
 squirrel cage rotor types
 power flow in the motors
 power distribution
 torque units
 slip ring rotors
T4 Induction motor performance testing encompassing:
 no-load tests

locked rotor tests
· development of motor equivalent circuit from test results
· analysis of motor performance using circle diagrams

T5 Induction motor starters encompassing:
 starting requirements
 type of starters
 starting torque
 starting dynamics
 static friction
 mechanical loads
 starting duration

T6 Reduced voltage starting encompassing:
 starting dynamics
 change over conditions
 starting duration
 acceleration curves
T7 Speed control of induction motors encompassing:
 constant torque, constant power concepts
 torque-flux-voltage relationships
 rotor resistance control
 stator impedance control
 variable frequency control (e.g. PAM, PWM, Flux vector control)

T8 Braking of induction motors encompassing:
 electrical braking systems (plugging, d.c. dynamic, regenerative, capacitor-magnetic)
 mechanical braking systems (mechanical drum, demag, eddy current)

T9 Motor protection encompassing:
 overload
 earth fault
 phase failure

T10 Motor selection criteria and RMS rating
T11 Induction motor maintenance/repair encompassing:
 routine maintenance schedules
 type of repairs (mechanical, electrical)

T12 Single phase induction motors encompassing:
 operating principles (especially RMF)
 construction types

· speed-torque relationships

 testing

EE207	DC Machine

This unit covers developing engineering solutions to resolve problems with d.c. machines and their controls. It encompasses working safely; apply extensive knowledge of d.c machine operation and construction and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives.
Note.
Typical machine problems are those encountered in meeting performance requirements and compliance standards, revising machine operating parameters and dealing with machine malfunctions.

KS01-EG144A Direct current machine diagnostics
Evidence shall show an understanding of developing engineering solutions for d.c. machine problems to an extent indicated by the following aspects:
T1 Basic d.c. machine construction and operation encompassing:
 General principles of operation
 Applications of d.c. machines
 Construction of d.c. machines
 d.c. machine configurations; series, shunt, compound long shunt and compound short shunt
 Armature and field currents
 Insulation
 Ratings
 Cooling paths
 Bearings
 General maintenance of d.c. machines

T2 Construction and use of lap and wave windings encompassing:
 coils and elements
 generated voltage equation for generator
 generated voltage equation for motors
 application of lap and wave windings

T3 Commutation process encompassing:
 use of interpoles
 loading of machines
 brush shifting
 brush selection

classes of brush grades

Note:
Examples include: natural graphite, hard carbon, electrographite, metal-graphite, metal-carbon, “treated” grades
 carbon brush contact characteristics

Note:
Examples include: specific resistance, thermal conductivity, density and porosity, elastic properties, contact properties
 carbon brush factors

Note:
Examples are: pressure, current, polarity, speed
 brush construction

Note:
Examples are: dimensions, tolerances, preferred sizes, surfaces, edges, bevels, flexible shunts, connection of flexible shunt to brush, insulation of flexible connections
 brush holders
Note:
Examples are: types, brush angles, trailing holders, reaction holders, top bevel angles, reversible rotation, cantilever holders, effective arc of contact, construction of brush holders, pressure mechanism
 mounting of brush holders and brushes

Note:
Examples are: clearances, brush angle, brush arm spacing, alignment, staggering, brush bedding, brush pressure
 brush operation

Note:
Examples are: temperature rise, number and size of brushes, current distribution etween brushes, slotting brushes, polarity effects, arc of contact, materials for commutators, mica
 selection of brush grades

Note:
Examples are: machine data, current density, commutator peripheral speed, brush arc, pitch of segments, number of segments covered by brush, cooling surface
T4 Armature reaction in d.c. machines encompassing:
 effect of armature reaction on d.c. machine characteristics
 use of compensating winding

T5 d.c. generators encompassing:
 relative advantages and disadvantages of the various dc generator configurations

and their performance under various load conditions
- voltage regulation as a percentage or per unit value
- operation in parallel

T6 d.c. motors encompassing:
- relative advantages and disadvantages of the various dc motor configurations and their performance under various load conditions
- shape of motor speed/torque curves
- reversal of rotation

T7 Starting and protection of d.c. motors encompassing:
- types of d.c. motor starters in use
- d.c. motor protection

T8 Speed regulation and speed control of d.c. motors encompassing:
- methods in use
- effect on motor design and operation caused by the use of SCR
- speed control equipment

T9 Braking of d.c. motors encompassing:
- Plugging
- Dynamic
- Regenerative
- Mechanical

T10 Losses, heating and efficiency encompassing:
- Copper losses
- Iron losses
- Mechanical losses
- Efficiency

T11 Acceleration of d.c. motors and loads encompassing:
- characteristics of typical loads
- matching a suitable motor to a given load
- heating of windings
- derating of motors

T12 Special d.c. motors construction, operation and applications encompassing:
- permanent-magnet motors
- brushless motors (e.c. motors)
- coreless and moving coil motors
- linear motors
- printed circuit motor
- stepping motors

voice-coil motors

T13 Maintenance of d.c. machines encompassing:
- routine maintenance
- breakdown repairs

T14 types of faults encompassing:
- brushes/brush gear problems

Note:
Examples are: sparking, excessive heating, excessive wear of brushes, commutator or slip rings, bad surface conditions, excessive maintenance, flexible burning, flexible corrosion, separation or grooving, blackening, copper picking, copper dragging, brush noise

T15 adjustment of machines encompassing:
- correct brush position
- machining and finishing of commutators

EE208	Operational Amplifiers

Part 1- Operational Amplifier

This unit covers determining correct operation of amplifiers. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predictable problems in amplifier sections/circuits.

KS01-EH113A Amplifier fundamentals
Evidence shall show an understanding of amplifier troubleshooting, applying safe working practices and relevant Standards, Codes and Regulations to an extent indicated by the following aspects:

T1. Single stage discrete amplifier d.c. characteristics
- Risk and safety
- Field effect transistors (FET) and Bi-junction transistor (BJT) circuit symbols
- Quiescent (Q) point
- Biasing methods for BJT and FETs
- Circuit theory for BJT and FETs
- Verification of performance of BJT and FET amplifier circuits

T2. Single-stage discrete amplifier small signal characteristics
- Small signal gain
- Gain measurements
- Overdrive conditions

T3. Capacitive coupling in single-stage discrete amplifiers
 Coupling capacitor functions
 Coupling capacitor effect on low frequency response
 Emitter\source bypass capacitor effect on low frequency response
 Verification of circuit operation and frequency response (eg. Bode Plot).

T4. Multistage amplifier coupling methods
 Coupling methods
 Total gain
 Bandwidth considerations
 Verification of circuit operation

T5. Differential amplifiers
 Differential amplifier concept
 Typical circuit operation
 Differential and common-mode gain
 Common mode rejection
 Constant current and voltage sources
 Verification of circuit operation

T6. Negative feedback
 Concept of negative feedback
 Effects of negative feedback
 Negative feedback configurations
 Amplifier gain and negative feedback

T7. Introduction to classes of power amplifier operation
 Power efficiency
 Classes and applications
 Crossover distortion

Class AB operation
· Heat sinking

T8. Complimentary symmetry power amplifiers
 Biasing and crossover distortion
 Power efficiency
 Quasi-complimentary and Darlington output configurations
 Complete amplifier operation
 D.C. operating condition calculations
 Verification of circuit operation

T9. Other solid state power amplifier design
 Transformer coupled power amplifiers
 I.C. power amplifiers
 Class D power amplifiers

Part 2 Three phase electronic power control

This unit covers solving problems with electronic aspects of polyphase power control devices and circuits. The unit encompasses safe working practices, interpreting diagrams, applying knowledge of electronic power control devices and their application, using effective problem solving techniques, safety and functional testing and reporting work activities and outcomes.
Note.
Typical polyphase electronic power control problems are those encountered in meeting performance requirements and compliance standards, revising control operating parameters and dealing with control malfunctions.

KS01-EI149A Polyphase electronic power control circuit
Evidence shall show an understanding of polyphase electronic power control circuit to an extent indicated by the following aspects:
T1 Three Phase Rectifier Circuits encompassing:
 Three-Phase Circuit Configurations
 Resistive/Inductive Loads
 Output Voltages/Waveforms
 Ripple Voltage/Frequency
 Peak Reverse Voltages
 Free Wheeling Diodes

Measurement of rectifier output parameters.

T2 Three-Phase Half Wave Controlled Rectifiers encompassing:
 Phase control
 Purpose/operation of half controlled rectifiers
 Circuit configuration
 Rectifier performance and operation - resistive loads
 Output voltage – resistive load
 Rectifier performance and operation - inductive loads
 Rectifier output waveforms
 Applications and limitations
 Advantages and disadvantages three-phase controlled rectifiers.
T3. Three-Phase Half Controlled Bridge Rectifier encompassing:
 Purpose/operation of a half controlled bridge rectifiers
 Circuit configuration and connections

- Rectifier output - resistive loads
- Output voltage – resistive loads
- Rectifier output - inductive loads
- Output voltage - inductive loads
- Flywheel diode
- Output voltage calculations
- Applications and limitations
- Advantages and disadvantages three-phase half controlled bridge rectifiers.

T4. Three-Phase Fully Controlled Bridge Rectifier encompassing:
- Purpose/operation of a fully controlled bridge rectifiers
- Circuit configuration and connections
- Rectifier output - resistive loads
- Output voltage – resistive loads
- Rectifier output - inductive loads
- Output voltage - inductive loads
- Flywheel diode
- Output voltage calculations
- Applications and limitations
- Advantages and disadvantages three-phase fully controlled bridge rectifiers.

T5. Three-Phase a.c. Controllers encompassing:
- Circuit configurations
- Circuit operation
- Triacs and SCRs circuits
- Triggering requirements

Output voltage and waveforms
· Determination of output voltage
· Applications
· Advantages and disadvantages

T6. DC Converters encompassing:
- Purpose and operation of d.c. converters
- Circuit configurations
- Voltage control methods
- Forced commutation methods
- Calculation of load voltage
- Output voltage/waveforms
- Applications
- Advantages and disadvantages

T7. Cycloconverters encompassing:
- Purpose/operation of a cycloconverter
- Basic circuit configurations
- Measurement of output voltage
- Calculation of load voltage
- Output voltage/waveforms
- Applications and limitations
- Advantages and disadvantages

T8. Invertors encompassing:
- Purpose/operation of a inverter
- Basic circuit configurations
- Measurement of inverter outputs
- Output voltage
- Applications and limitations
- Advantages and disadvantages

T9. Thyristor Protection encompassing:
- Power Control Devices Failure
- Protection Techniques
- Snubber Networks
- Series Inductors
- Amp Trap (HRC) fuses
- Gate Pulse Suppression

10. Installation of Thyristor Devices and Circuits encompassing:
- Need for heat sinking of power thyristor devices
- Heat sink features and types

Installation methods for all types of thyristor packages
· Basic thermal model, only to demonstrate the effect of different heat sink
· Types and profiles and installation methods on thyristor junction temperature.

T11. Series and Parallel Thyristor Connections encompassing:
- Purpose of Series/Parallel Connection
- Series Connections
- Reasons
- Operational Problems
- Parallel Connections
- Reasons
- Operational Problems

T12. Fault Finding Three Phase Thyristor Circuits encompassing:
- Fault finding procedures
- Typical faults – power and trigger circuits
- Characteristics displayed by common faults
- Comparison of test data with expected data (voltage/current waveforms)
- Location and replacement of faulty components

EE209	Analogue Electronics

This unit deals the replacement of electronic components, cabling and sub systems of electronic apparatus. It encompasses safe working practices, following written and oral instruction and procedures, basic testing and techniques, dismantling and assembling apparatus and disconnecting and reconnecting components.

KS01-EH102A Component replacement to repair basic electronic apparatus faults
Evidence shall show an understanding of component replacement to repair basic electronic apparatus faults, applying safe working practices and relevant Standards, Codes and Regulations to an extent indicated by the following aspects:
T1. Electronic soldering equipment and techniques
- Workshop hazards and safety associated with soldering
- Quality concepts
- Electronic soldering equipment
- The soldering process
- Lead free solder

T2. Printed circuit board soldering techniques
- Electronic component mounting
- Solder rework of printed circuit boards.
- Faulty solder joints

T3. Soldering electronic cables
- Soldering multi-strand, ribbon and coaxial cables
- Effects and prevention of electrostatic discharge (ESD)

T4. Electronic component basics
- Types of components
- The physical features and primary characteristic of components
- Marking and codes on components
- Handling static sensitive components

T5. Electronic cable overview and coaxial cable
- Coaxial cables types and characteristics
- Coaxial cable termination

T6. Performance copper cables
- Twisted pair voice and data cables
- Insulation displacement (IDC) termination
- Colour codes
- Terminating performance cables
- Harness wiring

T7. Electronic apparatus components
- Fault finding
- Testing
- Replacement

EE301	Advanced Electrical Drafting

This unit covers the production of detailed electrical drawings, drawing sets and documentation. It includes safe working practices; interpreting technical data and specifications; using advanced computer-aided systems and commands and appropriate drafting peripheral systems, equipment and tools to develop detailed drawings. It also includes applying knowledge of electrical equipment design drawing methods, techniques, procedures and protocols and documenting design, storing and retrieving data, and producing related documentation for presentation of preliminary and final drafts for verification.

KS01-EG179A Electrical Detailed Drawings
Evidence shall show an understanding of electrical detailed drawings to an extent indicated by the following aspects:
T1 (Is the number correct?) Producing final drafts for verification encompassing:
- principles, purpose and concept of verification of drafting products encompassing: production of electrical drawings for verification by authorised persons, production of drawing sets, production of related documentation, presentations of final drafts
- processes and procedures related to the verification of final drafts by authorised persons encompassing: accuracy
- publication of verified electrical drawings

T2 Detailed electrical drawing production covering encompassing:
- distribution branch circuits and boards, services and load calculations; encompassing panels(HV/LV)/switch boards/motor control centres/final
- conductor/cable selection and calculations encompassing: electrical, data, communications
- overcurrent and overvoltage protection
- cable support systems; encompassing cable trays, trunking, conduits, ducts, guards, saddles, carriers, raceways/cavities, poles
- box and fitting fill requirements
- wiring devices and terminations
- distribution equipment; encompassing power circuit devices
- distribution system transformers; encompassing specialty transformers, power circuit devices
- lighting applications; encompassing lamps, ballasts, and components
- motors; encompassing functional controls, advanced motor controls, motor calculations, motor maintenance arrangements

hazardous areas encompassing: electrical equipment; classification of
- emergency standby systems; encompassing UPS/inverter and battery banks
- fire alarm systems
- high-voltage terminations/splices
- cable size selection for installation cable run
- cable sizes, voltage drops, conduit sizes, fault levels, fuse/circuit breaker (CB) sizes and working temperatures
- short circuit calculations

 earth loop impedance compliance test arrangements on the completed design
 touch potentials calculations
 cable schedules creation
 “single line” and “as built” drawings; encompassing three phase schematic colour

diagrams, marked up cable calculations, short circuit results, earth loop impedance results
 quantities parts list and drawings for tender drawings issued by electrical consultants/engineers
 coordination and discrimination studies
 Building Management Systems (BMS) encompassing: building information modelling and sustainable design
 fuse and CB trip curves plots and displays
 troubleshooting/fault finding
T3 Schematic component commands detailed encompassing:
 schematic symbols editor
 schematic editor
 components from lists
 connectors
 terminals; encompassing multiple level and jumpers
 circuits
 multiple phase circuits

T4 Schematic editing encompassing:
 advanced utilities
 copy catalogue and location
 values
 swapping and updating blocks
 using the auditing tools
 update and retag drawings
T5 Detailed panel layouts encompassing:
 detailed panel layouts creation
 din rail tool
 terminal strip editor
 detailed panel layout annotation
 detailed reports

T6 Digitising and scanning encompassing:
 drawings digitisation; encompassing tablet and software configuration, tablet and puck, grids setup and alignment marks for various size drawings, software parameters setting, hard copy drawings digitisation to tablet parameters
 digitised drawing editor, manipulation and save
 digitise and grid setups and alignment marks on a hard copy of a large drawing (e.g. A1)
 scanning devices and peripherals setup encompassing associated software usage, save (e.g. file formats for use other software applications) and management
· scanned image conversion to vector format, edit and save in file formats for use in CAD; encompassing importation of scanned images into CAD drawings in image formats for editing

EE302	Advanced Engineering Mathematics

This unit covers the application of advanced computational processes to solve energy sector engineering problems. It encompasses working safely, applying problem solving techniques, using a range of advanced mathematical processes, providing solutions to electrical/electronics engineering problems and justifying such solutions.
Note. Typical engineering problems are those encountered in meeting requirements in a design brief, meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions

KS01-EE127A Advanced Engineering Maths
Evidence shall show an understanding of advanced engineering maths to an extent indicated by the following aspects:
T1 Differential Calculus encompassing:
 basic concepts of differential calculus, limited to definition of the derivative of a function as the slope of a tangent line (the gradient of a curve); limits; basic examples from 1st principles; Notation and Results of derivative of k.f(ax + b) where f(x)=x to the power of n, sin x, cos x, tan x, e to the power of x, ln x.
 rules - derivative of sum and difference; product rule; quotient rule; chain rule (function of a function), limited to two rules for any given function, the 2nd derivative.
 applications - equations of tangents and normals; stationary points; turning points; and curve sketching; rates of change; rectilinear motion
 verbally formulated problems involving related rates and maxima: minima

T2 Integral Calculus encompassing:
 integration as the inverse operation to differentiation - results of the integral of k.f(ax + b) where f(x) = x to the power of n, sin x, cos x, sec squared x, e to the power of x, method of substitution, the definite integral.
 applications - areas between curves; rectilinear motion including displacement from acceleration and distance travelled; voltage and current relationship in capacitors and inductors and the like.

T3 Linear Algebra encompassing:
 matrices and inverse matrices;
 linear mapping,
 determinants,
 solution of linear equations.

T4 Vectors encompassing:
 geometrical representation,
 addition and scalar multiplication,
 dot and cross products,
 equations of lines and planes.

T5 Variables encompassing:
 graphs, level curves and surfaces
 partial derivatives; chain rule; directional derivative;
 maxima and minima.

T6 Sequences and Series encompassing:
 algebraic and Fourier series, convergence; Taylor's Theorem
 power series manipulation.

T7 Differential Equations encompassing:
 first order and separable linear equations
 second order linear equations.
 partial differential equations.
 numerical Techniques.

T8 Number encompassing:
 integer, irrational and complex numbers.
 number systems.
 arithmetic operations.
 accuracy and stability.

T9 Statistics encompassing:
 assembly, representation and analysis of data.
 fitting distributions to data.
 non-parametric statistics.
 tests of significance for means, variances and extreme values.
 correlation

EE303	Transmission Line

This unit covers diagnosing and rectifying faults in electrical energy transmission systems. The unit encompasses safe working practices, interpreting diagrams and technical data, applying knowledge of energy supply and transmission systems to logical fault finding processes, implementing fault rectification, safety and functional testing and reporting work activities and outcomes

a) Overview of the transmission system including lines, buses, transformers and cables. Line/bus layouts including single and double switching, breaker and a half systems and HV crossing methods.
b) The principles involved in high voltage a.c. transmission including tower types and configurations, choice of towers or poles (economic and environmental), insulator types and configuration, types of conductors, their configuration and standard nomenclature. Typical line spacing and ground clearances. Line ratings based on ambient temperature. Conductor terminating and clamping equipment including vibration damping principles and equipment.
c) The principles involved in d.c. transmission including the economics, harmonic generation, VAR requirements and protection difficulties. Types of connections and transformer requirements. Advantages and disadvantages of d.c. transmission. Typical overseas systems. Likely (future) use in this country.
d) The principles of operation, voltage and current range, breaking capacity and field of use of the following types of circuit breakers.
bulk oil
small oil volume
air break
air blast
air puffer
vacuum and
SF6 (double pressure and puffer types).

e) The types of isolators in use. Examples include duo-roll, blade and scissor type.
f) Circuit breaker auxiliary systems including:
high pressure air systems and air storage and handling processes
d.c. systems including battery types, charging and protection systems and earth fault detection systems
SF6 conditioning, storage and handling system

g) The characteristics of lines and cables including the calculation of R, X and B for different arrangements of conductor. Typical values for actual lines. Transposition. Models based on line length. Voltage and line regulation. The transmission of power (P) and VARs (Q).
h) Control of voltage. Conditions leading to voltage collapse and system disintegration. Effects on the system of high/low volts. Voltage control devices including:
voltage regulators applied to generators and synchronous phase modifiers
electromagnetic voltage regulators
series and parallel capacitors
OLTC transformers and static Var compensations (SVCs)

i) Range of devices covered by SVCs including:
saturated reactor compensations (SRs)
thyristor controlled reactor compensators (TCRs)
combined TCR/TSCs and

production of wave-form distorting harmonics and control devices

j) Importance of the location in the system of voltage control devices
k) Use of graphical methods to calculate the size of Var regulating plant
l) Types of communication systems including telephone, power line carrier, dedicated cable, micro-wave links and fibreoptics. Quantities and signals to be communicated. Advantages and disadvantages of the various systems. Equipment requirements
m) Transient over-voltages in power systems. Switching and lightning overvoltages and their effect on different plant items. Transient over-voltage control and reduction using surge diverters, shield wires and CB are control. Insulation systems, insulation co-ordination, insulation grading in plant items, bushings and capacitor bushings
n) Factors leading to the generation of corona. Consequences of corona. Reduction of corona including conductor bundling, grading rings and conductor surface treatment

EE304	Power System Protection

This unit covers developing engineering solutions to resolve problems with energy supply system protection. It encompasses working safely, apply extensive knowledge of energy supply system protection operation, protection devices and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives.

Note:

Typical protection problems are those encountered in meeting performance requirements and compliance standards, revising a protection operating parameters and dealing with protection malfunctions.
a) Protection scheme requirements
Requirements of a protection scheme

Note: Includes relationship to primary system design, purpose of protection, safety of persons, protection of plant, system instability, system break up, loss of customers, loss of revenue, protection zones, restricted schemes, unrestricted schemes, duplicate protection, local backup protection, remote backup protection, selectivity, discrimination, stability, sensitivity, reliability
Components of a protection scheme

Note: Includes current transformers, potential transformers, summation current transformers, interposing transformers, multitapped transformers, all-or-nothing relays, induction relays, balanced beam relays, directional relays, biased relays, solid state relays, microprocessor based relays, gas relays, thermal sensors, hardwired communication, powerline carriers systems, microwave systems, fibre optic systems, need for isolation, need for interfacing
Protection applied to buses

Note: Includes overload, differential, earth leakage, structure leakage, combined schemes, protection overlap
Protection applied to transformers

Note: Includes biased differential, gas, winding temperature, oil temperature
Protection applied to single/radial lines

Note: Includes overcurrent, earth leakage, slow earth leakage, distance, auto reclose, sectionalising, over voltage

Protection applied to interconnected lines

Note: Includes overcurrent, pilot wire, directional, directional overcurrent, current differential, phase comparison, current comparison, distance, impedance, admittance, offset
b) Discrete protection systems
Earth fault protection

Note: Includes master earth leakage schemes, sensitive earth fault relays and schemes, residual earth fault scheme, core balance earth fault scheme, frame/structure earth leakage scheme, time graded discrimination, backup protection
Overcurrent protection

Note: Includes feeder overcurrent protection, instantaneous overcurrent schemes, inverse timed overcurrent schemes, types and location of components of an overcurrent scheme, CT summation, time graded discrimination, backup protection
Alarms and controls

Note: Includes auxiliary relays, voltage regulating relays, line drop compensation, gas relay types, gas relay scheme operation and setting, over temperature schemes
c) Interdependent protection systems
Overcurrent and earth leakage intertripping, interlocking and blocking

Note:
Includes logic mapping, master control, elctromechanical, electronic, shading coils
Pilot wire, phase comparison

Note: Includes opposed voltage schemes, circulating current schemes, location of components of a scheme, pilot supervisory techniques,
Load shedding, voltage control, parallel operation, load rejection
CB failure protection
Reclose systems

Note: Includes applications, single shot, multishot, blocking schemes, synchronisation checking
d) Complex protection systems
Distance

Note: Includes characteristics, electromechanical, electronic, impedance, mho, offset mho, switched schemes, non-switched schemes, blocking schemes, bus zone

Differential, transformer differential, bus overcurrent

Note: Includes principles, feeder protection, transformer protection, bias systems, harmonic restraint, CT connections, bus protection, low impedance schemes, high impedance schemes, bus overcurrent schemes, generator protection, CT connections, special considerations, digital systems
Types of revenue metering
Applications of SCADA
Complex protection systems for communications
Harmonic control
Point on wave switching

EE305	Power Transformer

This unit covers developing engineering solutions to resolve problems with energy supply system protection. It encompasses working safely, apply extensive knowledge of energy supply power transformer operation and their application, gathering and analysing data, applying problem solving techniques, developing and documenting solutions and alternatives.

Note.

Typical transformer problems are those encountered in meeting performance requirements and compliance standards, revising a transformer operating parameters and dealing with transformer malfunctions

a) Transformer construction and operating principles encompassing:
various types of lamination style and core construction used in single-phase, three-phase, double wound and auto transformers.
different winding styles/types used in transformers.
how input current is limited on no load and how power is transferred from primary to secondary when a load is connected.
using the transformation ratio to determine an unknown quantity of V, I, VA.
significance of nameplate data items.
operation of a transformer under load/no load conditions.
the reason any particular type of transformer is used in a specific application.
safety features specified in regulatory standards with respect to transformers.
safety features specified in regulatory standards with respect to isolating transformers.
basic insulation resistance, continuity and winding identification tests.

b) Transformer parameters encompassing:
the percentage impedance of a transformer by test.
percentage impedance of a transformer by calculation.

the equivalent circuit of a transformer.
calculation of voltage regulation.
losses that occur in a transformer.
tests to determine losses.
efficiency and state typical values.
the all day efficiency of a transformer.

c) Cooling methods encompassing:
methods of natural and forced cooling.
properties of transformer oil.
tests performed on transformer oil.
auxiliary equipment
the purpose and operation of the types of auxiliary equipment used on transformers

Note. Examples are bushings, explosion vents, surge diverters, tap changers, conservator, breathers and desiccants, gas relays, temperature indicators.
d) Instrument transformers encompassing:
construction of current transformers.
uses and ratings of current transformers.
construction of voltage transformers.
uses and ratings of voltage transformers.
safety techniques when using instrument transformers.

e) Transformer connections encompassing:
vector group of a transformer from a connection diagram.
connections of a three-phase transformer to create a particular vector group.
reasons for using the different vector groups.
purpose of tertiary windings.
consequences/effect of an incorrect connection.

f) Parallel operation encompassing:
polarity markings for the windings of a transformer.
conditions/restrictions for parallel operation of transformers.
calculation of loading on transformers operating in parallel.
connection of transformers in parallel to supply a common load.
the consequences/effect of an incorrect connection.

g) Harmonics in transformers encompassing:
how harmonics are generated in transformers.
problems caused by harmonics in transformers.
measurement of the harmonics in a transformer.
methods/equipment used to overcome harmonics in transformers.

h) High voltage isolation encompassing:
the term high voltage.
procedures for isolating high voltage apparatus.
regulations with respect to *access permits.*
clearances to be observed with respect to high voltages up to 33kV.

the term _step‘ and _touch‘ potential.

EE306	Electro-mechanical Control

This unit covers solving problems in industrial control systems. The unit encompasses safe working practices, interpreting process and circuit diagrams, applying knowledge of industry controls to problem solving techniques, safety and functional testing and completing the necessary documentation.
Note.
Typical basic industrial control system problems are those encountered in meeting performance requirements and compliance standards, revising control operating parameters and dealing with control malfunctions.

KS01-EI120A **Industrial control systems**
Evidence shall show an understanding of industrial control systems to an extent indicated by the following aspects:
Control amplifiers encompassing:
- Introduction
- Amplifier Operation
- Operational Amplifiers
- Operational Amplifier Configurations

Industrial transducers encompassing:
- Introduction
- SI Units
- Forms of Energy
- Transducer Terminology
- Temperature Measurement
- Force Measurement
- Speed Measurement

Positional Measurement

Industrial final control elements encompassing:
- Introduction
- Electromagnetic Devices
- Valves
- Solid State Switching Devices

Industrial control systems encompassing:
- Automatic Control
- Open Loop Control
- Closed Loop Control
- Control System Terminology
- Control System Evaluation
- Two Position Control
- Proportional Control (P)
- Proportional + Integral Control (P+I)
- Proportional + Derivative Control (P+D)
- Proportional + Integral + Derivative Control (P+I+D)

Industrial control loops and control signals encompassing:
- Introduction
- Control Loops
- Converters (D to A and A to D)
- Multiplexing

EE307	Energy Efficient Building Design

This unit covers evaluating energy used in buildings and developing and documenting strategies/methods to effectively reduce energy use without compromising occupancy standards. It encompasses working safely, setting up and conducting evaluation measurements and evaluating energy use from measured parameters.

T1 Climate and thermal comfort encompassing:
 characteristics of the different Australian climatic types.
 use of climatic data in published and electronic forms to extract the quantities relevant to energy efficient design.
 relationship between climate and comfort using bioclimatic or psychrometric charts.
 calculation of heating or cooling degree days or degree hours for various locations.
 calculation of thermal neutrality for a given location.

T2 Solar geometry and radiation encompassing:
 definition of the terms: declination, hour angle, zenith angle, azimuth and altitude angles, the equation of time.
 conversion of solar time to local time and vice versa.
 position of the sun and the length of shadows with the aid of algorithms, tables, sun charts or computer software.
 daily irradiation incident on a wall, window or roof of a given tilt and orientation.
 relative summer and winter irradiation of windows facing the cardinal orientations.

T3 Heat transfer encompassing:
 thermal processes of conduction, convection and radiation apply to the transfer of heat in buildings.
 calculation of the summer and winter U-values of building elements using tables and software.
 calculation of the infiltration heat transfer in a building.

T4 Glazing Systems encompassing:
 different types of glazing systems and their characteristics.
 different types of shading devices and the window orientations for which they are most appropriate.
 solar heat gain for different glazing types and angles of incidence
 calculation of the average daily irradiation of a window partly shaded by eaves, using computer software.
 calculation of the average daily heat gain through a window partly shaded by eaves.

T5 Insulation encompassing:
 different types of insulation and where they are used.
 how different types of insulation are installed in roofs, walls

and floors.
 determination of the minimum R-values of roof insulation for different locations using Australian Standard AS2627 or similar standards.

T6 Thermal mass encompassing:
 advantages and disadvantages of using substantial thermal mass in different climate types and for different heating and cooling regimes.
 where thermal mass can be located in a building.
 explain what is meant by the following terms: time lag, decrement factor, admittance, response factor.

T7 Comfort control strategies encompassing:
 interpretation of the usefulness of a design strategy with the aid of a psychrometric chart showing control potential zones for a particular location.
 selection of the most useful comfort control strategies for Australian climatic regions.

T8 Energy efficiency in buildings encompassing:
 determination of the direction of the following: both true and magnetic, north winter and summer sunrise, winter and summer sunset.
 solar access in summer and winter to various possible house locations on a site and room locations within the house.
 how vegetation can be used to both funnel and deflect wind.
 using cross ventilation as a cooling strategy.

T9 Thermal performance of a building encompassing:
 heating requirements of a building using the heating degree day or hour method.
 dynamic performance predicted by a computer simulation program such as NatHERS or BERS.

T10 Integration of active solar systems encompassing:
 active solar system types available which can provide hot water, space heating and cooling.
 the best location on the roof, and the optimum tilt and orientation of the collector panels.
 function of the main components of an air or water-based solar space heating system.
 schematic of the fluid circuit of an air or water- based space heating system.
 main solar cooling system types.

T11 Energy rating schemes encompassing:
 differences in approach used by house energy rating schemes in Australia.
 energy performance of a number of houses using a computer simulation program such as NatHERS or BERS.
 other methods to reduce energy consumption within and outside a building including appliance efficiency, human behaviour changes, building management strategies and transportation minimisation.
 additional cost of energy efficiency measures and cost savings using life cycle cost or simple pay back methods according to Aust. Standard AS3595 and AS4536.

T12 Sustainable and safe building materials encompassing:
 common building materials and their embodied energy content.
 environmental impact of the production of various building materials.
 problems associated with the use or disposal of building materials.

EE308	Sustainability

This unit covers developing strategies to address environmental and sustainability issues in the energy sector. It encompasses working safely, apply extensive knowledge of sustainable energy systems and components and their operating parameters, gathering and analysing data, applying problem solving techniques, developing and documenting alternatives solutions

KS01-EK132A **Environmental and Sustainability strategies**

Evidence shall show an understanding of greenhouse reduction strategies to an extent indicated by the following aspects:
T1 Principles of sustainability encompassing:
 ways in which ecosystems moderate climate. ways in which ecosystems purify and store water.
 ways in which ecosystems recycle waste.

T2 Problems in a sustainable world encompassing:
 changes to Australian forest cover since white settlement, and the resulting loss of ecosystem and human benefits.
 changes to Australia‘s soils since white settlement, and the resulting loss of ecosystem and human benefits.
 changes to Australia‘s waterways since white settlement, and the resulting loss of ecosystem and human benefits.
 place of environmental accounting in quantifying Australia‘s environmental losses.
 limits to Australia‘s population carrying capacity.

T3 Sustainability principles encompassing:
 principles within sustainability including: environmental accounting and economies; full cost pricing; triple bottom line ethic; ecologically sustainable development; greenhouse gas abatement; energy efficiency; resource and water use efficiency; life cycle costing; renewable energy substitution, cleaner production; waste minimisation, reuse and recycling; ecological footprint.

T4 Addressing the problem of global warming encompassing:
 greenhouse gases and their sources and quantities that contribute to global warming.
 global warming impacts for Australia for 2030 and 2070 predicted by CSIRO modelling.
 requirements to achieve stable atmospheric concentrations of greenhouse gases.
 ecologically and economically sustainable methods for achieving these stable concentrations.

T5 Greenhouse gas emissions profile encompassing:
 goals and principles of the National Greenhouse Strategy
 what a greenhouse gas inventory is, why it is required, and the sectors to which it applies
 uses to which the National Greenhouse Gas Inventory can be applied.

T6 Understanding and communicating climate change and its impacts encompassing:
 the possible impact of climate change in Australia.
 techniques for improving the understanding of climate change
 techniques for communicating to and educating the general

public on greenhouse gas induced climate change.

T7 Partnerships for greenhouse action encompassing:
 actions achievable by each level of government to implement the NGS.
 methods by which the community activity can be engaged in the reduction of greenhouse gas emissions.
 initiatives that can be undertaken by the private sector to reduce greenhouse gas emissions.
 advantages of international partnerships.
 emissions trading system.

T8 Efficient and sustainable energy use and supply encompassing:
 techniques for reducing the greenhouse intensity of energy supply.
 types of renewable energy sources suitable for use in Australia.
 methods and technique for improving end-use efficiency.

T9 Efficient transport and sustainable urban planning encompassing:
 how integrating land use and transport planning can assist the greenhouse problem.
 how each of the following can be used to mitigate greenhouse gas; travel demand and traffic management strategies; encouraging greater use of public transport, walking and cycling; freight and logistics systems; improving vehicle fuel efficiency and fuel technologies;

T10 Greenhouse sinks and sustainable land management encompassing:
 how enhancing greenhouse sinks and encouraging sustainable forestry and vegetation management can complement the AGS.
 how greenhouse gas emissions are obtained from agricultural production and describe techniques to mitigate the emissions.

T11 Models of greenhouse best practice in industrial processes and waste management encompassing:
 types and methods of reducing greenhouse gas emissions from industry.
 methods of reducing methane emissions from waste

treatment and disposal.

T12 Adaptation to climate change encompassing:
 salient points in each of the key sectors that require analysis and the strategies required in the need for adaptation to climate change

EE309	Project Management

Part 1 Project Management

This unit covers the management of large electrical projects involving design, modifications, installation, and/or maintenance of systems and equipment. The unit encompasses management of safety, budget variation, personnel, resources, critical path timelines and completion documentation.

KS01-EG169A Electrical project management
Evidence shall show an understanding of managing electrical projects to an extent indicated by the following aspects:

T1 Defining project parameters encompassing:
- Project scope
- Project stakeholders and clients
- Project phases and the relationship between phases

T2 Time management concepts and standard practices
T3 Financial management encompassing:
- Financial management concepts
- Standard practices for managing project finances
- Project budgets
- Costs
- variations and estimations
- Invoicing against project phases/deliverables
- Acquittals and the like

T4 Quality management concepts and practices
T5 Human Resource management concepts and practices within a project
T6 Communication management concepts and practices within a project
T7 Risk management and contingencies encompassing:
- Risk management concepts
- Internal risks
- External risks
- Contingencies
- Standard practices for managing risk within a project
- Risk minimisation
- Risk removal; and the like

T8 Procurement management concepts and practices
T9 Physical Resource management concepts and practices relating to equipment, technology, information and facilities

T10 Contracts encompassing:
- Contract format
- Contract content
- Interpreting contract clauses
- Legal obligations of contract parties
- Working to contract specifications
- Documentation accompanying contracts such as schedules and the like

T11 Performance assessment and continuous improvement
T12 Engineering ethics principles
T13 Customer/Client relations encompassing:

Importance of customer/client relations
· Interpersonal skills that enhance customer/client
- Dispute resolution
- Customer/client relations strategies

T14 Electrical industry sector customs and practice encompassing:
- Equipment procurement, cost/benefit analysis and performance testing
- Typical approaches to planning and management
- Successful planning techniques
- Best practice management methods and styles

Part 2 Project Planning

This unit covers development and documentation of large electrical project proposals, milestones and completions. The unit encompasses, establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines.

KS01-EG170A Electrical project planning
Evidence shall show an understanding of planning projects and analyzing progress to an extent indicated by the following aspects:
T1 Project planning encompassing:
T2 Purpose of project planning Evidence shall show an understanding of managing electrical projects to an extent indicated by the following aspects:
T3 Defining project parameters encompassing:
- Project scope
- Project stakeholders and clients
- Project phases and the relationship between phases
- Time requirements and limitations
- Resource requirements and limitations
- Quality requirements and limitations

T4 Time management concepts and standard practices
T5 Financial management encompassing:

Financial management concepts
· Standard practices for managing project finances
· Project budgets
· Costs
· variations and estimations
· Invoicing against project phases/deliverables
- Acquittals and the like

T6 Quality management concepts and practices
T7 Human Resource management concepts and practices within a project
T8 Communication management concepts and practices within a project

T9 Risk management and contingencies encompassing:
- Risk management concepts
- Internal risks
- External risks
- Contingencies
- Standard practices for managing risk within a project
- Risk minimisation
- Risk removal; and the like

T10 Procurement management concepts and practices
T11 Physical Resource management concepts and practices relating to equipment, technology, information and facilities

T12 Contracts encompassing:
- Contract format
- Contract content
- Interpreting contract clauses
- Legal obligations of contract parties
- Working to contract specifications
- Documentation accompanying contracts such as schedules and the like

T13 Performance assessment and continuous improvement
T14 Engineering ethics principles
T15 Customer/Client relations encompassing:
- Importance of customer/client relations
- Interpersonal skills that enhance customer/client
- Dispute resolution
- Customer/client relations strategies

T16 Electrical industry sector customs and practice encompassing:
- Equipment procurement, cost/benefit analysis and performance testing

REQUIRED SKILLS AND KNOWLEDGE

- Typical approaches to planning and management
- Successful planning techniques
- Best practice management methods and styles
- Documents needed to plan a project
- Factors influencing sequence and restraints of project activities
- Critical path analysis covering graphical representation methods and methods of representing time/rates

T17 Critical path and project analysis encompassing:
- Purpose of critical path analysis
- Essential data
- Relational sequence of work activities
- Graphical representation methods
- Methods of representing time/rates
- Monitoring methods

T18 Electrical industry sector customs and practice encompassing:
- Equipment procurement, cost/benefit analysis and performance testing
- Typical approaches to planning and management
- Successful planning techniques
- Best practice management methods and styles

EE310	Engineering Officer Competency Report

This unit covers complying and producing an energy sector report. It encompasses determining the safety requirements are met and all regulatory responsibilities are adhered to. The person competent in this unit must demonstrate an ability to identify information sources and collect and analyse and format information applicable to the electrotechnology industry and produce a report as required.

KS01-EE124A Energy sector detailed report writing
Evidence shall show an understanding of analysis, decision making and reporting as they apply to engineering work functions to an extent indicated by the following aspects:
T1 Communicating with personnel encompassing:
- Oral communications
- Written procedures and work instructions

T2 Communicating with suppliers
T3 Communicating with customers
T4 Purpose and extent of maintaining work activities records in an enterprise encompassing:
- Types of records for maintaining work activities in an enterprise
- Methods for recording and maintaining work records
- Work records required by regulation requirements
- Using basic computer functions encompassing:

 Starting up
 Selecting application
 Entering information
 Saving
 Printing

T5 Techniques of analysis encompassing:

 use of appropriate sampling techniques to collect data.
 types of data and classification.
 effective questionnaire design
 data collection errors.
 frequency tables.
 statistical diagrams – drawing and interpretation.
 the general shape of a frequency distribution.
 different types of diagrams.
 mean time between failures calculations

T6 Summary of statistics encompassing

· measures of central tendency
· measures of dispersion
· a 5-point summary for a given data set, box and whisker plot distribution
 data sets comparison using measures of centre and spread
 the effect of outliers on measures of centre and spread
 use computer programs or calculators to simplify calculations

T7 Correlation and regression encompassing:

 bivariate data and scatter diagrams.
 product-moment correlation coefficient calculation and interpretation.
 difference between causation and correlation.
 equations of regression lines from bivariate data with a calculator and line plotting on a scatter diagram.
 using the equation of regression to make predictions in practical situations.
 investigation of practical problems using correlation and regression.

T8 Investigation and reporting encompassing:

 presentation of a well formatted report with a clearly stated aim.
 using the internet to obtain relevant data.
 description of the statistical method and design chosen to meet the aim of the investigation.
 statistical analysis and results reporting.
 evaluation and interpretation of the results of the investigation.
 discussion of the investigation with reference to real world applications.
 chronology of the investigation.

STAGE (1)DIPLOMA IN CIVIL ENGINEERING (Each 2.5 Credits) (30 Pt)

Certificate in Construction Studies
CE 106A Detailed Construction & Building Construction Materials
CE 104 A Building Drawing
CE 101 Mathematics (EE201)
CE 102 Physics (EE204)
CE 108 Electrical Principle

DIPLOMA IN CIVIL ENGINEERING
CE 104 Fluid Dynamics
CE 105 Hydraulic
CE 106 Hydrology
CE 107 Sanitation-and-Water-supply
CE 109 Energy Efficient Building Design (EE309)
CE 110 Building Construction
EE102 Basic Electrical Fitting & Wiring

Year (2) Advanced Diploma in Civil Engineering Program(30 pt) (Each 2.5 pt)

YEAR (2) SEMESTER (1)

CE103-Surveying
CE111A-Road+Bridges
CE113 Structure 1
CE114 Structure 2
CE115 Estimating & Specification

YEAR (2) SEMESTER (2)

EE104 Electrical Equipments Safety Protection

EE105 Electrical Installation Design

ME 102 Engineering Thermodynamics

ME 334 Airconditioning and Refrigeration

EE106 Advanced Electrical Wiring

CE 112 Engineering Mechanics+ ME 301 Applied Mathematics
EE308 Sustainability

CE 101	Mathematics (EE201)

This unit covers the application of computational processes to solve engineering problems. It encompasses working safely, applying problem solving techniques, using a range of mathematical processes, providing solutions to electrical/electronics engineering problems and justifying such solutions.
Note. Typical engineering problems are those encountered in meeting requirements in a design brief, meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions

KS01-EE126A Electrotechnology engineering maths
Evidence shall show an understanding of electrotechnology engineering maths to an extent indicated by the following aspects:
T1 Rational, irrational numbers and basic algebra
 simplification of expressions involving square roots and cube roots
 scientific and engineering notation
 evaluation of expressions using a calculator
 convert units of physical quantities using unity brackets
 substitute given values into formulae to find physical quantities
 manipulate algebraic expressions using mathematical operations in their correct order,

the laws of indices, expansion of brackets and collecting like terms
T2 Algebraic manipulation
 Factorise algebraic expressions using common factors
 Factorise quadratic expressions using trial and error on the factors of the coefficients
 Simplify algebraic fractions using common denominators and cancelling
 Solve simple one variable equations including algebraic fractions
 Find the quotient and remainder given a linear divisor.
 Transpose formulae to find a required variable.
T3 Laws of indices
 Conversion between decimal notation, scientific notation and engineering notation
 Laws of indices: positive /negative values, multiplication/division, fractional values, index equals zero
 Logarithmic laws: multiply/divide
 solution of exponential equations using logarithms, substitution and solution of relevant formulae involving exponents or logarithms
 Graphs of exponential functions, 10x and ex and the inverses log10(x) and loge(x) functions on log-linear graphs
 Convert numbers into scientific and engineering notation using the laws of indices
 Manipulate and simplify arithmetic and algebraic expressions using the laws of indices and logarithms
 Express logarithms as indices.
 Perform logarithmic operations.
 Determine logarithms and antilogarithms to base 10, using a scientific calculator.
 Determine logarithms and antilogarithms to base e, using a scientific calculator.
 Convert logarithmic values from base 10 to base e and vice versa.
 Sketch given functions on log-linear graphs
T4 Estimations, errors and approximations
 Errors in measurement
 Maximum probable error
 Show awareness of errors in measurement and of giving results in appropriate number of significant figures
 Use estimations and approximations to check the reasonableness of results.
T5 Plane figures – triangles and basic trigonometry
 Angles in a triangle
 Isosceles and equilateral triangles
 Congruent triangles
 Similar triangles
 Pythagoras' theorem
 Area of triangles
 Basic trigonometry functions
 Degrees, radians
 The ratios: sin, cos, tan, cosec, sec, cot.
 Inverse trig functions
 Sine and cosine rules
T6 Plane figures - quadrilaterals and circles
 Types and properties of quadrilaterals
 Areas and perimeters of regular quadrilaterals
 Lengths of arcs
 Angles in a circle - degrees
 Angles in a circle - radians
 Lengths of chord segments
 Tangents to circles
 Circumference and area of circles
 Names and characteristics of common polygons
T7 Graphs of Trigonometric functions
 Graph trigonometric functions and solve trigonometric equations.

 Simplify trigonometric expressions using trigonometric identities
 Convert angular measure in degrees to radians and vice versa
 Graph trigonometric functions including graphs of y = sin x and y = cos x
 Using vocational applications of current or voltage as a function of time, consider changes in amplitude, consider changes in frequency.
 Examine relationships of frequency, period and angular velocity.
 Sketch graphs of the form f(t) = a sin φt and f(t) = a cos φt, where a is the peak voltage or current, and φ is the angular velocity
 Solve graphically equations of the form f(t) = a sin φt and f(t) = a cos φt

T8 Graphs of linear functions
 The number plane
 Gradient and x and y intercepts of a straight line
 Equation of a straight line length and mid-point of a straight line segment
 Function notation

T9 Simultaneous equations
 Graphical solutions
 Substitution
 Elimination
 Solve 2 linear simultaneous equations both algebraically and graphically.
T10 Matrices
 Perform the basic operations on matrices up to 3 x 3
 Manipulate matrix equations and expressions
 Recognise inverse and identity matrices up to 3 x 3 and use to solve systems of linear equations.
 Find determinants up to 3 x 3 and use to solve systems of linear equations.
 Solve problems involving more than two simultaneous equations.
 State the limitations of graphical methods of solution.
 Distinguish between a matrix and an array.
 Describe the null, diagonal and unit matrix
 Describe and identify a singular/non-singular matrix

T11 Quadratic functions
 Graphs of quadratic functions represented by parabolas and the significance of the leading coefficient.
 Graph quadratic functions and solve quadratic equations.
 Sketch and interpret the graphs of quadratic functions showing the significance of the leading coefficient and the zeros
 Solve quadratic equations by factoring or using quadratic formula
 Solve simultaneously linear and quadratic equations algebraically and geometrically
 Interpret verbally formulated problems involving quadratic and linear equations and solve.
T12 Exponential and logarithmic functions
 Transform non-linear functions (including exponential) to linear forms and plot data.
 Draw curves of best fit, interpolate data and estimate constants in suggested relationships.

Graph exponential and logarithmic functions and solve exponential and logarithmic equations.
 Sketch the graphs of simple exponential and logarithmic functions showing behaviour for large and small values

T13 Vectors and Phasors

 The vector as an expression of magnitude and direction
 The vector sum of x and y values in terms of magnitude and direction
 Rectangular components of vectors in the form $x = r \cos \theta$ and $y = r \sin \theta$
 Rectangular-polar and polar-rectangular conversion
 Vector addition and subtraction
 Express rectangular components of vectors in the form $x = r \cos \theta$ and $y = r \sin \theta$

T14 Complex numbers
 Definitions and notation of complex numbers
 Complex numbers as vectors on an Argand diagram
 laws of complex numbers and apply the laws in suitable calculations.
 Plot complex numbers on the Argand plane.
 Express vectors as complex numbers and perform suitable calculations.
 Calculate the conjugate of a complex number.
 Using a calculator for rectangular-polar and polar-rectangular conversions.

CE 108 Electrical Principle

This unit covers determining correct operation of single source d.c. series, parallel and series-parallel circuits and providing solutions as they apply to various electrotechnology work functions. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predictable problems in single and multiple path circuits.

Evidence shall show an understanding of electrical fundamentals and direct current multiple path circuits to an extent indicated by the following aspects:
T1 Basic electrical concepts encompassing:
 electrotechnology industry
 static and current electricity
 production of electricity by renewable and non renewable energy sources
 transportation of electricity from the source to the load via the transmission and distribution systems
 utilisation of electricity by the various loads
 basic calculations involving quantity of electricity, velocity and speed with relationship to the generation and transportation of electricity.

T2 Basic electrical circuit encompassing:
 symbols used to represent an electrical energy source, a load, a switch and a circuit protection device in a circuit diagram
 purpose of each component in the circuit
 effects of an open-circuit, a closed-circuit and a short-circuit
 multiple and sub-multiple units

T3 Ohm’s Law encompassing:
 basic d.c. single path circuit.
 voltage and currents levels in a basic d.c. single path circuit.
 effects of an open-circuit, a closed-circuit and a short-circuit on a basic d.c. single path relationship between voltage and current from measured values in a simple circuit
 determining voltage, current and resistance in a circuit given any two of these quantities
 graphical relationships of voltage, current and resistance
 relationship between voltage, current and resistance

T4 Electrical power encompassing:
 relationship between force, power, work and energy
 power dissipated in circuit from voltage, current and resistance values
 power ratings of devices
 measurement electrical power in a d.c. circuit

 effects of power rating of various resistors

T5 Effects of electrical current encompassing:
 physiological effects of current and the fundamental principles (listed in AS/NZS 3000) for protection against the this effect
 basic principles by which electric current can result in the production of heat; the production of magnetic fields; a chemical reaction
 typical uses of the effects of current
 mechanisms by which metals corrode
 fundamental principles (listed in AS/NZS3000) for protection against the damaging effects of current

T6 EMF sources energy sources and conversion electrical energy encompassing:
 basic principles of producing a emf from the interaction of a moving conductor in a magnetic field.
 basic principles of producing an emf from the heating of one junction of a thermocouple.
 basic principles of producing a emf by the application of sun light falling on the surface of photovoltaic cells
 basic principles of generating a emf when a mechanical force is applied to a crystal (piezo electric effect)
 principles of producing a electrical current from primary, secondary and fuel cells
 input, output, efficiency or losses of electrical systems and machines
 effect of losses in electrical wiring and machines
 principle of conservation of energy

T7 Resistors encompassing:
 features of fixed and variable resistor types and typical applications
 identification of fixed and variable resistors
 various types of fixed resistors used in the Electro technology Industry. e.g. wire-wound, carbon film, tapped resistors.
 various types of variable resistors used in the Electro technology Industry e.g. adjustable resistors: potentiometer and rheostat; light dependent resistor (LDR); voltage dependent resistor (VDR) and temperature dependent resistor (NTC, PTC).
 characteristics of temperature, voltage and light dependent resistors and typical applications of each power ratings of a resistor.
 power loss (heat) occurring in a conductor.
 resistance of a colour coded resistor from colour code tables and confirm the value by measurement.
 measurement of resistance of a range of variable' resistors under varying conditions of light, voltage, temperature conditions.
 specifying a resistor for a particular application.

T8 Series circuits encompassing:
 circuit diagram of a single-source d.c. 'series' circuit.
 Identification of the major components of a 'series' circuit: power supply; loads; connecting leads and switch
 applications where 'series' circuits are used in the Electro technology industry.
 characteristics of a 'series' circuit - connection of loads, current path, voltage drops, power dissipation and affects of an open circuit in a 'series' circuit.
 the voltage, current, resistances or power dissipated from measured or given values of any two of these quantities
 relationship between voltage drops and resistance in a simple voltage divider network.
 setting up and connecting a single-source series dc circuit
 measurement of resistance, voltage and current values in a single source series circuit effect of an open-circuit on a series connected circuit

T9 Parallel circuits encompassing:
 schematic diagram of a single-source d.c. ‘parallel’ circuit.
 major components of a ‘parallel’ circuit (power supply, loads, connecting leads and applications where ‘parallel’ circuits are used in the Electrotechnology industry.
 characteristics of a ‘parallel’ circuit. (load connection, current paths, voltage drops, power dissipation, affects of an open circuit in a ‘parallel’ circuit).
 relationship between currents entering a junction and currents leaving a junction
 relationship between branch currents and resistances in a two branch current divider network.
 calculation of the total resistance of a ‘parallel’ circuit.
 calculation of the total current of a ‘parallel’ circuit.
 Calculation of the total voltage and the individual voltage drops of a ‘parallel’ circuit.
 setting up and connecting a single-source d.c. parallel circuit
 resistance, voltage and current measurements in a single-source parallel circuit
 voltage, current, resistance or power dissipated from measured values of any of these quantities
 output current and voltage levels of connecting cells in parallel.

T10 Series/parallel circuits encompassing:
 schematic diagram of a single-source d.c. ‘series/parallel’ circuit.
 major components of a ‘series/parallel’ circuit (power supply, loads, connecting leads and switch)
 applications where ‘series/parallel’ circuits are used in the Electrotechnology industry.
 characteristics of a ‘series/parallel’ circuit. (load connection, current paths, voltage drops, power dissipation, affects of an open circuit in a ‘series/parallel’ circuit).
 relationship between voltages, currents and resistances in a bridge network.
 calculation of the total resistance of a ‘series/parallel’ circuit.
 calculation of the total current of a ‘series/parallel’ circuit.
 calculation of the total voltage and the individual voltage drops of a ‘series/parallel’ circuit.
 setting up and connecting a single-source d.c. series/ parallel circuit
 resistance, voltage and current measurements in a single-source d.c. series / parallel circuit
 the voltage, current, resistances or power dissipated from measured values of any two of these quantities

T11 Factors affecting resistance encompassing:
 four factors that affect the resistance of a conductor (type of material, length, cross-sectional area and temperature)
 affect the change in the type of material (resistivity) has on the resistance of a conductor.
 affect the change in ‘length’ has on the resistance of a conductor.
 affect the change in ‘cross-sectional area’ has on the resistance of a conductor.

effects of resistance on the current-carrying capacity and voltage drop in cables.
 calculation of the resistance of a conductor from factors such as conductor length, cross-sectional area, resistivity and changes in temperature
 using digital and analogue ohmmeter to measure the change in resistance of different types of conductive materials (copper, aluminium, nichrome, tungsten) when those materials undergo a change in type of material length, cross-sectional area and temperature.

T12 Effects of meters in a circuit encompassing:
 selecting an appropriate meter in terms of units to be measured, range, loading effect and accuracy for a given application.
 measuring resistance using direct, volt-ammeter and bridge methods.

 instruments used in the field to measure voltage, current, resistance and insulation resistance and the typical circumstances in which they are used.
 hazards involved in using electrical instruments and the safety control measures that should be taken.
 operating characteristics of analogue and digital meters.
 correct techniques to read the scale of an analogue meters and how to reduce the 'parallax' error.
 types of voltmeters used in the Electrotechnology industry – bench type, clamp meter, Multimeter, etc.
 purpose and characteristics (internal resistance, range, loading effect and accuracy) of a voltmeter.
 types of voltage indicator testers. e.g. LED, neon, solenoid, volt-stick, series tester, etc. and explain the purpose of each voltage indicator tester.
 operation of various voltage indicator testers.
 advantages and disadvantages of each voltage indicator tester.
 various types of ammeters used in the Electrotechnology industry – bench, clamp meter, multimeter, etc.
 purpose of an ammeter and the correct connection (series) of an ammeter into a circuit.
 reasons why the internal resistance of an ammeter must be extremely low and the dangers and consequences of connecting an ammeter in parallel and/or wrong polarity.
 selecting an appropriate meter in terms of units to be measured, range, loading effect and accuracy for a given application
 connecting an analogue/digital voltmeter into a circuit ensuring the polarities are correct and take various voltage readings.
 loading effect of various voltmeters when measuring voltage across various loads.
 using voltage indicator testers to detect the presence of various voltage levels.
 connecting analogue/digital ammeter into a circuit ensuring the polarities are correct and take various current readings.

T13 Resistance measurement encompassing:

 Identification of instruments used in the field to measure resistance (including insulation resistance) and the typical circumstances in which they are used.
 the purpose of an Insulation Resistance (IR) Tester.
 the parts and functions of various analogue and digital IR Tester (selector range switch, zero ohms adjustment, battery check function, scale and connecting leads).
 reasons why the supply must be isolated prior to using the IR tester.
 where and why the continuity test would be used in an electrical installation.
 where and why the insulation resistance test would be used in an electrical installation.
 the voltage ranges of an IR tester and where each range may be used. e.g. 250 V d.c, 500 V d.c and 1000 V d.c
 AS/NZS3000 Wiring Rules requirements – continuity test and insulation resistance (IR) test.
 purpose of regular IR tester calibration.
 the correct methods of storing the IR tester after use
 carry out a calibration check on a IR Tester
 measurement of low values of resistance using an IR tester continuity functions.
 measurement of high values of resistance using an IR tester insulation resistance function.
 volt-ammeter (short shunt and long shunt) methods of measuring resistance.
 calculation of resistance values using voltmeter and ammeter reading (long and short shunt connections)
 measurement of resistance using volt-ammeter methods

T14 Capacitors and Capacitance encompassing:

 basic construction of standard capacitor, highlighting the: plates, dielectric and connecting leads
 different types of dielectric material and each dielectric's relative permittivity.

 identification of various types of capacitors commonly used in the Electrotechnology industry (fixed value capacitors -stacked plate, rolled, electrolytic, ceramic, mica and Variable value capacitors – tuning and trimmer)
 circuit symbol of various types of capacitors: standard; variable, trimmer and polarised
 terms: Capacitance (C), Electric charge (Q) and Energy (W)
 unit of: Capacitance (Farad), Electric charge (Coulomb) and Energy (Joule)
 factors affecting capacitance (the effective area of the plates, the distance between the plates and the type of dielectric) and explain how these factors are present in all circuits to some extent.
 how a capacitor is charged in a d.c. circuit.
 behaviour of a series d.c. circuit containing resistance and capacitance components. - charge and discharge curves

the term 'Time Constant' and its relationship to the charging and discharging of a capacitor.
 calculation of quantities from given information: Capacitance (Q = VC); Energy (W =½CV2); Voltage (V = Q/C)
 calculation one time constant as well as the time taken to fully charge and discharge a given capacitor. (τ = RC)
 connection of a series d.c. circuit containing capacitance and resistor to determine the time constant of the circuit

T15 Capacitors in Series and Parallel encompassing:
 hazards involved in working with capacitance effects and the safety control measures that should be taken.
 safe handling and the correct methods of discharging various size capacitors
 dangers of a charged capacitor and the consequences of discharging a capacitor through a person
 factors which determine the capacitance of a capacitor and explain how these factors are present in all circuits to some extent.
 effects of capacitors connected in parallel by calculating their equivalent capacitance.

CE 102 Physics (EE 204)

This unit covers the law of physics and how they apply to solving electrotechnology related problems. It encompasses working safely, knowledge of measurements of physical phenomena, linear and angular motion, harmonic motion, wave theory, optics, acoustics and heat capacity and transfer, use of measurement techniques, solving physics related problems and documenting justification for such solutions.

KS01-EE082A Electrotechnology engineering physics
Evidence shall show an understanding of electro engineering physics to an extent indicated by the following aspects:
T1 Measurement encompassing
 SI units in measurement of physical phenomena
 Uncertainty and tolerance

T2 Linear motion
T3 Angular motion
T4 Simple harmonic motion and vibration
T5 Wave theory
 Interference
 Diffraction
T6 Electromagnetic waves and propagation
T7 Optics
 Mirrors and lenses

 Optical fibre

T8 Acoustics and ultrasonics
T9 Heat capacity and heat transfer
 Fluid power

CE 109 Energy Efficient Building Design (EE309)

This unit covers evaluating energy used in buildings and developing and documenting strategies/methods to effectively reduce energy use without compromising occupancy standards. It encompasses working safely, setting up and conducting evaluation measurements and evaluating energy use from measured parameters.

T1 Climate and thermal comfort encompassing:
 characteristics of the different Australian climatic types.
 use of climatic data in published and electronic forms to extract the quantities relevant to energy efficient design.
 relationship between climate and comfort using bioclimatic or psychrometric charts.
 calculation of heating or cooling degree days or degree hours for various locations.
 calculation of thermal neutrality for a given location.

T2 Solar geometry and radiation encompassing:
 definition of the terms: declination, hour angle, zenith angle, azimuth and altitude angles, the equation of time.
 conversion of solar time to local time and vice versa.
 position of the sun and the length of shadows with the aid of algorithms, tables, sun charts or computer software.
 daily irradiation incident on a wall, window or roof of a given tilt and orientation.
 relative summer and winter irradiation of windows facing the cardinal orientations.

T3 Heat transfer encompassing:
 thermal processes of conduction, convection and radiation apply to the transfer of heat in buildings.
 calculation of the summer and winter U-values of building elements using tables and software.
 calculation of the infiltration heat transfer in a building.

T4 Glazing Systems encompassing:
 different types of glazing systems and their characteristics.
 different types of shading devices and the window orientations for which they are most appropriate.
 solar heat gain for different glazing types and angles of incidence
 calculation of the average daily irradiation of a window partly shaded by eaves, using computer software.
 calculation of the average daily heat gain through a window partly shaded by eaves.

T5 Insulation encompassing:
 different types of insulation and where they are used.
 how different types of insulation are installed in roofs, walls and floors
.
 determination of the minimum R-values of roof insulation for different locations using Australian Standard AS2627 or similar standards.

T6 Thermal mass encompassing:
 advantages and disadvantages of using substantial thermal mass in different climate types and for different heating and cooling regimes.
 where thermal mass can be located in a building.
 explain what is meant by the following terms: time lag, decrement factor, admittance, response factor.

T7 Comfort control strategies encompassing:
 interpretation of the usefulness of a design strategy with the aid of a psychrometric chart showing control potential zones for a particular location.
 selection of the most useful comfort control strategies for Australian climatic regions.

T8 Energy efficiency in buildings encompassing:

- determination of the direction of the following: both true and magnetic, north winter and summer sunrise, winter and summer sunset.
- solar access in summer and winter to various possible house locations on a site and room locations within the house.
- how vegetation can be used to both funnel and deflect wind.
- using cross ventilation as a cooling strategy.

T9 Thermal performance of a building encompassing:

- heating requirements of a building using the heating degree day or hour method.
- dynamic performance predicted by a computer simulation program such as NatHERS or BERS.

T10 Integration of active solar systems encompassing:

- active solar system types available which can provide hot water, space heating and cooling.
- the best location on the roof, and the optimum tilt and orientation of the collector panels.
- function of the main components of an air or water-based solar space heating system.
- schematic of the fluid circuit of an air or water- based space heating system.
- main solar cooling system types.

T11 Energy rating schemes encompassing:

- differences in approach used by house energy rating schemes in Australia.
- energy performance of a number of houses using a computer simulation program such as NatHERS or BERS.
- other methods to reduce energy consumption within and outside a building including appliance efficiency, human behaviour changes, building management strategies and transportation minimisation.
- additional cost of energy efficiency measures and cost savings using life cycle cost or simple pay back methods according to Aust. Standard AS3595 and AS4536.

T 1 2 Sustainable and safe building materials encompassing:

- common building materials and their embodied

energy content.
 environmental impact of the production of various building materials.
 problems associated with the use or disposal of building materials.

EE102	Basic Electrical Fitting & Wiring

This unit covers fixing, securing and mounting techniques as apply in the various electrotechnology work functions. It encompasses the safe use of hand and portable power tools, safe lifting techniques, safe use of ladders and elevated platforms and the selection and safe application of fixing devices and supporting accessories/equipment.

KS01-EE105A Fixing and support devices/techniques

Evidence shall show an understanding of accessories and support and fixing device and methods and their use to an extent indicated by the following aspects:

T1. Device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to hollow walls encompassing:

 types and safe application of devices for hollow wall fixing and support
 methods/techniques used to fix/support to wood, hollow wall, masonry blocks, plasterboard, panelling
 types and safe application of fixing devices used in the electrotechnology industry for wood and hollow wall structures (wood screws, coach bolts, self-tappers, self drilling, metal thread, hollow wall anchors, behind plaster brackets, stud brackets, plasterboard devices, toggle devices)
 types of tools used for hollow wall fixing and supporting.
 using various fixing methods to fix/support to hollow walls.

T2. Device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to solid walls encompassing:

 types and safe application of devices used for solid wall fixing and support
 methods/techniques used in to fix to masonry and concrete structures
 fixing devices used in the electrotechnology industry for solid wall structures (wall-plugs, expanding concrete fixing devices, gas powered fixing tools, powder actuated fixing tools, loxins, dynabolts, chemical devices)
 regulatory requirements for use of powder fixing tools.
 hand and power tools used in fixing and supporting accessories
 using various fixing methods to fix/support to solid walls

T3. Device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to metal fixing encompassing:

 accessories that may be fixed to metal (saddle clips, conduits, brackets, switches)
 techniques for fixing to metal
 fixing devices: coach bolts, self-tappers, metal thread bolts, hollow wall anchors, rivets
 fixing tools - spanners, screwdrivers, power screw drivers, pop riveters, files, reamers
 OH&S issues related to drilling, cutting, eye protection, metal filings, swarf, noise
 Using power drills, drill bits, change drill speeds.
 Install a fixing device and accessory capable of supporting up to 20 kg on the metal plate.

T4. Securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories using fixing adhesives and tapes encompassing:

 types and safe application of using adhesives and tapes as fixing devices (load limits of different commercial products)
 accessories that may be fixed using adhesives and tapes

 techniques for the application of adhesives and tapes
 tools used to apply and cut adhesives and tapes
 hazards and safety measures when working with adhesives and chemical fixing devices (fumes, cutting, eye protection, physical contact, hand protection, ingestion)

EE104	Electrical Equipments Safety Protection

This unit covers the arrangement and termination of circuits, control and protection devices and systems for electrical installations operating at voltages up to 1,000 V a.c. or 1,500 V d.c. It encompass knowledge and application of schemes for protection of persons and property, correct functioning, ensuring compatibility with the supply, arranging installation into circuits and selecting and arranging switchgear/controlgear and protective devices to meet compliance requirements and documenting arrangement decisions

KS01-EG063A Electrical installations — arrangement, control and protection
Evidence shall show an understanding of circuit arrangements, control and protection of electrical installations that comply with the Wiring Rules and Service Rules to an extent indicated by the following aspects:
T1 Safety principles to which electrical systems in building and premises shall comply.
 Safety principles are given in Part1 (Section 1) of the Wiring Rules AS/NZS 3000 with deemed-to-comply requirements given in Sections 2 to 8.
 Compliant methods for providing protection - include those for providing protection against direct and indirect contact; thermal effects; unwanted voltages; overcurrent; fault currents; overload; overvoltage; injury from mechanical movement.
 Requirements for installation design and selection of equipment - includes compliant protection arrangements; correct functioning; compatibility with supply; estimation of maximum demands; voltage drop considerations; arrangement of circuits and the like

T2 Circuit and control arrangements encompassing:
 reason for dividing electrical installations into circuits
 factors that shall be considered in determining the number and type of circuits required for an installation.
 daily and seasonal demand for lighting power, heating and other loads in a given installation.
 number and types of circuits required for a particular installation.
 diagrams/schedules of circuits for given installations.
 application and arrangements of SELV and PELV circuits
 application and arrangement of an isolated supply

T3 Hazards and risks in an electrical installation encompassing:
 effects on the human body of various levels of a.c. and d.c. current and duration of current flow for various current paths.
 risk of ignition of flammable materials due the thermal effects of current or electric arcs in normal service of an electrical installation.
 risk of injury from mechanical movement of electrically actuated equipment.
 Protection against direct contact (basic protection)
 acceptable methods
 use of extra-low voltage

T4 Protection against indirect contact encompassing:
 indirect contact with live parts of an electrical installation may occur.
 methods and devices that comply with the Wiring Rules for providing protection against indirect contact.
 components of the 'automatic disconnection of supply' method of protection against indirect contact.
 the terms ‘touch voltage’ and ‘touch current’.
 the current path when a short circuit fault to exposed conductive parts of an appliance

occurs.
 protection against indirect contact is by the use of Class II equipment and by electrical separation.
 additional protection by use of Residual Current Devices (RCDs)
 protection against indirect contact by use of extra-low voltage and electrical separation.
 Protection requirements for damp situations.

T5 Earthing encompassing:
 the terms: earthed, earthed situation, earth electrode, equipotential bonding, multiple earthed neutral (MEN) system, protective earth-neutral (PEN) conductor, main earthing conductor, protective earthing (PE) conductor, functional earthing, MEN link.
 selection of minimum size-earthing conductor for a range of active conductor sizes and materials.
 parts of an earthing system and the purpose of each.
 typical arrangement for a MEN earthing system.
 arrangements of protective earthing conductors that comply with the Wiring Rules.
 requirements for equipotential bonding in a range of installation situations.
 Installation of a MEN earthing system for a single phase installation

T6 Protection against overload and short circuit current encompassing:
 overload current or fault currents in an electrical installation.
 equivalent circuit of an earth fault-loop
 level of fault current possible at a given point in an installation from the fault-loop impedance and data from the electricity distributor.
 methods and devices that comply with the Wiring Rules AS/NZS 3000 for providing protection against the damaging effects of overload and fault current
 requirements for co-ordination between protective devices and conductors
requirements for co-ordination of protection devices for discrimination and back-up protection.

T7 Devices for automatic disconnection of supply encompassing:
 operating principles of thermal/magnet circuit breakers.
 operating principles of common types of fuses.
 operating principles of residual current devices (RCD).
 time/current curves tripping characteristics of various types of circuit breakers that comply with the requirements of the Wiring Rules.
 time/current curves fusing characteristics of various types of fuses that comply with the requirements of the Wiring Rules.
 time/current curves tripping characteristics of various types of RCDs that comply with the requirements of the Wiring Rules.
 factors in a fault loop that will affect the impedance of the circuit.
 maximum impedance of an earth fault-loop to ensure operating of a protection device.
 selecting a fuse for fault current limiting protection.
 drawing switchboard wiring arrangements of 2-pole RCDs, 4-pole RCDs, combination RCD/MCBs.

T8 Protection against over voltage and under voltage encompassing:
 causes of over voltage and how this may affect the electrical system.
 methods for protection against over voltage.
 causes of under voltage and how this may affect the electrical system.
 methods for protection against under voltage.

T9 Control of an electrical installation and circuits encompassing:
 switch types, current and voltage ratings and IP rating and where these apply.
 switching requirements for isolation, emergency, mechanical maintenance and functional control.

 control arrangement for complete installations with and without safety services and an alternative supply.

T10 Switchboards / distribution boards encompassing:
 Purpose, types and applications.
 Physical and circuit arrangements for whole current and CT metering.
 Physical and circuit arrangements of main switches, circuit protection devices, fault-current limiters and metering equipment and other distributor equipment.
 compliance requirements (includes location and access, arc fault protection, identification, construction suitability, equipment marking, wiring, fire protection and arc-fault protection).

EE105	Electrical Installation Design

This unit covers selecting wiring systems and cables for electrical installations operating at voltages up to 1,000V a.c. or 1,500 V d.c. It encompass knowledge and application of wiring systems and cable types, selecting wiring system compatible with the installation conditions, selecting cables that comply with required current-carrying capacity and voltage drop and earth fault-loop impedance limitations, coordination between protective devices and conductors and documenting selection decisions

KS01-EG107A Electrical installation — cable selection and co-ordination
Evidence shall show an understanding of selecting cables and ensuring co-ordination between protection device and conductors in electrical installations that comply with the Wiring Rules, Selection of cables standards and Service Rules to an extent indicated by the following aspects:
T1 Performance requirements - design and safety encompassing:
 harmful effects against which the design of an electrical installation must provide protection.
 performance standards of a correctly functioning electrical installation.
 supply characteristics that shall be considered when designing an electrical installation.
 acceptable methods for determining the maximum demand in consumer's mains and sub-mains.
 AS/NZS 3000 requirements limiting voltage drop in an installation.
 reason for dividing electrical installations into circuits and the factors that shall determine their number and type.
 typical external factors that may damage an electrical installation and that shall be considered in the installation design.
 methods for protecting persons and livestock against direct and indirect contact with conductive parts and the typical application of each.
 acceptable methods of protection against the risks of ignition of flammable materials and injury by burns from the thermal effects of current, in normal service.
 likely sources of unwanted voltages and the methods for dealing with this potential hazard.
 acceptable methods for protecting persons and livestock against injury and property against damage from the effects of over current.
 requirement for protection against fault current.
 requirement for protection against the harmful effects of faults between live parts of circuits supplied at different voltages.
 need for protection against injury from mechanical movement and how this may be achieved.
 features of 'fire rated construction' and how the integrity of the fire rating can be maintained in relation to electrical installation.

T2 Final subcircuit arrangements encompassing:
 factors that shall be considered in determining the number and type of circuits required for an installation.

 daily and seasonal demand for lighting, power, heating and other loads in a given installation.
 number and types of circuits required or a particular installation.
 current requirements for given final subcircuits.
 layout/schedule of circuits for given installations.

T3 Factors affecting the suitability of wiring systems encompassing:
 wiring systems typically used with various construction methods and particular environments.
 installation conditions that may affect the current-carrying capacity of cables.
 external influences that may affect the current-carrying capacity and/or may cause damage to the wiring system.
 AS/NZS 3000 requirements for selecting wiring systems for a range of circuits, installation conditions and construction methods into which the wiring system is to be installed. Note: Wiring systems include cable enclosures, underground wiring, aerial wiring, catenary support, emergency systems, busbar trunking and earth sheath return.

T4 Maximum demand on consumer’s mains/submains encompassing:
 acceptable methods for determining the maximum demand on an installation’s consumer’s mains and submains.
 maximum demand for the consumer's mains for given installations up to 400 A per phase.
 maximum demand for given submains.

T5 Cable selection based on current carrying capacity requirements encompassing:
 installation conditions for a range of wiring systems and applications.
 external influences that require the use of a derating factor.
 AS/NZS 3000 requirements for coordination of cables and protection devices.
 AS/NZS 3008 used to select conductor size based on the maximum current requirement for a given installation condition including any applicable derating factors.

T6 Cable selection based on voltage drop requirements encompassing:
 AS/NZS 3000 requirements for maximum voltage drop in an installation.
 relevant tables in AS/NZS 3008 for unit values of voltage drop.
 calculation of the expected voltage drop in a given circuit.
 selecting cables to satisfy voltage drop requirements in addition to current carrying capacity requirements.

T7 Cable selection based on fault loop impedance requirements encompassing:
 AS/NZS 3000 requirements for maximum fault loop impedance in an installation.
 relevant tables in AS/NZS 3008 to determine cable impedances.
 calculation of the expected fault loop impedance for a given circuit arrangement.
 selecting cables to satisfy fault loop impedance requirements in addition to current carrying capacity requirements and voltage drop requirements.

T8 Selecting protection devices encompassing:
 acceptable methods of protection against indirect contact.
 AS/NZS 3000 requirements for selecting methods and devices to protect against indirect contact for a range of installation types and conditions.
 coordination between conductors and protection devices to ensures the protection of cables from over heating due to over current.
 possible injuries to persons and livestock from hazards due to a short circuit.
 AS/NZS 3000 requirements for selecting devices to protect against overload current for a range of circuits and loads.
 AS/NZS 3000 requirements for selecting devices to protect against short-circuit current for a range of installation conditions.

T9 Selecting devices for isolation and switching encompassing:
 requirements for the provision of the isolation of every circuit in an electrical installation.
 need for protection against mechanical movement of electrically activated equipment.
 AS/NZS 3000 requirements for selecting devices for isolation and switching for a range of installations and conditions.

T10 Switchboards encompassing:
 AS/NZS 3000 and local supply authority requirements for switchboards.
 tariff structures for the supply of electricity.
 equipment installed at the main switchboards with capacities up to 400 A per phase.
 layout of a main switchboard for an installation supplied with single phase single tariff whole current metering.
 layout of a main switchboard for an installation supplied with single phase multiple tariff whole current metering.
 layout of a main switchboard for an installation supplied with multiphase single tariff whole current metering.
 layout of a main switchboard for an installation supplied with multiphase multiple tariff whole current metering.
 layout of a main switchboard for a multiple tenancy installation with whole current metering.
 layout of a main switchboard, including metering, for an installation supplied with three phase CT metering.
 local supply authority requirements for connection of an electrical installation to the electrical supply system

EE106	Advanced Electrical Wiring

This unit covers the installation in building and premises of wiring enclosures, cable support systems, cables and accessories and designed to operate at voltages up to 1,000 V a.c. or 1,500 V d.c. It encompasses working safely and to installation standards, routing cables to specified locations, terminating cables and connecting wiring at accessories and completing the necessary installation documentation.

KS01-EG103A Installation of wiring systems
Evidence shall show an understanding of the installation of wiring systems that comply with standards to an extent indicated by the following aspects:
T1 Standards, codes and requirements applicable to the installation of wiring systems encompassing:
 Cables and methods of mechanical protection and support
 Protection against and from other services.
 Prohibited cable locations
 Building codes affecting the installation of cables in buildings, structures and premises (limitation on penetration of structural elements, maintenance of fire protection integrity, and wiring above suspected ceilings)
 Issues affecting electrical installations in heritage buildings and premises (limitation on penetration of structural and finished elements, accessing cable routes, types and colour of exposed accessories).

T2 Use of other installation standards called up by the Wiring Rules for special situations encompassing:
 standards that apply to Electromedical treatment areas.
 additional requirements for construction and demolition sites.
 Relocatable installations and their site supply
 additional requirements for caravan park.
 additional requirements for marinas and pleasure craft at low voltage.

 additional requirements for shows and carnivals.

T3 Hazardous areas encompassing:
 Conditions that apply in an areas that require them to be classified as a ‘Hazardous area’.
 Responsibility for classifying a hazardous area
 Awareness of standards called up by the Wiring Rules for selection of equipment and installations in Hazardous areas. (AS/NZS 3000 requirements for hazardous areas).

T4 Requirement for the installation of cables and accessories in damp situations and ELV installations encompassing:
 restricted zones around baths, showers, fixed water containers, pools, sauna heaters and fountains/water features for given installations.
 selecting equipment suitable for installation in given damp situations.
 voltage range that defines extra-low voltage.
 'Separated extra-low voltage (SELV) system' and a 'Protected extra-low voltage (PELV) system".
 AS/NZS 3000 requirements for selecting extra-low voltage systems and devices for a range of installations and conditions.

T5 Aerial cabling encompassing:
 Describe the types of aerial cabling.
 State the AS/NZS 3000 and local supply authority requirements for aerial cabling.
 Termination of aerial cables in accordance with AS/NZS 3000 and local requirements.
 installation of consumers mains for connection via overhead consumers terminals in accordance with AS/NZS 3000 and local requirements.
 Testing of installed cables compliance with Australian Standards

T6 Underground cabling encompassing:
 Describe permissible underground cabling systems.
 Identify other underground services.
 State the AS/NZS 3000 and local supply authority requirements for underground cabling.
 List the advantages and disadvantages of underground wiring systems
 selection of underground consumers mains in accordance with AS/NZS 3000 and local requirements

T7 Techniques for installing cables and wiring systems encompassing:
 Typical cable routes through buildings, structures and premises.
 Application of wiring accessories
 Drawing-in, placing and fixing of cables
 Cable and conductor terminations
 Maintaining fire rating integrity.
 Inspecting and testing installed and terminated cables to ensure they comply with continuity and insulation resistance and are safe to connect to the supply.

EE308	Sustainability

This unit covers developing strategies to address environmental and sustainability issues in the energy sector. It encompasses working safely, apply extensive knowledge of sustainable energy systems and components and their operating parameters, gathering and analysing data, applying problem solving techniques, developing and documenting alternatives solutions

KS01-EK132A	**Environmental and Sustainability strategies**	

Evidence shall show an understanding of greenhouse reduction strategies to an extent indicated by the following aspects:

T1 Principles of sustainability encompassing:
 ways in which ecosystems moderate climate. ways in which ecosystems purify and store water.
 ways in which ecosystems recycle waste.

T2 Problems in a sustainable world encompassing:
 changes to Australian forest cover since white settlement, and the resulting loss of ecosystem and human benefits.
 changes to Australia‘s soils since white settlement, and the resulting loss of ecosystem and human benefits.
 changes to Australia‘s waterways since white settlement, and the resulting loss of ecosystem and human benefits.
 place of environmental accounting in quantifying Australia‘s environmental losses.
 limits to Australia‘s population carrying capacity.

T3 Sustainability principles encompassing:
 principles within sustainability including: environmental accounting and economies; full cost pricing; triple bottom line ethic; ecologically sustainable development; greenhouse gas abatement; energy efficiency; resource and water use efficiency; life cycle costing; renewable energy substitution, cleaner production; waste minimisation, reuse and recycling; ecological footprint.

T4 Addressing the problem of global warming encompassing:
 greenhouse gases and their sources and quantities that contribute to global warming.
 global warming impacts for Australia for 2030 and 2070 predicted by CSIRO modelling.
 requirements to achieve stable atmospheric concentrations of greenhouse gases.
 ecologically and economically sustainable methods for achieving these stable concentrations.

T5 Greenhouse gas emissions profile encompassing:
 goals and principles of the National Greenhouse Strategy
 what a greenhouse gas inventory is, why it is required, and the sectors to which it applies
 uses to which the National Greenhouse Gas Inventory can be applied.

T6 Understanding and communicating climate change and its impacts encompassing:
 the possible impact of climate change in Australia.
 techniques for improving the understanding of climate change
 techniques for communicating to and educating the general

public on greenhouse gas induced climate change.

T7 Partnerships for greenhouse action encompassing:
 actions achievable by each level of government to implement the NGS.
 methods by which the community activity can be engaged in the reduction of greenhouse gas emissions.
 initiatives that can be undertaken by the private sector to reduce greenhouse gas emissions.
 advantages of international partnerships.
 emissions trading system.

T8 Efficient and sustainable energy use and supply encompassing:
 techniques for reducing the greenhouse intensity of energy supply.
 types of renewable energy sources suitable for use in Australia.
 methods and technique for improving end-use efficiency.

T9 Efficient transport and sustainable urban planning encompassing:
 how integrating land use and transport planning can assist the greenhouse problem.
 how each of the following can be used to mitigate greenhouse gas; travel demand and traffic management strategies; encouraging greater use of public transport, walking and cycling; freight and logistics systems; improving vehicle fuel efficiency and fuel technologies;

T10 Greenhouse sinks and sustainable land management encompassing:
 how enhancing greenhouse sinks and encouraging sustainable forestry and vegetation management can complement the AGS.
 how greenhouse gas emissions are obtained from agricultural production and describe techniques to mitigate the emissions.

T11 Models of greenhouse best practice in industrial processes and waste management encompassing:
 types and methods of reducing greenhouse gas emissions from industry.
 methods of reducing methane emissions from waste

treatment and disposal.

T12 Adaptation to climate change encompassing:
 salient points in each of the key sectors that require analysis and the strategies required in the need for adaptation to climate change

ME 301/ CE 104 Fluid Dynamics

Body forces, compressible flow, Navier stroke equation, fluid energy equation, incompressible flow, turbulent flow, instantaneous & average velocity in turbulent flow, inviscid flow, boundary layer approximation.

CE 105 Hydraulic
CE 106 Hydrology

Fluid, hydraulic jack, pressure head of fluid, total pressure in immersion surface, buoyancy, pressure gauge, condition of equilibrium, hydrodynamics, head of liquid, Bernaulli's theorem, Venturi meter, water jet, vortex, orifice, flow through orifice, Francis formula, triangular notch, trapezoidal notch, broad crest weir, friction & flow through pipes, flow through nozzle, turbine.

CE 106A Detailed construction & Building Construction Materials

Brick laying, bonding, junction, wall corner, joint arch, brick paving, brick steps, chimney, roof plumbing, eaves gutter, sprouting mitre, gutter joining, sprouting, external / internal angle making PVC angle, moulded angle, obtuse angle, return stop end, sprouting outlet , pvc outlet, joining sprouting bracket.

CE 104A Building Drawing

Scope, drawing paper, scale, instruments, terms, abbreviations, symbols, building geometry, plan, elevation, sections, re-production of drawings, lettering, perspective drawing, 3 dimensional drawing, drawing layout , setting out detailed drawing, detailed construction, joinery details, room schedule, door schedule, window schedule, hardware schedule, schedules of finishes, painting schedule, colour schedules, miscellaneous schedules, structural drawing, frame, RC, beam schedule, structural steel work, electrical drawing, drainage measured drawing, survey drawings, working drawing, alteration plan.

CE 110 Building Construction

Types of loads, beam, shear diagram, roof trusses, foundation engineering, standard penetration test, soil profile, bearing capacity analysis, retaining wall, footing, steel grades, fasteners, weld, truss applications, bracing tall buildings, wind connection for beam/ columns, brace bay, steel joist floors, roof systems, concrete joints, foundations, wall system, fastenings, timber trusses, timber decking, plank and beam frame, fabrication of structural timber, masonary walls, support condition for walls, stud wall construction, partitions, installation methods, floor systems, window / door structure, sand vibration control, roof insulation.

CE 103 Surveying

Art of measuring, slope correction, surveying instruments, level bench mark booking, observation reduce level, error reduction, change of point, HPC method, two peg test, grid level.

CE 106 Hydrology + ME 204 Fluid Mechanics

Axial flow reaction turbine, inward flow reaction turbine, hydrostatics, centre of pressure, Buoyancy, hydrodynamics, orifice, water turbines, venturi meters, weirs.

CE 107 Sanitation/ Water Supply

Basic principle of plumbing, water supply fittings, sanitary drainage system, storm drainage, compression joints, types of pipes, pipe fitting layout, piping installation, schematic wet column, ferrous metal pipes, piping supports, thermal expansion, hot water piping expansion loop, gate valve, globe valve, check valve, ball valve, plumbing fixture usage, basin sink installation, plumbing fitting diagram, plumbing pumping symbols, piping single line drawing, piping installation system, water circulation systems, piping layout for lot, roof drainage.

CE 112 Engineering Mechanics

- Hydraulic jack, stress/ strain , strength of materials, Hooke's law, stress due to thermal expansion, pressure vessel, rivet joints, bending of beams
- Vector, vector diagram, jig gear, reciprocating engine mechanism, framed structures, non coplanar forces, velocity acceleration , projectile, relative velocity, mass acceleration force, work/ power/ energy/ centripetal

acceleration

- Stress in beams, tension, hydraulics

CE 113 Structure 1

- Strength of materials, elongation, stress/ strain problems, impact stress.

- Mechanical properties of materials, stress, compound bars, torsion, moment of resistance, bending moment and shear force.

CE 114 Structure 2

- Members subject to bending, section moment capacity, member capacity of segments with full lateral restraint, design of webs, shear capacity of webs, interaction of shear and bending
- Design of intermediate transverse web stiffners
- Members subject to axial compression
- Members subject to axial tension
- Members subject to combined actions.
- Fabrication, erection

Study sequence of structure

CE 113 Structure 1
CE 112 Engineering Mechanics
CE 114 Structure 2

CE 115 Estimating & Specification

- Principle of specification & estimation
- Overheads
- Profit
- Labour cost
- Preliminaries
- Labour constant
- Material motor transport
- Mechanical plant
- Excavator
- Earth work
- Brick work
- Roofing
- Carpentry
- Joinery
- Plumbing installation
- Electrical installation
- Plaster work
- Glazing
- Painting decoration
- Drainage
- Pro-rata rate
- Incentive scheme

CE 111A Road & Bridge

Bridge

Types of bridges, truss, cantilever bridge, arch bridge, suspension bridge, double deck bridge, iron brick bridge, iron brick bridge maintenance

Railways

Alignment , centrifugal force, track

Road

Technical design, alignment, structural design, road pavement , road alignment, intersection points, final centre design work, technical assessment, final choice, time management plan, construction sequence, daily work planning, gang balancing, work control, site camping, hand tools, maintenance, storage, setting out traveller, earth work, embankment, earth work calculation, drainage, road surface drainage, erosion control, cut off drain, site location, work procedures.

ME 102 Engineering Thermodynamics

-Thermodynamic system, thermodynamic properties, quality of the working substances, thermodynamic processes, ideal gas, gas equation during a change of state, thermodynamic process for gas, vanderwaal gas equation, entropy, properties of steam, thermodynamic of working fluids
-Gas problems, method of expansion/compression, first law of thermodynamics, throttling valve, second law of thermodynamics, third law of thermodynamics

ME 334 Air-conditioning & Refrigeration

- Refrigerant piping, evaporator, compressor, condenser, compressor-condenser circuit, tools
- Air-conditioning equipment, tubing, joining refrigeration piping
- Nitrogen circuit, system charging, electrical test instruments, control equipments, thermostat, compressor
- Control circuit equipment assembly, dual fuel furnace, humidification, comfort, ventilation duct, plenum system.
- Ventilation installation, ventilation fixtures, evaporator outlet temperature, assembly of units, capillary tube, installation of indoor / outdoor units.

EE308	Sustainability

This unit covers developing strategies to address environmental and sustainability issues in the energy sector. It encompasses working safely, apply extensive knowledge of sustainable energy systems and components and their operating parameters, gathering and analysing data, applying problem solving techniques, developing and documenting alternatives solutions

KS01-EK132A **Environmental and Sustainability strategies**

Evidence shall show an understanding of greenhouse reduction strategies to an extent indicated by the following aspects:
T1 Principles of sustainability encompassing:
 ways in which ecosystems moderate climate. ways in which ecosystems purify and store water.
 ways in which ecosystems recycle waste.

T2 Problems in a sustainable world encompassing:
 changes to Australian forest cover since white settlement, and the resulting loss of ecosystem and human benefits.
 changes to Australia‘s soils since white settlement, and the resulting loss of ecosystem and human benefits.
 changes to Australia‘s waterways since white settlement, and the resulting loss of ecosystem and human benefits.
 place of environmental accounting in quantifying Australia‘s environmental losses.
 limits to Australia‘s population carrying capacity.

T3 Sustainability principles encompassing:
 principles within sustainability including: environmental accounting and economies; full cost pricing; triple bottom line ethic; ecologically sustainable development; greenhouse gas abatement; energy efficiency; resource and water use efficiency; life cycle costing; renewable energy substitution, cleaner production; waste minimisation, reuse and recycling; ecological footprint.

T4 Addressing the problem of global warming encompassing:
 greenhouse gases and their sources and quantities that contribute to global warming.
 global warming impacts for Australia for 2030 and 2070 predicted by CSIRO modelling.
 requirements to achieve stable atmospheric concentrations of greenhouse gases.
 ecologically and economically sustainable methods for achieving these stable concentrations.

T5 Greenhouse gas emissions profile encompassing:
 goals and principles of the National Greenhouse Strategy
 what a greenhouse gas inventory is, why it is required, and the sectors to which it applies
 uses to which the National Greenhouse Gas Inventory can be applied.

T6 Understanding and communicating climate change and its impacts encompassing:
 the possible impact of climate change in Australia.
 techniques for improving the understanding of climate change
 techniques for communicating to and educating the general

public on greenhouse gas induced climate change.

T7 Partnerships for greenhouse action encompassing:
 actions achievable by each level of government to implement the NGS.
 methods by which the community activity can be engaged in the reduction of greenhouse gas emissions.
 initiatives that can be undertaken by the private sector to reduce greenhouse gas emissions.
 advantages of international partnerships.
 emissions trading system.

T8 Efficient and sustainable energy use and supply encompassing:
 techniques for reducing the greenhouse intensity of energy supply.
 types of renewable energy sources suitable for use in Australia.
 methods and technique for improving end-use efficiency.

T9 Efficient transport and sustainable urban planning encompassing:
 how integrating land use and transport planning can assist the greenhouse problem.
 how each of the following can be used to mitigate greenhouse gas; travel demand and traffic management strategies; encouraging greater use of public transport, walking and cycling; freight and logistics systems; improving vehicle fuel efficiency and fuel technologies;

T10 Greenhouse sinks and sustainable land management encompassing:
 how enhancing greenhouse sinks and encouraging sustainable forestry and vegetation management can complement the AGS.
 how greenhouse gas emissions are obtained from agricultural production and describe techniques to mitigate the emissions.

T11 Models of greenhouse best practice in industrial processes and waste management encompassing:
 types and methods of reducing greenhouse gas emissions from industry.
 methods of reducing methane emissions from waste treatment and disposal.

T12 Adaptation to climate change encompassing:
 salient points in each of the key sectors that require analysis and the strategies required in the need for adaptation to climate change

Year (1)

Certificate in Mechanical Engineering (Each 1.5 Credits) (15 Pt_)

Unit Number	Unit Name	Credit Points
Maths 101	Engineering Mathematics (EE201)	1.5
ME 101	Applied Mathematics	1.5
ME 102	Engineering Thermodynamics	1.5
ME 103	Engineering Mechanics	1.5
ME 104	Machine Principle	1.5
ME 105	Electrical Principle	1.5
ME 106	Electrical Circuits	1.5
ME 107	Heat Transfer	1.5
ME 108	Principle of Engines	1.5
ME201	Introduction to Fluid Mechanics	1.5
	Total	15

Diploma in Mechanical Engineering (Each 1.5 Credits) (15 Pt_)

ME 202 Introduction to Aero Dynamics

ME 203 Control Engineering

ME 204 Engineering Fluid Mechanics

ME 205 Manufacturing Processes-and-Materials

ME 206 Introduction to Turbo Machinery

ME 207 Chemical Thermodynamics

ME 208 Hydrocarbons

ME 209 Introduction-to-polymer-science-and-technology

ME 234 Wind Turbines

Mgt 501 Basic Management

Year (2)

Advanced Diploma in Mechanical Engineering (Each 1.5 Credits) (30 Pt)

Mathematics

Maths 403 Engineering-Mathematics (EE302)

Maths 301 Introductory Finite Difference Methods-for-pdes

Maths 302 Elementary-Linear-Algebra (EE302)

Maths 303 Introductory Finite Volume Methods-for-pdes

Maths 501 Linear Algebra-c-1 (EE302)

Mechanical Engineering

ME 301 Fluid Dynamics

ME 302 Automation-and-Robotics

ME 303 Computer Aided Design and Manufacturing

ME 304 Introduction to Nonlinearity-in-control-systems

ME 305 Corrosion Prevention

ME 306 Theory-of-waves-in-materials

ME 334 Airconditioning and Refrigeration

ME 434 Mechtronics-Robotics

ME 534 Numerical Control

ME 634 Pneumatics

EE 617 Building Electrical and Mechanical System Part 1 (EE309)

EE 624 Process Control

Mgt 503 Production & Operation Management

Mgt 505 Quality Management and Manufacturing Engineering

Maths 101	Engineering Mathematics (EE201)

This unit covers the application of computational processes to solve engineering problems. It encompasses working safely, applying problem solving techniques, using a range of mathematical processes, providing solutions to electrical/electronics engineering problems and justifying such solutions.
Note. Typical engineering problems are those encountered in meeting requirements in a design brief, meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions

KS01-EE126A Electrotechnology engineering maths
Evidence shall show an understanding of electrotechnology engineering maths to an extent indicated by the following aspects:
T1 Rational, irrational numbers and basic algebra
 simplification of expressions involving square roots and cube roots
 scientific and engineering notation
 evaluation of expressions using a calculator
 convert units of physical quantities using unity brackets
 substitute given values into formulae to find physical quantities
 manipulate algebraic expressions using mathematical operations in their correct order, the laws of indices, expansion of brackets and collecting like terms
T2 Algebraic manipulation
 Factorise algebraic expressions using common factors
 Factorise quadratic expressions using trial and error on the factors of the coefficients
 Simplify algebraic fractions using common denominators and cancelling
 Solve simple one variable equations including algebraic fractions
 Find the quotient and remainder given a linear divisor.
 Transpose formulae to find a required variable.
T3 Laws of indices
 Conversion between decimal notation, scientific notation and engineering notation
 Laws of indices: positive /negative values, multiplication/division, fractional values, index equals zero
 Logarithmic laws: multiply/divide
 solution of exponential equations using logarithms, substitution and solution of relevant formulae involving exponents or logarithms
 Graphs of exponential functions, 10x and ex and the inverses log10(x) and loge(x) functions on log-linear graphs
 Convert numbers into scientific and engineering notation using the laws of indices
 Manipulate and simplify arithmetic and algebraic expressions using the laws of indices and logarithms
 Express logarithms as indices.
 Perform logarithmic operations.

 Determine logarithms and antilogarithms to base 10, using a scientific calculator.
 Determine logarithms and antilogarithms to base e, using a scientific calculator.
 Convert logarithmic values from base 10 to base e and vice versa.
 Sketch given functions on log-linear graphs

T4 Estimations, errors and approximations
 Errors in measurement
 Maximum probable error
 Show awareness of errors in measurement and of giving results in appropriate number of significant figures
 Use estimations and approximations to check the reasonableness of results.

T5 Plane figures – triangles and basic trigonometry
 Angles in a triangle
 Isosceles and equilateral triangles
 Congruent triangles
 Similar triangles
 Pythagoras' theorem
 Area of triangles
 Basic trigonometry functions
 Degrees, radians
 The ratios: sin, cos, tan, cosec, sec, cot.
 Inverse trig functions
 Sine and cosine rules

T6 Plane figures - quadrilaterals and circles
 Types and properties of quadrilaterals
 Areas and perimeters of regular quadrilaterals
 Lengths of arcs
 Angles in a circle - degrees
 Angles in a circle - radians
 Lengths of chord segments
 Tangents to circles
 Circumference and area of circles
 Names and characteristics of common polygons

T7 Graphs of Trigonometric functions
 Graph trigonometric functions and solve trigonometric equations.
 Simplify trigonometric expressions using trigonometric identities
 Convert angular measure in degrees to radians and vice versa
 Graph trigonometric functions including graphs of $y = \sin x$ and $y = \cos x$
 Using vocational applications of current or voltage as a function of time, consider changes in amplitude, consider changes in frequency.
 Examine relationships of frequency, period and angular velocity.
 Sketch graphs of the form $f(t) = a \sin \varphi t$ and $f(t) = a \cos \varphi t$, where a is the peak voltage or current, and φ is the angular velocity
 Solve graphically equations of the form $f(t) = a \sin \varphi t$ and $f(t) = a \cos \varphi t$

T8 Graphs of linear functions
 The number plane
 Gradient and x and y intercepts of a straight line
 Equation of a straight line length and mid-point of a straight line segment
 Function notation

T9 Simultaneous equations
 Graphical solutions
 Substitution
 Elimination
 Solve 2 linear simultaneous equations both algebraically and graphically.

T10 Matrices
 Perform the basic operations on matrices up to 3 x 3
 Manipulate matrix equations and expressions
 Recognise inverse and identity matrices up to 3 x 3 and use to solve systems of linear equations.
 Find determinants up to 3 x 3 and use to solve systems of linear equations.
 Solve problems involving more than two simultaneous equations.
 State the limitations of graphical methods of solution.
 Distinguish between a matrix and an array.
 Describe the null, diagonal and unit matrix
 Describe and identify a singular/non-singular matrix

T11 Quadratic functions
 Graphs of quadratic functions represented by parabolas and the significance of the leading coefficient.
 Graph quadratic functions and solve quadratic equations.
 Sketch and interpret the graphs of quadratic functions showing the significance of the leading coefficient and the zeros
 Solve quadratic equations by factoring or using quadratic formula
 Solve simultaneously linear and quadratic equations algebraically and geometrically
 Interpret verbally formulated problems involving quadratic and linear equations and solve.
T12 Exponential and logarithmic functions
 Transform non-linear functions (including exponential) to linear forms and plot data.
 Draw curves of best fit, interpolate data and estimate constants in suggested relationships.

Graph exponential and logarithmic functions and solve exponential and logarithmic equations.
 Sketch the graphs of simple exponential and logarithmic functions showing behaviour for large and small values

T13 Vectors and Phasors
 The vector as an expression of magnitude and direction
 The vector sum of x and y values in terms of magnitude and direction
 Rectangular components of vectors in the form $x = r \cos \theta$ and $y = r \sin \theta$
 Rectangular-polar and polar-rectangular conversion
 Vector addition and subtraction
 Express rectangular components of vectors in the form $x = r \cos \theta$ and $y = r \sin \theta$

T14 Complex numbers
 Definitions and notation of complex numbers
 Complex numbers as vectors on an Argand diagram
 laws of complex numbers and apply the laws in suitable calculations.
 Plot complex numbers on the Argand plane.
 Express vectors as complex numbers and perform suitable calculations.
 Calculate the conjugate of a complex number.
 Using a calculator for rectangular-polar and polar-rectangular conversions.

ME 106	Electrical Circuits

This unit covers determining correct operation of single source d.c. series, parallel and series-parallel circuits and providing solutions as they apply to various electrotechnology work functions. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predictable problems in single and multiple path circuits.

Evidence shall show an understanding of electrical fundamentals and direct current multiple path circuits to an extent indicated by the following aspects:

T1 Basic electrical concepts encompassing:

- electrotechnology industry
- static and current electricity
- production of electricity by renewable and non renewable energy sources
- transportation of electricity from the source to the load via the transmission and distribution systems
- utilisation of electricity by the various loads
- basic calculations involving quantity of electricity, velocity and speed with relationship to the generation and transportation of electricity.

T2 Basic electrical circuit encompassing:

- symbols used to represent an electrical energy source, a load, a switch and a circuit protection device in a circuit diagram
- purpose of each component in the circuit
- effects of an open-circuit, a closed-circuit and a short-circuit
- multiple and sub-multiple units

T3 Ohm’s Law encompassing:

- basic d.c. single path circuit.
- voltage and currents levels in a basic d.c. single path circuit.
- effects of an open-circuit, a closed-circuit and a short-circuit on a basic d.c. single path relationship between voltage and current from measured values in a simple circuit
- determining voltage, current and resistance in a circuit given any two of these quantities
- graphical relationships of voltage, current and resistance
- relationship between voltage, current and resistance

T4 Electrical power encompassing:

- relationship between force, power, work and energy
- power dissipated in circuit from voltage, current and resistance values
- power ratings of devices
- measurement electrical power in a d.c. circuit
- effects of power rating of various resistors

T5 Effects of electrical current encompassing:

- physiological effects of current and the fundamental principles (listed in AS/NZS 3000) for protection against the this effect
- basic principles by which electric current can result in the production of heat; the production of magnetic fields; a chemical reaction
- typical uses of the effects of current
- mechanisms by which metals corrode
- fundamental principles (listed in AS/NZS3000) for protection against the damaging effects of current

T6 EMF sources energy sources and conversion electrical energy encompassing:

- basic principles of producing a emf from the interaction of a moving conductor in a magnetic field.
- basic principles of producing an emf from the heating of one junction of a thermocouple.
- basic principles of producing a emf by the application of sun light falling on the surface of photovoltaic cells
- basic principles of generating a emf when a mechanical force is applied to a crystal (piezo electric effect)
- principles of producing a electrical current from primary, secondary and fuel cells

 input, output, efficiency or losses of electrical systems and machines
 effect of losses in electrical wiring and machines
 principle of conservation of energy

T7 Resistors encompassing:
 features of fixed and variable resistor types and typical applications
 identification of fixed and variable resistors
 various types of fixed resistors used in the Electro technology Industry. e.g. wire-wound, carbon film, tapped resistors.
 various types of variable resistors used in the Electro technology Industry e.g. adjustable resistors: potentiometer and rheostat; light dependent resistor (LDR); voltage dependent resistor (VDR) and temperature dependent resistor (NTC, PTC).
 characteristics of temperature, voltage and light dependent resistors and typical applications of each power ratings of a resistor.
 power loss (heat) occurring in a conductor.
 resistance of a colour coded resistor from colour code tables and confirm the value by measurement.
 measurement of resistance of a range of variable' resistors under varying conditions of light, voltage, temperature conditions.
 specifying a resistor for a particular application.

T8 Series circuits encompassing:
 circuit diagram of a single-source d.c. 'series' circuit.
 Identification of the major components of a 'series' circuit: power supply; loads; connecting leads and switch
 applications where 'series' circuits are used in the Electro technology industry.
 characteristics of a 'series' circuit - connection of loads, current path, voltage drops, power dissipation and affects of an open circuit in a 'series' circuit.
 the voltage, current, resistances or power dissipated from measured or given values of any two of these quantities
 relationship between voltage drops and resistance in a simple voltage divider network.
 setting up and connecting a single-source series dc circuit
 measurement of resistance, voltage and current values in a single source series circuit effect of an open-circuit on a series connected circuit

T9 Parallel circuits encompassing:
 schematic diagram of a single-source d.c. 'parallel' circuit.
 major components of a 'parallel' circuit (power supply, loads, connecting leads and applications where 'parallel' circuits are used in the Electrotechnology industry.
 characteristics of a 'parallel' circuit. (load connection, current paths, voltage drops, power dissipation, affects of an open circuit in a 'parallel' circuit).
 relationship between currents entering a junction and currents leaving a junction
 relationship between branch currents and resistances in a two branch current divider network.
 calculation of the total resistance of a 'parallel' circuit.
 calculation of the total current of a 'parallel' circuit.
 Calculation of the total voltage and the individual voltage drops of a 'parallel' circuit.
 setting up and connecting a single-source d.c. parallel circuit
 resistance, voltage and current measurements in a single-source parallel circuit
 voltage, current, resistance or power dissipated from measured values of any of these quantities
 output current and voltage levels of connecting cells in parallel.

T10 Series/parallel circuits encompassing:
 schematic diagram of a single-source d.c. 'series/parallel' circuit.
 major components of a 'series/parallel' circuit (power supply, loads, connecting leads and

switch)
 applications where ‘series/parallel’ circuits are used in the Electrotechnology industry.
 characteristics of a ‘series/parallel’ circuit. (load connection, current paths, voltage drops, power dissipation, affects of an open circuit in a ‘series/parallel’ circuit).
 relationship between voltages, currents and resistances in a bridge network.
 calculation of the total resistance of a ‘series/parallel’ circuit.
 calculation of the total current of a ‘series/parallel’ circuit.
 calculation of the total voltage and the individual voltage drops of a ‘series/parallel’ circuit.
 setting up and connecting a single-source d.c. series/ parallel circuit
 resistance, voltage and current measurements in a single-source d.c. series / parallel circuit
 the voltage, current, resistances or power dissipated from measured values of any two of these quantities

T11 Factors affecting resistance encompassing:
 four factors that affect the resistance of a conductor (type of material, length, cross-sectional area and temperature)
 affect the change in the type of material (resistivity) has on the resistance of a conductor.
 affect the change in ‘length’ has on the resistance of a conductor.
 affect the change in ‘cross-sectional area’ has on the resistance of a conductor.

effects of resistance on the current-carrying capacity and voltage drop in cables.
 calculation of the resistance of a conductor from factors such as conductor length, cross-sectional area, resistivity and changes in temperature
 using digital and analogue ohmmeter to measure the change in resistance of different types of conductive materials (copper, aluminium, nichrome, tungsten) when those materials undergo a change in type of material length, cross-sectional area and temperature.

T12 Effects of meters in a circuit encompassing:
 selecting an appropriate meter in terms of units to be measured, range, loading effect and accuracy for a given application.
 measuring resistance using direct, volt-ammeter and bridge methods.
 instruments used in the field to measure voltage, current, resistance and insulation resistance and the typical circumstances in which they are used.
 hazards involved in using electrical instruments and the safety control measures that should be taken.
 operating characteristics of analogue and digital meters.
 correct techniques to read the scale of an analogue meters and how to reduce the ‘parallax’ error.
 types of voltmeters used in the Electrotechnology industry – bench type, clamp meter, Multimeter, etc.
 purpose and characteristics (internal resistance, range, loading effect and accuracy) of a voltmeter.
 types of voltage indicator testers. e.g. LED, neon, solenoid, volt-stick, series tester, etc. and explain the purpose of each voltage indicator tester.
 operation of various voltage indicator testers.
 advantages and disadvantages of each voltage indicator tester.
 various types of ammeters used in the Electrotechnology industry – bench, clamp meter, multimeter, etc.
 purpose of an ammeter and the correct connection (series) of an ammeter into a circuit.
 reasons why the internal resistance of an ammeter must be extremely low and the dangers and consequences of connecting an ammeter in parallel and/or wrong polarity.
 selecting an appropriate meter in terms of units to be measured, range, loading effect

and accuracy for a given application
 connecting an analogue/digital voltmeter into a circuit ensuring the polarities are correct and take various voltage readings.
 loading effect of various voltmeters when measuring voltage across various loads.
 using voltage indicator testers to detect the presence of various voltage levels.
 connecting analogue/digital ammeter into a circuit ensuring the polarities are correct and take various current readings.
T13 Resistance measurement encompassing:
 Identification of instruments used in the field to measure resistance (including insulation resistance) and the typical circumstances in which they are used.
 the purpose of an Insulation Resistance (IR) Tester.
 the parts and functions of various analogue and digital IR Tester (selector range switch, zero ohms adjustment, battery check function, scale and connecting leads).
 reasons why the supply must be isolated prior to using the IR tester.
 where and why the continuity test would be used in an electrical installation.
 where and why the insulation resistance test would be used in an electrical installation.
 the voltage ranges of an IR tester and where each range may be used. e.g. 250 V d.c, 500 V d.c and 1000 V d.c
 AS/NZS3000 Wiring Rules requirements – continuity test and insulation resistance (IR) test.
 purpose of regular IR tester calibration.
 the correct methods of storing the IR tester after use
 carry out a calibration check on a IR Tester
 measurement of low values of resistance using an IR tester continuity functions.
 measurement of high values of resistance using an IR tester insulation resistance function.
 volt-ammeter (short shunt and long shunt) methods of measuring resistance.
 calculation of resistance values using voltmeter and ammeter reading (long and short shunt connections)
 measurement of resistance using volt-ammeter methods

T14 Capacitors and Capacitance encompassing:
 basic construction of standard capacitor, highlighting the: plates, dielectric and connecting leads
 different types of dielectric material and each dielectric's relative permittivity.
 identification of various types of capacitors commonly used in the Electrotechnology industry (fixed value capacitors -stacked plate, rolled, electrolytic, ceramic, mica and Variable value capacitors – tuning and trimmer)
 circuit symbol of various types of capacitors: standard; variable, trimmer and polarised
 terms: Capacitance (C), Electric charge (Q) and Energy (W)
 unit of: Capacitance (Farad), Electric charge (Coulomb) and Energy (Joule)
 factors affecting capacitance (the effective area of the plates, the distance between the plates and the type of dielectric) and explain how these factors are present in all circuits to some extent.
 how a capacitor is charged in a d.c. circuit.
 behaviour of a series d.c. circuit containing resistance and capacitance components. - charge and discharge curves

the term 'Time Constant' and its relationship to the charging and discharging of a capacitor.
 calculation of quantities from given information: Capacitance (Q = VC); Energy (W =½CV2); Voltage (V = Q/C)
 calculation one time constant as well as the time taken to fully charge and discharge a given capacitor. ($\tau = RC$)
 connection of a series d.c. circuit containing capacitance and resistor to determine the time constant of the circuit

T15 Capacitors in Series and Parallel encompassing:
 hazards involved in working with capacitance effects and the safety control measures that should be taken.
 safe handling and the correct methods of discharging various size capacitors
 dangers of a charged capacitor and the consequences of discharging a capacitor through a person
 factors which determine the capacitance of a capacitor and explain how these factors are present in all circuits to some extent.
 effects of capacitors connected in parallel by calculating their equivalent capacitance.

This unit covers the law of physics and how they apply to solving electrotechnology related problems. It encompasses working safely, knowledge of measurements of physical phenomena, linear and angular motion, harmonic motion, wave theory, optics, acoustics and heat capacity and transfer, use of measurement techniques, solving physics related problems and documenting justification for such solutions.

ME 103	Engineering Mechanics (EE204)

KS01-EE082A Electrotechnology engineering physics
Evidence shall show an understanding of electro engineering physics to an extent indicated by the following aspects:
T1 Measurement encompassing
 SI units in measurement of physical phenomena
 Uncertainty and tolerance

T2 Linear motion
T3 Angular motion
T4 Simple harmonic motion and vibration
T5 Wave theory
 Interference
 Diffraction
T6 Electromagnetic waves and propagation
T7 Optics
 Mirrors and lenses
 Optical fibre

T8 Acoustics and ultrasonics
T9 Heat capacity and heat transfer
 Fluid power

EE 617 Building Electrical and Mechanical System Part 1 (EE309)

This unit covers evaluating energy used in buildings and developing and documenting strategies/methods to effectively reduce energy use without compromising occupancy standards. It encompasses working safely, setting up and conducting evaluation measurements and evaluating energy use from measured parameters.

T1 Climate and thermal comfort encompassing:
 characteristics of the different Australian climatic types.
 use of climatic data in published and electronic forms to extract the quantities relevant to energy efficient design.
 relationship between climate and comfort using bioclimatic or psychrometric charts.
 calculation of heating or cooling degree days or degree hours for various locations.
 calculation of thermal neutrality for a given location.

T2 Solar geometry and radiation encompassing:
 definition of the terms: declination, hour angle, zenith angle, azimuth and altitude angles, the equation of time.
 conversion of solar time to local time and vice versa.
 position of the sun and the length of shadows with the aid of algorithms, tables, sun charts or computer software.
 daily irradiation incident on a wall, window or roof of a given tilt and orientation.
 relative summer and winter irradiation of windows facing the cardinal orientations.

T3 Heat transfer encompassing:
 thermal processes of conduction, convection and radiation apply to the transfer of heat in buildings.
 calculation of the summer and winter U-values of building elements using tables and software.
 calculation of the infiltration heat transfer in a building.

T4 Glazing Systems encompassing:
 different types of glazing systems and their characteristics.
 different types of shading devices and the window orientations for which they are most appropriate.
 solar heat gain for different glazing types and angles of incidence
 calculation of the average daily irradiation of a window partly shaded by eaves, using computer software.
 calculation of the average daily heat gain through a window partly shaded by eaves.

T5 Insulation encompassing:
 different types of insulation and where they are used.
 how different types of insulation are installed in roofs, walls and floors

.

- determination of the minimum R-values of roof insulation for different locations using Australian Standard AS2627 or similar standards.

T6 Thermal mass encompassing:

- advantages and disadvantages of using substantial thermal mass in different climate types and for different heating and cooling regimes.
- where thermal mass can be located in a building.
- explain what is meant by the following terms: time lag, decrement factor, admittance, response factor.

T7 Comfort control strategies encompassing:

- interpretation of the usefulness of a design strategy with the aid of a psychrometric chart showing control potential zones for a particular location.
- selection of the most useful comfort control strategies for Australian climatic regions.

T8 Energy efficiency in buildings encompassing:

- determination of the direction of the following: both true and magnetic, north winter and summer sunrise, winter and summer sunset.
- solar access in summer and winter to various possible house locations on a site and room locations within the house.
- how vegetation can be used to both funnel and deflect wind.
- using cross ventilation as a cooling strategy.

T9 Thermal performance of a building encompassing:

- heating requirements of a building using the heating degree day or hour method.
- dynamic performance predicted by a computer simulation program such as NatHERS or BERS.

T10 Integration of active solar systems encompassing:
 active solar system types available which can provide hot water, space heating and cooling.
 the best location on the roof, and the optimum tilt and orientation of the collector panels.
 function of the main components of an air or water-based solar space heating system.
 schematic of the fluid circuit of an air or water- based space heating system.
 main solar cooling system types.

T11 Energy rating schemes encompassing:
 differences in approach used by house energy rating schemes in Australia.
 energy performance of a number of houses using a computer simulation program such as NatHERS or BERS.
 other methods to reduce energy consumption within and outside a building including appliance efficiency, human behaviour changes, building management strategies and transportation minimisation.
 additional cost of energy efficiency measures and cost savings using life cycle cost or simple pay back methods according to Aust. Standard AS3595 and AS4536.

T 1 2 Sustainable and safe building materials encompassing:
 common building materials and their embodied energy content.
 environmental impact of the production of various building materials.
 problems associated with the use or disposal of building materials.

This unit covers fixing, securing and mounting techniques as apply in the various electrotechnology work functions. It encompasses the safe use of hand and portable power tools, safe lifting techniques, safe use of ladders and elevated platforms and the selection and safe application of fixing devices and supporting accessories/equipment.

ME 105	Electrical Principle (EE102)

KS01-EE105A Fixing and support devices/techniques

Evidence shall show an understanding of accessories and support and fixing device and methods and their use to an extent indicated by the following aspects:

T1. Device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to hollow walls encompassing:

 types and safe application of devices for hollow wall fixing and support
 methods/techniques used to fix/support to wood, hollow wall, masonry blocks, plasterboard, panelling
 types and safe application of fixing devices used in the electrotechnology industry for wood and hollow wall structures (wood screws, coach bolts, self-tappers, self drilling, metal thread, hollow wall anchors, behind plaster brackets, stud brackets, plasterboard devices, toggle devices)
 types of tools used for hollow wall fixing and supporting.

 using various fixing methods to fix/support to hollow walls.

T2. Device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to solid walls encompassing:
 types and safe application of devices used for solid wall fixing and support
 methods/techniques used in to fix to masonry and concrete structures
 fixing devices used in the electrotechnology industry for solid wall structures (wall-plugs, expanding concrete fixing devices, gas powered fixing tools, powder actuated fixing tools, loxins, dynabolts, chemical devices)
 regulatory requirements for use of powder fixing tools.
 hand and power tools used in fixing and supporting accessories
 using various fixing methods to fix/support to solid walls

T3. Device for securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories to metal fixing encompassing:
 accessories that may be fixed to metal (saddle clips, conduits, brackets, switches)
 techniques for fixing to metal
 fixing devices: coach bolts, self-tappers, metal thread bolts, hollow wall anchors, rivets
 fixing tools - spanners, screwdrivers, power screw drivers, pop riveters, files, reamers
 OH&S issues related to drilling, cutting, eye protection, metal filings, swarf, noise
 Using power drills, drill bits, change drill speeds.
 Install a fixing device and accessory capable of supporting up to 20 kg on the metal plate.

T4. Securing and mounting electrical/electronic/instrumentation/refrigeration/ air-conditioning/telecommunications accessories for supporting, fixing and protecting wiring/cabling/piping and functional accessories using fixing adhesives and tapes encompassing:
 types and safe application of using adhesives and tapes as fixing devices (load limits of different commercial products)
 accessories that may be fixed using adhesives and tapes
 techniques for the application of adhesives and tapes
 tools used to apply and cut adhesives and tapes
 hazards and safety measures when working with adhesives and chemical fixing devices (fumes, cutting, eye protection, physical contact, hand protection, ingestion)

This unit covers the application of advanced computational processes to solve energy sector engineering problems. It encompasses working safely, applying problem solving techniques, using a range of advanced mathematical processes, providing solutions to electrical/electronics engineering problems and justifying such solutions.
Note. Typical engineering problems are those encountered in meeting requirements in a design brief, meeting performance requirements and compliance standards, revising systems operating parameters and dealing with system malfunctions

Maths 403 Engineering-Mathematics (EE302)

Maths 302 Elementary-Linear-Algebra (EE302)

Maths 501 Linear Algebra-c-1 (EE302)

KS01-EE127A Advanced Engineering Maths
Evidence shall show an understanding of advanced engineering maths to an extent indicated by the following aspects:

T1 Differential Calculus encompassing:

 basic concepts of differential calculus, limited to definition of the derivative of a function as the slope of a tangent line (the gradient of a curve); limits; basic examples from 1st principles; Notation and Results of derivative of k.f(ax + b) where f(x)=x to the power of n, sin x, cos x, tan x, e to the power of x, ln x.
 rules - derivative of sum and difference; product rule; quotient rule; chain rule (function of a function), limited to two rules for any given function, the 2nd derivative.
 applications - equations of tangents and normals; stationary points; turning points; and curve sketching; rates of change; rectilinear motion
 verbally formulated problems involving related rates and maxima: minima

T2 Integral Calculus encompassing:
 integration as the inverse operation to differentiation - results of the integral of k.f(ax + b) where f(x) = x to the power of n, sin x, cos x, sec squared x, e to the power of x, method of substitution, the definite integral.
 applications - areas between curves; rectilinear motion including displacement from acceleration and distance travelled; voltage and current relationship in capacitors and inductors and the like.

T3 Linear Algebra encompassing:
 matrices and inverse matrices;
 linear mapping,
 determinants,
 solution of linear equations.

T4 Vectors encompassing:
 geometrical representation,
 addition and scalar multiplication,
 dot and cross products,
 equations of lines and planes.

T5 Variables encompassing:
 graphs, level curves and surfaces
 partial derivatives; chain rule; directional derivative;
 maxima and minima.

T6 Sequences and Series encompassing:
 algebraic and Fourier series, convergence; Taylor’s Theorem
 power series manipulation.

T7 Differential Equations encompassing:
 first order and separable linear equations
 second order linear equations.
 partial differential equations.
 numerical Techniques.

T8 Number encompassing:
 integer, irrational and complex numbers.
 number systems.
 arithmetic operations.
 accuracy and stability.

T9 Statistics encompassing:
 assembly, representation and analysis of data.
 fitting distributions to data.
 non-parametric statistics.
 tests of significance for means, variances and extreme values.

 correlation

Maths 301 Introductory Finite Difference Methods-for-pdes

The residue Theorem

Fourier Transform

Integral theorem of complex analysis with applications to the evaluation of real integral

Integral theorems – The green Theorem

Cauchy's integral theorem

Cauchy's residue theorem

EE624	Process Control System (EE116)

This unit covers solving problems in industrial control systems. The unit encompasses safe working practices, interpreting process and circuit diagrams, applying knowledge of industry controls to problem solving techniques, safety and functional testing and completing the necessary documentation.
Note.
Typical basic industrial control system problems are those encountered in meeting performance requirements and compliance standards, revising control operating parameters and dealing with control malfunctions.

KS01-EI120A **Industrial control systems**

Evidence shall show an understanding of industrial control systems to an extent indicated by the following aspects:
Control amplifiers encompassing:
 Introduction
 Amplifier Operation
 Operational Amplifiers
 Operational Amplifier Configurations

Industrial transducers encompassing:
 Introduction
 SI Units
 Forms of Energy
 Transducer Terminology
 Temperature Measurement
 Force Measurement
 Speed Measurement
SKILLS AND KNOWLEDGE

 Positional Measurement

Industrial final control elements encompassing:
 Introduction
 Electromagnetic Devices
 Valves
 Solid State Switching Devices

Industrial control systems encompassing:
- Automatic Control
- Open Loop Control
- Closed Loop Control
- Control System Terminology
- Control System Evaluation
- Two Position Control
- Proportional Control (P)
- Proportional + Integral Control (P+I)
- Proportional + Derivative Control (P+D)
- Proportional + Integral + Derivative Control (P+I+D)

Industrial control loops and control signals encompassing:
- Introduction
- Control Loops
- Converters (D to A and A to D)
- Multiplexing

Mgt 501+ Mgt 503	Basic Management+ (EE309) Production & Operation Management

Part 1 Project Management

This unit covers the management of large mechanical projects involving design, modifications, installation, and/or maintenance of systems and equipment. The unit encompasses management of safety, budget variation, personnel, resources, critical path timelines and completion documentation.

KS01-EG169A Project management

Evidence shall show an understanding of managing mechanical projects to an extent indicated by the following aspects:
T1 Defining project parameters encompassing:
- Project scope
- Project stakeholders and clients
- Project phases and the relationship between phases

T2 Time management concepts and standard practices
T3 Financial management encompassing:
- Financial management concepts
- Standard practices for managing project finances
- Project budgets
- Costs
- variations and estimations
- Invoicing against project phases/deliverables
- Acquittals and the like

T4 Quality management concepts and practices
T5 Human Resource management concepts and practices within a project
T6 Communication management concepts and practices within a project
T7 Risk management and contingencies encompassing:
- Risk management concepts
- Internal risks
- External risks
- Contingencies
- Standard practices for managing risk within a project

 Risk minimisation
 Risk removal; and the like

T8 Procurement management concepts and practices
T9 Physical Resource management concepts and practices relating to equipment, technology, information and facilities

T10 Contracts encompassing:
 Contract format
 Contract content
 Interpreting contract clauses
 Legal obligations of contract parties
 Working to contract specifications
 Documentation accompanying contracts such as schedules and the like

T11 Performance assessment and continuous improvement
T12 Engineering ethics principles
T13 Customer/Client relations encompassing:

Interpersonal skills that enhance customer/client
 Dispute resolution
 Customer/client relations strategies

T14 Mechanical industry sector customs and practice encompassing:
 Equipment procurement, cost/benefit analysis and performance testing
 Typical approaches to planning and management
 Successful planning techniques
 Best practice management methods and styles

Part 2 Project Planning

This unit covers development and documentation of large electrical project proposals, milestones and completions. The unit encompasses, establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines.

KS01-EG170A Project planning
Evidence shall show an understanding of planning projects and analyzing progress to an extent indicated by the following aspects:
T1 Project planning encompassing:
T2 Purpose of project planning Evidence shall show an understanding of managing electrical projects to an extent indicated by the following aspects:
T3 Defining project parameters encompassing:
 Project scope
 Project stakeholders and clients
 Project phases and the relationship between phases
 Time requirements and limitations
 Resource requirements and limitations
 Quality requirements and limitations

T4 Time management concepts and standard practices
T5 Financial management encompassing:

Invoicing against project phases/deliverables
 Acquittals and the like

T6 Quality management concepts and practices
T7 Human Resource management concepts and practices within a project
T8 Communication management concepts and practices within a project

T9 Risk management and contingencies encompassing:
 Risk management concepts
 Internal risks
 External risks
 Contingencies
 Standard practices for managing risk within a project
 Risk minimisation
 Risk removal; and the like

T10 Procurement management concepts and practices
T11 Physical Resource management concepts and practices relating to equipment, technology, information and facilities

T12 Contracts encompassing:
 Contract format
 Contract content
 Interpreting contract clauses
 Legal obligations of contract parties
 Working to contract specifications
 Documentation accompanying contracts such as schedules and the like

T13 Performance assessment and continuous improvement
T14 Engineering ethics principles
T15 Customer/Client relations encompassing:
 Importance of customer/client relations
 Interpersonal skills that enhance customer/client
 Dispute resolution
 Customer/client relations strategies

T16 Mechanical industry sector customs and practice encompassing:
 Equipment procurement, cost/benefit analysis and performance testing

REQUIRED SKILLS AND KNOWLEDGE

 Typical approaches to planning and management
 Successful planning techniques
 Best practice management methods and styles
 Documents needed to plan a project
 Factors influencing sequence and restraints of project activities
 Critical path analysis covering graphical representation methods and methods of representing time/rates

T17 Critical path and project analysis encompassing:
 Purpose of critical path analysis
 Essential data
 Relational sequence of work activities
 Graphical representation methods
 Methods of representing time/rates
 Monitoring methods

T18 Mechanical industry sector customs and practice encompassing:

- Equipment procurement, cost/benefit analysis and performance testing
- Typical approaches to planning and management
- Successful planning techniques
- Best practice management methods and styles

Mgt 505 Quality Management and Manufacturing Engineering

What Is Quality? Customer's Perspective, Dimensions of Quality: Manufactured Products, Dimensions of Quality: Services, What Is Quality: Producer's Perspective, Meaning of Quality, Deming Wheel: PDCA Cycle, Quality Tools, Flow Chart, Cause-and-Effect Diagram, Cause-and-Effect Matrix, Check Sheets and Histograms, Pareto Analysis, TQM and QMS, Focus of Quality Management— Customers, Quality Management in the Supply Chain, Measuring Customer Satisfaction, Role of Employees in Quality Improvement, Quality Circles, Process (Quality) Improvement Teams, Quality in Services, Quality Attributes in Services, Breakthrough Strategy: DMAIC, Profitability, Cost of Quality, Prevention Costs, Appraisal Costs, Internal Failure Costs, External Failure Costs, Measuring and Reporting Quality Costs, Cost of Quality, Quality–Cost Relationship, Effect of Quality Management on Productivity, Measuring Product Yield and Productivity, Computing Product Cost per Unit, Computing Product Yield for Multistage Processes, Initial Batch Size For 100 Motors, Quality Productivity Ratio, ISO 9000, ISO 9000 Certification, Implications, and Registrars

ME 101 Applied Mathematics

-Constant acceleration, laws of motion, motion with constant acceleration, velocity-time graph, two dimensional motion, newton laws of motion, equilibrium, components of force, lever, fractional force,

-Centre of gravity, conservation of momentum, energy power, circular motion, motion in vertical circle.

ME 102 Engineering Thermodynamics

-Thermodynamic system, thermodynamic properties, quality of the working substances, thermodynamic processes, ideal gas, gas equation during a change of state, thermodynamic process for gas, vanderwaal gas equation, entropy, properties of steam, thermodynamic of working fluids

-Gas problems, method of expansion/compression, first law of thermodynamics, throttling valve, second law of thermodynamics, third law of thermodynamics

ME 104 Machine Principle

Driving machine, transmission machine, driven machines, rotating machines, machine mountings, principle of balancing, static balancing, dynamic balancing, selection of lubricants, methods of application of lubricants, properties of lubricants, bearings,copper lead alloy, rolling element bearing, linear bearing, fretting, V-belt drives, belt tension adjustment, chain drives, gear drives, shaft coupling types, clutches, method of alignment, O- rings, machine condition monitoring methods, safety gears.

ME 107 Heat Transfer

Principle of internal combustion engine, heat transfer in engine, cylinder heat flux and temperature, heat transfer equation in engine, boiling of coolant, exhaust valve, engine stroke, fuel combustion, products of combustion, ignition circuit , fuel supply lines in engine, fuel pumps, fuel injectors, fuel injection pump, fuel injection timing, fuel governor, governor control system.

ME 201 Introduction to fluid mechanics

- Nature of fluids, fluid as continuum, properties of fluids, viscosity, surface tension, compressibility, fluid statistics, pressure, pressure variation in static fluid, pressure & heat, moment of pressure.
- U tube manometer, buoyancy, basics of fluid flow, velocity field, types of flows, steady flow, unsteady flow, laminar flow, Bernoulli equation, application of Bernoulli equation.
- Discharge coefficients of nozzle, venturimeter, orifice meter, flow nozzle, pittot tube, flow control throttling, varying pump speeds.

ME 202 Introduction to Aerodynamics

- Definition and approaches of aerodynamics, centre of pressure and aerodynamic centre of air foil, airflow circulation, velocity potential, vortex flow, wind tunnel, finite wing theory , airfoil nomenclature
- Resultant force and moment acting on air foil, fundamental of inviscid compressible flow, one dimensional flow equation, quasi one dimensional flow, nozzle and diffuser flow,.
- Fundamental of viscous flow, wind tunnel, a few basic experiments.

ME 203 Control Engineering

ME 304 Non Linearity in Control System

- Feedback control structure, Laplace transform and transfer functions, state-space representation , interconnecting models in MATLAB, single pole transfer functions.
- Step response, two complex poles, effect of a zero, 3 pole transfer function, frequency response and their plotting, Bode diagram.
- Basic concept of feedback control, the closed loops, stability, steady state error, step response, stability.

ME 204 Engineering Fluid Mechanics

ME 301 Fluid Dynamics

Fluid particles, Body forces, compressible flow, incompressible flow, turbulent flow, inviscid flow, boundary layer approximation.

ME 205 Manufacturing Processes and Materials

- Non conventional machining processes, tool wear , tool characteristics, methods of monitoring tool wear, pneumatic method, acceptance sampling.
- Cutting test, electro-discharge machining, hard and soft automation, surface properties and applications, bored holes, integrated manufacturing systems, manufacturing machinery configuration.

ME 206 Introduction to turbo-machinery

- Simple turbine, meridional view, one dimension motion, velocity triangles in turbo machinery, simple analysis of wind turbines.
- Force on wind turbine blades, aerofoil operation & testing , wind turbine design, turbine power control, axial flow machines, radial and centrifugal flow machines, hydraulic turbines.
- Common design choices, turbo machine & system efficiency & reaction, dimensionless parameters for turbo

machinery, coefficients for hydraulic turbines, specific speed for turbines, hydraulic turbines, pelton wheel, analysis approach.

ME 207 Chemical Thermodynamics

Free energy diagram, variation of motor gibbs, liquid-liquid equilibrium, phase behaviour, condition for equilibrium, mole fraction of ethanol, temperature vs solid water + solid ethanol properties, liquid phases.

ME 208 Hydro Carbons

- Viscosity , Benzenes as a model compound, organic compounds, acoustic impedence, organic liquid , electrical properties of organic liquids, optical properties of organic liquids, physical properties of crude oil, densities & viscosities of crudes, viscosities of blended crude oils, coefficient of thermal expansion of crude oils.
- Acoustic impedance of crude oil, densities and viscosities, vehicle fuel pump, refinements of RVP. Thermal conductivity, physical properties of kerosenes, viscosity of kerosenes, kerosene as diluent for lubricating oil, diesel fuels, electrical conductivity of diesel fuel, heavy fuel oils, alcohol containing fuels, methanol, methanol-gasoline blends, ethanol-gasoline blends, bio-diesel fuels.

ME 209 Introduction to polymer science/ technology

Materials and process resources, manufacturing, heat shrinkable tubes, compounding mixing, polymer processing tube extrusion, crosslink , electron accelerator, tube expansion , polymers, elastomers, properties of polymers, composition of synthetic polymers, categories of polymers, basic molecule, synthetic polymers, properties of synthetic polymers, amporphous & semi crystalline, phase transition, polymer properties, crosslinking and elastic memory, fillers, additives for polymers, elastomers, overall product performance, test methods & specification, energy materials, anti tracking materials, material test method, tracking & erosion resistance test, mechanism of iron oxide, base polymer tracking resistance, track prone polymer, stress control, electrical switching behaviour.

ME 234 Wind Turbines

- Sitting of wind turbines, planning constraints, theory of wind energy ,conservation of momentum, wind turbine theory.
- Wind energy , environment, conversation energy, rated and actual power output, wind turbine types, components, anemometer.
- Speed measurement, energy & power in wind, software package

ME 305 Corrosion Prevention

Chemical effect on material, examples of corrosion, galvanic corrosion, intrinsic chemistry, coating, corrosion protection methods, polymer tracking resistance, corrosion in passivation materials, types of corrosion, stress corrosion cracking, carbon steels, concentration cell corrosion.

ME 302 Automation Robotics

- Optimization of production line, organization diagram, description of assembly and characteristics features, mechanisation, involvement of conveyor
- Assembly process, basic assembly scheme, proposal for automation, feeding storage parts, feeder design operation, method of re-filling.
- Operation assembly cell design, flexible mechanised assembly cell, , assembly line operation, investment calculation example.

ME 303 Computer Aided Design & Manufacturing

CAD/CAM System, comparison between different CAD systems, internet based computer design system, complement of data, milling of cylindrical hole, pro-engineered manufactured parts, machine tool co-ordinate system, operation set up, machining sequence program, drilling hole program, simulation program, program to calculate total machining time, reverse engineering, rapid prototyping, basic process, accurate processing, diagram for rapid prototyping techniques, other kinds of reverse engineering, kinds of materials for rapid prototyping.

ME 306 Theory of waves in materials

Equilibrium process, Claudius inequality, basic wave phenomena, wave equation, characteristics of waves, elastic volume and shear waves, vector field of displacement, approximation, convection of a disturbance in a pipe , diffusion of a wave in a pipe.

ME 334 Air-conditioning & Refrigeration

- Refrigerant piping, evaporator, compressor, condenser, compressor-condenser circuit, tools
- Air-conditioning equipment, tubing, joining refrigeration piping
- Nitrogen circuit, system charging, electrical test instruments, control equipments, thermostat, compressor

- Control circuit equipment assembly, dual fuel furnace, humidification, comfort, ventilation duct, plenum system.
- Ventilation installation, ventilation fixtures, evaporator outlet temperature, assembly of units, capillary tube, installation of indoor / outdoor units.

EE308	Sustainability

This unit covers developing strategies to address environmental and sustainability issues in the energy sector. It encompasses working safely, apply extensive knowledge of sustainable energy systems and components and their operating parameters, gathering and analysing data, applying problem solving techniques, developing and documenting alternatives solutions

KS01-EK132A **Environmental and Sustainability strategies**

Evidence shall show an understanding of greenhouse reduction strategies to an extent indicated by the following aspects:
T1 Principles of sustainability encompassing:
 ways in which ecosystems moderate climate. ways in which ecosystems purify and store water.
 ways in which ecosystems recycle waste.

T2 Problems in a sustainable world encompassing:
 changes to Australian forest cover since white settlement, and the resulting loss of ecosystem and human benefits.
 changes to Australia‘s soils since white settlement, and the resulting loss of ecosystem and human benefits.
 changes to Australia‘s waterways since white settlement, and the resulting loss of ecosystem and human benefits.
 place of environmental accounting in quantifying Australia‘s environmental losses.
 limits to Australia‘s population carrying capacity.

T3 Sustainability principles encompassing:
 principles within sustainability including: environmental accounting and economies; full cost pricing; triple bottom line ethic; ecologically sustainable development; greenhouse gas abatement; energy efficiency; resource and water use efficiency; life cycle costing; renewable energy substitution, cleaner production; waste minimisation, reuse and recycling; ecological footprint.

T4 Addressing the problem of global warming encompassing:
 greenhouse gases and their sources and quantities that contribute to global warming.
 global warming impacts for Australia for 2030 and 2070 predicted by CSIRO modelling.
 requirements to achieve stable atmospheric concentrations of greenhouse gases.
 ecologically and economically sustainable methods for achieving these stable concentrations.

T5 Greenhouse gas emissions profile encompassing:
 goals and principles of the National Greenhouse Strategy
 what a greenhouse gas inventory is, why it is required, and the sectors to which it applies
 uses to which the National Greenhouse Gas Inventory can be applied.

T6 Understanding and communicating climate change and its impacts encompassing:
 the possible impact of climate change in Australia.
 techniques for improving the understanding of climate change
 techniques for communicating to and educating the general

public on greenhouse gas induced climate change.

T7 Partnerships for greenhouse action encompassing:
 actions achievable by each level of government to implement the NGS.
 methods by which the community activity can be engaged in the reduction of greenhouse gas emissions.
 initiatives that can be undertaken by the private sector to reduce greenhouse gas emissions.
 advantages of international partnerships.
 emissions trading system.

T8 Efficient and sustainable energy use and supply encompassing:
 techniques for reducing the greenhouse intensity of energy supply.
 types of renewable energy sources suitable for use in Australia.
 methods and technique for improving end-use efficiency.

T9 Efficient transport and sustainable urban planning encompassing:
 how integrating land use and transport planning can assist the greenhouse problem.
 how each of the following can be used to mitigate greenhouse gas; travel demand and traffic management strategies; encouraging greater use of public transport, walking and cycling; freight and logistics systems; improving vehicle fuel efficiency and fuel technologies;

T10 Greenhouse sinks and sustainable land management encompassing:
 how enhancing greenhouse sinks and encouraging sustainable forestry and vegetation management can complement the AGS.
 how greenhouse gas emissions are obtained from agricultural production and describe techniques to mitigate the emissions.

T11 Models of greenhouse best practice in industrial processes and waste management encompassing:
 types and methods of reducing greenhouse gas emissions from industry.
 methods of reducing methane emissions from waste treatment and disposal.

T12 Adaptation to climate change encompassing:
 salient points in each of the key sectors that require analysis and the strategies required in the need for adaptation to climate change

ME 434 Mechatronics- Robotics

- Performance characteristics, industrial robot tests, position accuracy test, positioning & fixing robot, straight line measurement, transmission of energy, manipulator, interfacing link, end effector interfacing transmitter circuit, signal output condition, input signal circuitry.
- Remote operator station, input/ output signal parallelizing, application , dual gripper, safety joint, mechanical gripper, vacuum gripper, dual magnetic gripper, contact sensor, proximity sensor, non contact sensor, limit switch , program flow chart, thermocouple sensor.
- Robotic part transfer, robot palletizing, connection of network electronic circuit, list of components, robotic programs, velocity control code.

ME 534 Numerical Control

- Components of numerical control, flow diagram, assembly diagram, closed loop, numerical controlled lathe, types of numerical control systems, co-ordinate systems, two axis control, , Z axis control
- Incremental system, absolute system, zero shift system, BCD, ACSII code, Binary coded decimal system, sequence number, leading & trailing zero, suppression
- Feed rate, spindle speed, programming example
- Linear interpolation, circular interpolation, programmable Z depth, tool length compensation
- CNC machines, feed rate, spindle speed, circular interpolation, threading
- Threading numerical program, system subroutines
- CNC program example.

ME 634 Pneumatics

- Principle of pneumatics, force, pressure, flow & pressure drop, compressed air, vacuum pressure, atmospheric pressure, gas laws, Boyle's law, Charles's law, Concept of power transmission, Basic concept of Pneumatic system, Directional control valve.
- Pneumatic valve, valve mechanism , normally open/ close valve, spool/ poppet valve, valve conversion.
- Actuator control, time delay valve, cam roller, power valve, air motors, rotary actuator
- Pneumatic sensor, proximity sensor, control problem analysis, Pneumatic air vane governors

Mgt 503 Production & Operation Management

Analyze business operations using appropriate performance measures, such as flow time, throughput rate and capacity.

2. Propose business solutions in written and verbal forms for operations improvement and process design projects.

3. Indentify inefficiency and ineffectiveness in business operations and propose adequate minor changes or major redesigns to improve the process.

4. Understand the theory and implementations of quality control activities for different industries.

5. Use computing software to determine optimal capacity under various situations in a process.

6. Practice team skills to organize a functioning team to analyze and improve business process.

Mgt 105 Quality Management and Manufacturing Engineering

Meaning of Quality?

Quality: Customer's Perspective?

Dimensions of Quality:Manufactured Products

Dimensions of Quality: Services

Quality:Producer's Perspective

Outline Deming's 14 Points.

Deming Wheel: PDCA Cycle.

Cause-and-Effect Diagram

Pareto Analysis.

Control Chart.

Quality Management in the Supply Chain.

Quality Circles.

Quality Attributes in Services

Design for Six Sigma (DFSS).

Prevention Cost

External Failure Costs

Quality costs measure and report?

Measuring Product Yield and Productivity.

Quality–Productivity Ratio.

ISO 9000 certification?

ME 105 Electrical Principle

EE114	Electrical Power Principle

KS01-EG006A Single and three-phase transformers

Evidence shall show an understanding of single and three phase transformers to an extent indicated by the following aspects:

T1 Transformer construction encompassing:

- types of lamination style and core construction used in single-phase, three phase, double wound, auto transformers and instrument transformers.
- identification of different winding styles/types used in transformers.
- methods used to insulate low and high voltage transformers.
- construction of transformer tanks for distribution transformers.
- transformer auxiliary equipment. (Bushings, surge-diverters, tap-changers, hot oil & winding indicators, breather, Buchholz relay and

conservator).
- function of transformer auxiliary equipment.
- types of information stated on transformer nameplates.
- application of transformers.
- performing basic insulation resistance, continuity and winding identification tests.

T2 Transformer operation encompassing:
- principles of mutual induction of a transformer.
- factors that determine the induced voltage in a transformer winding.
- determining the value of a transformers secondary voltage and current given one winding's electrical details and turns ratio.
- identification of voltage and current components of a phasor diagram for a transformer on no-load.
- principles of power transferred from the primary to secondary when a load is connected using a phasor diagram neglecting impedance drops.
- selecting transformers for specific application/s.
- safety features specified in AS/NZS3000 with respect to transformers and isolating transformers.

T3 Transformer losses, efficiency and cooling encompassing:
- power losses which occur in a transformer.
- tests which allow the power losses of a transformer to be determine.
- determination of transformer losses and efficiency using test results.

relationship between transformer cooling and rating.
- methods used for natural and forced cooling of transformers.
- properties of transformer oil.
- tests conducted on transformer oil.

T4 Transformer voltage regulation and percent impedance encompassing:
- voltage regulation as applicable to a transformer.
- reasons for voltage variation in the output of a transformer.
- determine the voltage regulation of a transformer from voltage and percentage impedance values.
- percentage impedance as applied to transformers.
- determine the percent impedance by using test results.
- determine percent impedance of a transformer by calculation.

T5 Parallel operation of transformers and transformer auxiliary equipment encompassing:
- determine polarity markings for an unidentified single phase double wound transformer.
- need for parallel operation of transformers.
- conditions/restrictions required before two transformers can be connected in parallel.
- connecting transformers in parallel to supply a single load (loading on transformers operating in parallel).
- the consequences/effect of an incorrect connection.

T6 Auto-transformers and instrument transformers encompassing:
- identification of auto-transformers, voltage transformers and current transformers from their winding diagrams.
- determining voltage and current in the windings of an auto-transformer by calculation.
- advantages and disadvantages of an auto-transformer.
- AS/NZS3000 requirements with respect to transformers.
- construction of voltage transformers.
- ratings of voltage transformers.
- construction of current transformers.
- ratings of current transformers.
- precautionary measures taken to connect and disconnect instrument transformers.
- connection diagrams for instrument transformers.
- applications for auto-transformers and instrument transformers.

ME 106 Electrical Circuits

EE101	DC Circuit Problems

This unit covers determining correct operation of single source d.c. series, parallel and series-parallel circuits and providing solutions as they apply to various electrotechnology work functions. It encompasses working safely, problem solving procedures, including the use of voltage, current and resistance measuring devices, providing solutions derived from measurements and calculations to predictable problems in single and multiple path circuits.

Evidence shall show an understanding of electrical fundamentals and direct current multiple path circuits to an extent indicated by the following aspects:
T1 Basic electrical concepts encompassing:
- electrotechnology industry
- static and current electricity
- production of electricity by renewable and non renewable energy sources
- transportation of electricity from the source to the load via the transmission and distribution systems
- utilisation of electricity by the various loads
- basic calculations involving quantity of electricity, velocity and speed with relationship to the generation and transportation of electricity.

T2 Basic electrical circuit encompassing:
- symbols used to represent an electrical energy source, a load, a switch and a circuit protection device in a circuit diagram
- purpose of each component in the circuit
- effects of an open-circuit, a closed-circuit and a short-circuit
- multiple and sub-multiple units

T3 Ohm's Law encompassing:
 basic d.c. single path circuit.
 voltage and currents levels in a basic d.c. single path circuit.
 effects of an open-circuit, a closed-circuit and a short-circuit on a basic d.c. single path relationship between voltage and current from measured values in a simple circuit
 determining voltage, current and resistance in a circuit given any two of these quantities
 graphical relationships of voltage, current and resistance
 relationship between voltage, current and resistance

T4 Electrical power encompassing:
 relationship between force, power, work and energy
 power dissipated in circuit from voltage, current and resistance values
 power ratings of devices
 measurement electrical power in a d.c. circuit
 effects of power rating of various resistors

T5 Effects of electrical current encompassing:
 physiological effects of current and the fundamental principles (listed in AS/NZS 3000) for protection against the this effect
 basic principles by which electric current can result in the production of heat; the production of magnetic fields; a chemical reaction
 typical uses of the effects of current
 mechanisms by which metals corrode
 fundamental principles (listed in AS/NZS3000) for protection against the damaging effects of current

T6 EMF sources energy sources and conversion electrical energy encompassing:
 basic principles of producing a emf from the interaction of a moving conductor in a magnetic field.
 basic principles of producing an emf from the heating of one junction of a thermocouple.
 basic principles of producing a emf by the application of sun light falling on the surface of photovoltaic cells
 basic principles of generating a emf when a mechanical force is applied to a crystal

(piezo electric effect)
 principles of producing a electrical current from primary, secondary and fuel cells
 input, output, efficiency or losses of electrical systems and machines
 effect of losses in electrical wiring and machines
 principle of conservation of energy

T7 Resistors encompassing:
 features of fixed and variable resistor types and typical applications
 identification of fixed and variable resistors
 various types of fixed resistors used in the Electro technology Industry. e.g. wire-wound, carbon film, tapped resistors.
 various types of variable resistors used in the Electro technology Industry e.g. adjustable resistors: potentiometer and rheostat; light dependent resistor (LDR); voltage dependent resistor (VDR) and temperature dependent resistor (NTC, PTC).
 characteristics of temperature, voltage and light dependent resistors and typical applications of each
 power ratings of a resistor.
 power loss (heat) occurring in a conductor.
 resistance of a colour coded resistor from colour code tables and confirm the value by measurement.
 measurement of resistance of a range of variable' resistors under varying conditions of light, voltage, temperature conditions.
 specifying a resistor for a particular application.

T8 Series circuits encompassing:
 circuit diagram of a single-source d.c. 'series' circuit.
 Identification of the major components of a 'series' circuit: power supply; loads; connecting leads and switch
 applications where 'series' circuits are used in the Electro technology industry.
 characteristics of a 'series' circuit - connection of loads, current path, voltage drops, power dissipation and affects of an open circuit in a 'series' circuit.
 the voltage, current, resistances or power dissipated from measured or given values of any two of these quantities
 relationship between voltage drops and resistance in a simple voltage divider network.
 setting up and connecting a single-source series dc circuit
 measurement of resistance, voltage and current values in a single source series circuit
 effect of an open-circuit on a series connected circuit

T9 Parallel circuits encompassing:
 schematic diagram of a single-source d.c. 'parallel' circuit.
 major components of a 'parallel' circuit (power supply, loads, connecting leads and

· applications where 'parallel' circuits are used in the Electrotechnology industry.
 characteristics of a 'parallel' circuit. (load connection, current paths, voltage drops, power dissipation, affects of an open circuit in a 'parallel' circuit).
 relationship between currents entering a junction and currents leaving a junction
 relationship between branch currents and resistances in a two branch current divider network.
 calculation of the total resistance of a 'parallel' circuit.
 calculation of the total current of a 'parallel' circuit.
 Calculation of the total voltage and the individual voltage drops of a 'parallel' circuit.
 setting up and connecting a single-source d.c. parallel circuit
 resistance, voltage and current measurements in a single-source parallel circuit
 voltage, current, resistance or power dissipated from measured values of any of these quantities

 output current and voltage levels of connecting cells in parallel.

T10 Series/parallel circuits encompassing:
 schematic diagram of a single-source d.c. ‘series/parallel’ circuit.
 major components of a ‘series/parallel’ circuit (power supply, loads, connecting leads and switch)
 applications where ‘series/parallel’ circuits are used in the Electrotechnology industry.
 characteristics of a ‘series/parallel’ circuit. (load connection, current paths, voltage drops, power dissipation, affects of an open circuit in a ‘series/parallel’ circuit).
 relationship between voltages, currents and resistances in a bridge network.
 calculation of the total resistance of a ‘series/parallel’ circuit.
 calculation of the total current of a ‘series/parallel’ circuit.
 calculation of the total voltage and the individual voltage drops of a ‘series/parallel’ circuit.
 setting up and connecting a single-source d.c. series/ parallel circuit
 resistance, voltage and current measurements in a single-source d.c. series / parallel circuit
 the voltage, current, resistances or power dissipated from measured values of any two of these quantities

T11 Factors affecting resistance encompassing:
 four factors that affect the resistance of a conductor (type of material, length, cross-sectional area and temperature)
 affect the change in the type of material (resistivity) has on the resistance of a conductor.
 affect the change in ‘length’ has on the resistance of a conductor.
 affect the change in ‘cross-sectional area’ has on the resistance of a conductor.

effects of temperature change on the resistance of various conducting materials
· effects of resistance on the current-carrying capacity and voltage drop in cables.
 calculation of the resistance of a conductor from factors such as conductor length, cross-sectional area, resistivity and changes in temperature
 using digital and analogue ohmmeter to measure the change in resistance of different types of conductive materials (copper, aluminium, nichrome, tungsten) when those materials undergo a change in type of material length, cross-sectional area and temperature.

T12 Effects of meters in a circuit encompassing:
 selecting an appropriate meter in terms of units to be measured, range, loading effect and accuracy for a given application.
 measuring resistance using direct, volt-ammeter and bridge methods.
 instruments used in the field to measure voltage, current, resistance and insulation resistance and the typical circumstances in which they are used.
 hazards involved in using electrical instruments and the safety control measures that should be taken.
 operating characteristics of analogue and digital meters.
 correct techniques to read the scale of an analogue meters and how to reduce the ‘parallax’ error.
 types of voltmeters used in the Electrotechnology industry – bench type, clamp meter, Multimeter, etc.
 purpose and characteristics (internal resistance, range, loading effect and accuracy) of a voltmeter.
 types of voltage indicator testers. e.g. LED, neon, solenoid, volt-stick, series tester, etc. and explain the purpose of each voltage indicator tester.
 operation of various voltage indicator testers.
 advantages and disadvantages of each voltage indicator tester.
 various types of ammeters used in the Electrotechnology industry – bench, clamp meter, multimeter, etc.
 purpose of an ammeter and the correct connection (series) of an ammeter into a circuit.
 reasons why the internal resistance of an ammeter must be extremely low and the dangers and consequences of connecting an ammeter in parallel and/or wrong polarity.
 selecting an appropriate meter in terms of units to be measured, range, loading effect and accuracy for a given application
 connecting an analogue/digital voltmeter into a circuit ensuring the polarities are correct and take various voltage readings.
 loading effect of various voltmeters when measuring voltage across various loads.
 using voltage indicator testers to detect the presence of various voltage levels.
 connecting analogue/digital ammeter into a circuit ensuring the polarities are correct and take various current readings.
T13 Resistance measurement encompassing:
 Identification of instruments used in the field to measure resistance (including insulation resistance) and the typical circumstances in which they are used.
 the purpose of an Insulation Resistance (IR) Tester.
 the parts and functions of various analogue and digital IR Tester (selector range switch, zero ohms adjustment, battery check function, scale and connecting leads).
 reasons why the supply must be isolated prior to using the IR tester.
 where and why the continuity test would be used in an electrical installation.
 where and why the insulation resistance test would be used in an electrical installation.
 the voltage ranges of an IR tester and where each range may be used. e.g. 250 V d.c, 500 V d.c and 1000 V d.c
 AS/NZS3000 Wiring Rules requirements – continuity test and insulation resistance (IR) test.
 purpose of regular IR tester calibration.
 the correct methods of storing the IR tester after use
 carry out a calibration check on a IR Tester
 measurement of low values of resistance using an IR tester continuity functions.
 measurement of high values of resistance using an IR tester insulation resistance function.
 volt-ammeter (short shunt and long shunt) methods of measuring resistance.
 calculation of resistance values using voltmeter and ammeter reading (long and short shunt connections)
 measurement of resistance using volt-ammeter methods

T14 Capacitors and Capacitance encompassing:
 basic construction of standard capacitor, highlighting the: plates, dielectric and connecting leads
 different types of dielectric material and each dielectric’s relative permittivity.
 identification of various types of capacitors commonly used in the Electrotechnology industry (fixed value capacitors -stacked plate, rolled, electrolytic, ceramic, mica and Variable value capacitors – tuning and trimmer)
 circuit symbol of various types of capacitors: standard; variable, trimmer and polarised
 terms: Capacitance (C), Electric charge (Q) and Energy (W)

 unit of: Capacitance (Farad), Electric charge (Coulomb) and Energy (Joule)
 factors affecting capacitance (the effective area of the plates, the distance between the plates and the type of dielectric) and explain how these factors are present in all circuits to some extent.
 how a capacitor is charged in a d.c. circuit.
 behaviour of a series d.c. circuit containing resistance and capacitance components. - charge and discharge curves

the term 'Time Constant' and its relationship to the charging and discharging of a capacitor.
 calculation of quantities from given information: Capacitance (Q = VC); Energy (W =½CV2); Voltage (V = Q/C)
 calculation one time constant as well as the time taken to fully charge and discharge a given capacitor. (τ = RC)
 connection of a series d.c. circuit containing capacitance and resistor to determine the time constant of the circuit

T15 Capacitors in Series and Parallel encompassing:
 hazards involved in working with capacitance effects and the safety control measures that should be taken.
 safe handling and the correct methods of discharging various size capacitors
 dangers of a charged capacitor and the consequences of discharging a capacitor through a person
 factors which determine the capacitance of a capacitor and explain how these factors are present in all circuits to some extent.
 effects of capacitors connected in parallel by calculating their equivalent capacitance.
 effects on the total capacitance of capacitors connected in series by calculating their equivalent capacitance.
 Connecting capacitors in series and/or parallel configurations to achieve various capacitance values.
 common faults in capacitors.
 testing of capacitors to determine serviceability.
 application of capacitors in the Electrotechnology industry.

ME 108 Principle of Engine

Principle of internal combustion engine, heat transfer in engine, cylinder heat flux & temperature, heat transfer equation in engine, boiling of coolant, exhaust valves, engine strokes, fuel combustion, product of combustion, ignition circuit, fuel supply lines in engine, fuel pump, fuel injectors, fuel injector, fuel injection pump, fuel injection timing, fuel governor, governor control system.

Diploma in Information Technology (Course Outline)

		St Clements+ Highlight Course	Pt				Australian IT Diploma Course
		THEORETICAL TRAINING					
	ICT 101	Information Technology Fundamentals	3		GC	ICAICT501A	Research and review hardware technology opti
	ICT 102	Computer Applications and Operations	2		GC GC	ICASAS509A ICASAS503A	Provide client IT support services Perform systems tests
	ICT 103	Applied Programming	5	BAE601	GB	ICAPRG523A	Apply advanced programming skills in another
	ICT 104	Program Project	5	BAE601	GB GC GD GG	ICAPRG502A ICAICT510A ICAWEB507A CAPMG501A	Manage a project using software management Determine appropriate IT strategies and soluti Customise a complex IT content management Manage IT projects
	ICT 105	Systems Analysis and Programs	5	BAE603	Core GC	ICAICT509A ICAICT502A	Gather data to identify business requirements Develop detailed component specifications fro
					Core	ICAICT511A	Match IT needs with the strategic direction of t
	ICT 106	Software Engineering	5	BAE603	GB GB GB	ICAPRG502A ICAPRG510A ICAPRG512A	Manage a project using software management Maintain custom software Prepare for the build phase of an IT system
	ICT 107	Business Information Systems	5		GA	ICANWK501A	Plan, implement and test enterprise communic
			30				
		WORK PERFORMANCE					
	Task 1	Provide the OHS Procedure in workplace			Core	BSBOHS509A	Ensure a safe workplace
	Task 2	Provide the procedure to maintain the IT equipments in workplace			Core	BSBSUS501A	Develop workplace policy and procedures for s
	Task 3	Take the record of sound & picture from an event			GE	ICAGAM504A	Manage interactive media production
	Task 4	Take the digital video by using digital camera & edit/ convert to other formats by provided software			GF	CADMT501A	Incorporate and edit digital video

Advanced Diploma in Information Technology (Course Outline)

		St Clements+ Highlight Course	Pt				Australian IT Diploma Course
		THEORETICAL TRAINING					
	ICT 201	Organisational Behaviour	5			BSBWOR502B BSBMGT516A BSBSUS501A	Ensure team effectiveness Facilitate continuous improvement Develop workplace policy and procedures for s
	ICT 202	Information Systems Principles and Networking	5	BAE602		ICANWK516A ICANWK532A ICANWK614A	Determine best-fit topology for a local network Identify and resolve network problems Manage IT security
	ICT 203	Information Systems, Analysis and Design	5	BAE602	2	ICAPRG602A ICAICT509A ICAICT603A ICAICT608A ICAPMG606A ICAICT713A	Manage the development of technical solutions specifications Gather data to identify business requirements Manage the use of appropriate development m Interact with clients on a business level Manage IT project quality Manage IT services
	ICT 204	Advanced Programming	5	BAE601		ICAPRG527A ICAPRG501A ICAPRG505A	Apply intermediate object-oriented language sl Apply advanced object-oriented language skills Build advanced user interface
	ICT 205 ICT 206	Project Work WORK PERFORMANCE ASSESSMENT Total	5 30	BAE602	Core Core Core Core Core Core	ICAPRG506A ICAPMG601A ICAPMG602A ICAPMG603A ICAPMG604A ICAPMG605A	Manage copyright, ethics and privacy in an IT e Establish IT project governance *Manage IT project initiation *Manage IT project planning *Manage IT project delivery *Manage IT project closure

	ICT 101	Information Technology Fundamentals

Structure of computer
IntroductionToComputerHardware
Advanced Hardware
Architecture
Connect Internal Hardware
Requirement for a good computer
Hard Drive Controller
Mother
System Bus
CPU
Power Supply & Surge Protector
Computer Repair
Computer Network

	ICT 102	Computer Applications and Operations

Word
Creating_Web_Pages_in_Word_
Customize_the_Word__Environment
Editing_a_Document_in_Word
Formatting_Paragraphs_in_Word
Formatting_Text_in_
Graphics in Word
Lists in Word
Macros in Word
Page Formatting in Word
Proof Reading Document in Word
Reference Citation Word

Table Contents Word
Track Change Word
Word Style
Excel

Class Notes-Basic Excel
Advanced Excel
Class Notes-Basic Access
Advanced Access
Power Point
AutoCAD
AutoCAD Class Notes-HTML File
Advanced AutoCAD

BAE 601 Computer Programming (3 pt)

Part (1) Overview Knowledge of the subject

Select any of the following textbooks

- C Programming
- C++ Programming
- C# Programming
- Object Oriented Programming
- C Programming in Linux

IT 401 Object Oriented Programming (1 pt)
IT 402 Structured Programming (1 pt)
IT 403 Visual Basic Programming (1 pt)
For **ICT 204 Advanced Programming & ICT 104 Program Projects**
More detailed aspects of programs are to be written

BAE 602 Computer Network (1 pt)

Computer Network
Peer to peer networking
Client server networking
Network hardware
Network cable
Hub
Wired network
Wireless network card
Firewall
Wiring the network
Wiring the network

Running the network program
Viewing network connection
Network set up on additional computers
Viewing network connection
Introduction
Network model
Data and signals
Data and signals
Data rate limit
Performance
Digital transmission
Digital transmission
Analog transmission
Analog transmission
Bandwidth utilization/ Multiplexing/ Spreading
Bandwidth utilization/ Multiplexing/ Spreading
Transmission media
Error detection & correction
Error detection and correction
Defining needs
Area covered
Organization information requirement
System VS Procedure
Types of systems
What are the systems?
Infrasturcture
Support system
Data mart
Organizational structure
Planning for system development
System design
Security of information system
Risk management

For ICT 203 Information System Analysis & Design
practical aspect of design the network system for given information system is to be performed

BAE 603 Software Engineering (2 pt)

Introduction
Software process
Feasibility study
Project management
Documentation, Requirement analysis
Requirement specification
Business/ Legal aspect

Source code management
Formal specification
Object oriented design 1
Object oriented design 2
Object oriented design 3
System Architecture 1
System Architecture 2
System Architecture 3
Design for utility
Performance of computer system
Coding standard/ Tools for designing 1
Dependable system 1 Reliability
Dependable system 2 Validation
Law aspect
Risks in software engineering
Software engineering as engineering

Nano Technology

What is Nano technology?
Motivation for Nano technology
Scaling laws
Nano technology

For

	ICT 105	Systems Analysis and Programs

Analysing the system used & preparing the software & hardware required to perfiorm the analysed system are to be executed.

	ICT 107	Business Information Systems

- What is Organization?
- Need for Organization
- Data vs. Information
- Information Quality Checklist
- Organization & Information Requirements
- Nature of Business & Information Requirements
- Systems vs. Procedures
- Computer based Information System (CBIS)
- Cross-Functional Coordination
- Transaction Processing System
- Data Processing Tasks
- Management Information System
- Data Warehouse
- Data Mart
- Online Analytical Processing (OLAP)
- Data Mining
- Knowledge / Intelligent Systems
- Components of an Expert System
- Key CRM Tasks
- Organizational Structure
- Planning Productions/Operations
- Accounting & Financial Information Systems
- Decision-making process
- Business planning

	ICT 201	Organisational Behaviour

- Explain work organizations, their basic characteristics and their connections to the wider social context.
- Define the term organizational behaviour and describe the contribution to the field of organizational behaviour of three disciplines; psychology, sociology and anthropology.
- Describe the evolution of organizational behaviour as a field of research and learning.
- Explain an integrated framework for conceptualizing organizational behaviour.
- Describe the challenges of conducting research on organizational behaviour.
- **What is OB?**
- **Why study OB (I)?**
- Work organization
  - The behaviour of individuals and groups
  - Organizational design and technology in which human behaviour takes place
- Control processes over resources, people and work activities
- Management processes, for example, the recruitment, training & rewards to workers
- Interaction between the organizational, the external and evaluative context
- Relationship between organizational agency and societal stability or instability at large
- the environmental forces as external context inputs;
- the processes for converting the inputs into outputs within an individual, group managerial milieu as the organizational context
- the evaluation or organizational process as evaluation outputs
- a feedback loop which links the organizational processes and external environmental forces, with the feedback flowing into the organization and from the organization into the environmental external context
- The multidisciplinary nature of organizational behaviour

- Diversity
- Ways of approaching OB
- Ways of approaching research
- Ways of researching OB

YEAR (1)

Diploma of Management

Mgt 101 Management
Mgt 102 Performance Management
Mgt 103 Operation Management
Mgt 105 Quality Management
Mgt 108 Computer Application in Management

Mgt 107 Industrial Risk & Safety Assessment
Mgt 104 Project Management

YEAR (2)

Advanced Diploma of Information Technology Management

Study the following units

ICT 103 Applied Programming

ICT 105 Systems Analysis and Programs

ICT 106 Software Engineering

ICT 202 Information Systems Principles and Networking

ICT 203 Information Systems, Analysis and Design

ICT 204 Advanced Programming

ICT 104 Program Projects

Mgt 501 Communication Skills & Management Leadership

Study BAE 508 Industrial Engineering & Industrial Management . You need to read the books in English.

(Focus on Mgt 501 Communication Skills &Mgt 501 Basic Management)

& do the exercises assigned by teacher.

Advanced Diploma of Management

(30 points)

Master of Management (Qualified 1) Course for Business/ Accounting Degree Holders

This course trains the students to work as middle class managers. It consists of customers service. change management, leadership, safety management, risk management, professional development, conflict management, work-based training, office management, and office management.

Study the following units

Compulsory Units (Each 3 Points)

Mgt 201 Customer Service Management
Mgt 202 Change Management
Mgt 203 Inventory & Budget Management
Mgt 204 Continuous Improvement Management
Mgt 208 Safety Management
Mgt 209 Risk Management

Mgt 210 Professional Development Management

Mgt 211 Leadership

Optional Units (Do any 2 units) (Each 3 Points)

Mgt 207 Business Letter Writing

Mgt 205 Office Management

Mgt 212 Preparing Portfolios

Mgt 213 Conflict Management

Mgt 206 Work-based Training Management

Mgt 101 Management

- What is Organization?
- Need for Organization
- Data vs. Information
- Information Quality Checklist
- Organization & Information Requirements
- Nature of Business & Information Requirements
- Systems vs. Procedures
- Computer based Information System (CBIS)
- Cross-Functional Coordination
- Transaction Processing System
- Data Processing Tasks
- Management Information System
- Data Warehouse
- Data Mart
- Online Analytical Processing (OLAP)
- Data Mining
- Knowledge / Intelligent Systems
- Components of an Expert System
- Key CRM Tasks
- Organizational Structure
- Planning Productions/Operations
- Accounting & Financial Information Systems
- Decision-making process
- Business planning

- Explain work organizations, their basic characteristics and their connections to the wider social context.

- Define the term organizational behaviour and describe the contribution to the field of organizational behaviour of three disciplines; psychology, sociology and anthropology.

- Describe the evolution of organizational behaviour as a field of research and learning.

- Explain an integrated framework for conceptualizing organizational behaviour.

- Describe the challenges of conducting research on organizational behaviour.

- **What is OB?**

- **Why study OB (I)?**

- Work organization

· The behaviour of individuals and groups

· Organizational design and technology in which human behaviour takes place

- Control processes over resources, people and work activities

- Management processes, for example, the recruitment, training & rewards to workers

- Interaction between the organizational, the external and evaluative context
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- the environmental forces as external context inputs;
- the processes for converting the inputs into outputs within an individual, group managerial milieu as the organizational context
- the evaluation or organizational process as evaluation outputs
- a feedback loop which links the organizational processes and external environmental forces, with the feedback flowing into the organization and from the organization into the environmental external context
- The multidisciplinary nature of organizational behaviour
- Diversity
- Ways of approaching OB
- Ways of approaching research
- Ways of researching OB

Mgt 104 Project Management

Part 1 Project Management

This unit covers the management of large electrical projects involving design, modifications, installation, and/or maintenance of systems and equipment. The unit encompasses management of safety, budget variation, personnel, resources, critical path timelines and completion documentation.

KS01-EG169A Business project management
Evidence shall show an understanding of managing electrical projects to an extent indicated by the following aspects:
T1 Defining project parameters encompassing:
· Project scope
· Project stakeholders and clients
· Project phases and the relationship between phases

T2 Time management concepts and standard practices
T3 Financial management encompassing:
· Financial management concepts
· Standard practices for managing project finances
· Project budgets
· Costs
· variations and estimations
· Invoicing against project phases/deliverables
· Acquittals and the like

T4 Quality management concepts and practices
T5 Human Resource management concepts and practices within a project
T6 Communication management concepts and practices within a project
T7 Risk management and contingencies encompassing:
· Risk management concepts
· Internal risks
· External risks
· Contingencies
· Standard practices for managing risk within a project
· Risk minimisation
· Risk removal; and the like

T8 Procurement management concepts and practices
T9 Physical Resource management concepts and practices relating to equipment, technology, information and facilities

T10 Contracts encompassing:
· Contract format

· Contract content
· Interpreting contract clauses
· Legal obligations of contract parties
· Working to contract specifications
· Documentation accompanying contracts such as schedules and the like

T11 Performance assessment and continuous improvement
T12 Engineering ethics principles
T13 Customer/Client relations encompassing:

· Interpersonal skills that enhance customer/client
· Dispute resolution
· Customer/client relations strategies

T14 **Business** sector customs and practice encompassing:
· Equipment procurement, cost/benefit analysis and performance testing
· Typical approaches to planning and management
· Successful planning techniques
· Best practice management methods and styles

Part 2 Project Planning

This unit covers development and documentation of large electrical project proposals, milestones and completions. The unit encompasses, establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines.

KS01-EG170A Business project planning
Evidence shall show an understanding of planning projects andanalyzing progress to an extent indicated by the following aspects:
T1 Project planning encompassing:
T2 Purpose of project planning Evidence shall show an understanding of managing electrical projects to an extent indicated by the following aspects:
T3 Defining project parameters encompassing:
· Project scope
· Project stakeholders and clients
· Project phases and the relationship between phases
· Time requirements and limitations
· Resource requirements and limitations
· Quality requirements and limitations

T4 Time management concepts and standard practices
T5 Financial management encompassing:

· Invoicing against project phases/deliverables
· Acquittals and the like

T6 Quality management concepts and practices
T7 Human Resource management concepts and practices within a project
T8 Communication management concepts and practices within a project

T9 Risk management and contingencies encompassing:
· Risk management concepts
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· Working to contract specifications
· Documentation accompanying contracts such as schedules and the like

T13 Performance assessment and continuous improvement
T14 **Business** ethics principles
T15 Customer/Client relations encompassing:
· Importance of customer/client relations
· Interpersonal skills that enhance customer/client
· Dispute resolution
· Customer/client relations strategies

T16 **Business** sector customs and practice encompassing:
· Equipment procurement, cost/benefit analysis and performance testing

REQUIRED SKILLS AND KNOWLEDGE
· Typical approaches to planning and management · Successful planning techniques · Best practice management methods and styles · Documents needed to plan a project · Factors influencing sequence and restraints of project activities · Critical path analysis covering graphical representation methods and methods of representing time/rates T17 Critical path and project analysis encompassing: · Purpose of critical path analysis · Essential data · Relational sequence of work activities · Graphical representation methods · Methods of representing time/rates · Monitoring methods
T18 **Business** sector customs and practice encompassing: · Equipment procurement, cost/benefit analysis and performance testing · Typical approaches to planning and management · Successful planning techniques · Best practice management methods and styles

Mgt 108 Computer Application in Management

Structure of computer

IntroductionToComputerHardware

Advanced Hardware

Architecture

Connect Internal Hardware

Requirement for a good computer

Hard Drive Controller

Mother

System Bus

CPU

Power Supply & Surge Protector

Computer Repair

Computer Network

Word

Creating_Web_Pages_in_Word_

Customize_the_Word__Environment

Editing_a_Document_in_Word

Formatting_Paragraphs_in_Word

Formatting_Text_in_

Graphics in Word

Lists in Word

Macros in Word

Page Formatting in Word

Proof Reading Document in Word

Reference Citation Word

Table Contents Word

Track Change Word

Word Style

Excel

Class Notes-Basic Excel

Advanced Excel

Class Notes-Basic Access

Advanced Access

Power Point

AutoCAD

AutoCAD Class Notes-HTML File

Advanced AutoCAD

Mgt 103 Operation Management

Mgt 503 Production & Operation Management

Analyze business operations using appropriate performance measures, such as flow time, throughput rate and capacity.

2. Propose business solutions in written and verbal forms for operations improvement and process design projects.

3. Indentify inefficiency and ineffectiveness in business operations and propose adequate minor changes or major redesigns to improve the process.

4. Understand the theory and implementations of quality control activities for different industries.

5. Use computing software to determine optimal capacity under various situations in a process.

Mgt 105 Quality Management and Manufacturing Engineering

Meaning of Quality?

Quality: Customer's Perspective?

Dimensions of Quality:Manufactured Products

Dimensions of Quality: Services

Quality:Producer's Perspective

Outline Deming's 14 Points.

Deming Wheel: PDCA Cycle.

Cause-and-Effect Diagram

Pareto Analysis.

Control Chart.

Quality Management in the Supply Chain.

Quality Circles.

Quality Attributes in Services

Design for Six Sigma (DFSS).

Prevention Cost

External Failure Costs

Quality costs measure and report?

Measuring Product Yield and Productivity.

Quality–Productivity Ratio.

ISO 9000 certification?

Mgt 107 Industrial Risk & Safety Assessment

This unit covers the mandatory requirements of persons in a supervisory role to implement and monitor an organisation's occupational health and safety policies, procedures and programs. It encompasses understanding an organisation's OHS obligations, providing safety information to staff, implementing and monitoring participative arrangements, safety procedures and training and maintaining safety records.

Occupational Health and Safety, supervisory responsibilities
Evidence shall show an understanding of OHS enterprise responsibilities to an extent indicated by the following aspects:
T1 Provisions of relevant occupational health and safety legislation
T2 Principles and practice of effective occupational health and safety management
T3 Workplace hazards, range and selection of control measures
T4 Organisational health and safety management systems and policies and procedures needed for legislative compliance
T5 Impact of characteristics and composition of the workforce on occupational health and safety management
T6 Relevance of occupational health and safety management to other organisational management policies, procedures and systems.
T7 Analysis of entire work environment and judge occupational health and safety interventions
T8 Analysis of relevant workplace data
T9 Ability to assess resources needed for risk control

BAE 601 Computer Programming (3 pt)

Part (1) Overview Knowledge of the subject

Select any of the following textbooks

- C Programming
- C++ Programming
- C# Programming
- Object Oriented Programming
- C Programming in Linux

IT 401 Object Oriented Programming (1 pt)

IT 402 Structured Programming (1 pt)

IT 403 Visual Basic Programming (1 pt)

For **ICT 204 Advanced Programming & ICT 104 Program Projects**
More detailed aspects of programs are to be written

BAE 603 Software Engineering (2 pt)

Introduction

Software process

Feasibility study

Project management

Documentation, Requirement analysis

Requirement specification

Business/ Legal aspect

Source code management

Formal specification

Object oriented design 1

Object oriented design 2

Object oriented design 3

System Architecture 1

System Architecture 2

System Architecture 3

Design for utility

Performance of computer system

Coding standard/ Tools for designing 1

Dependable system 1 Reliability

Dependable system 2 Validation

Law aspect

Risks in software engineering

Software engineering as engineering

Nano Technology

What is Nano technology?

Motivation for Nano technology

Scaling laws

Nano technology

BAE 602 Computer Network (1 pt)

Computer Network

Peer to peer networking

Client server networking

Network hardware

Network cable

Hub

Wired network

Wireless network card

Firewall

Wiring the network

Wiring the network

Running the network program

Viewing network connection

Network set up on additional computers

Viewing network connection

Introduction

Network model

Data and signals

Data and signals

Data rate limit

Performance

Digital transmission

Digital transmission

Analog transmission

Analog transmission

Bandwidth utilization/ Multiplexing/ Spreading

Bandwidth utilization/ Multiplexing/ Spreading

Transmission media

Error detection & correction

Error detection and correction

Defining needs

Area covered

Organization information requirement

System VS Procedure

Types of systems

What are the systems?

Infrasturcture

Support system

Data mart

Organizational structure

Planning for system development

System design

Security of information system

Risk management

Mgt 501 Communication Skills & Management Leadership

- Effective communication skills
- Perspective of communication skill
- Elements of communication
- Communication styles
- Basic listening skills
- Effective written communication
- Management briefs

- Perspective on organization
- Leadership
- Understanding individuals
- Group work
- Motivation
- Goal setting
- Communication in leadership & group

Mgt 102 Performance Management

- Introductions and Learning Objectives
- Performance Management Defined (Elements of a Performance Mgmt System, Benefits of an Annual Performance Development Plan, The Performance Mgmt Timeline)
- Setting "SMART" Annual Objectives
- Roles of Manager and Direct Report in the Performance Development Plan
- Coaching Direct Reports During the
- Performance Management Cycle
- Effective Listening Skills
- Monitoring Performance and Conducting Interim Meetings
- Preparation for and Conducting the
- Annual Review Meeting
- Handling Challenging Situations
- Action Plan, Summary and Evaluation

· Mgt 501+ · Mgt 503	Basic Management+ (EE309) Production & Operation Management

Part 1 Project Management

This unit covers the management of large mechanical projects involving design, modifications, installation, and/or maintenance of systems and equipment. The unit encompasses management of safety, budget variation, personnel, resources, critical path timelines and completion documentation.

KS01-EG169A Project management

Evidence shall show an understanding of managing mechanical projects to an extent indicated by the following aspects:
T1 Defining project parameters encompassing:
· Project scope
· Project stakeholders and clients
· Project phases and the relationship between phases

T2 Time management concepts and standard practices

T3 Financial management encompassing:
· Financial management concepts
· Standard practices for managing project finances
· Project budgets
· Costs
· variations and estimations
· Invoicing against project phases/deliverables
· Acquittals and the like

T4 Quality management concepts and practices
T5 Human Resource management concepts and practices within a project
T6 Communication management concepts and practices within a project
T7 Risk management and contingencies encompassing:
· Risk management concepts
· Internal risks
· External risks
· Contingencies
· Standard practices for managing risk within a project
· Risk minimisation
· Risk removal; and the like

T8 Procurement management concepts and practices
T9 Physical Resource management concepts and practices relating to equipment, technology, information and facilities

T10 Contracts encompassing:
· Contract format
· Contract content
· Interpreting contract clauses
· Legal obligations of contract parties
· Working to contract specifications
· Documentation accompanying contracts such as schedules and the like

T11 Performance assessment and continuous improvement
T12 Engineering ethics principles
T13 Customer/Client relations encompassing:

Interpersonal skills that enhance customer/client
· Dispute resolution
· Customer/client relations strategies

T14 Mechanical industry sector customs and practice encompassing:
· Equipment procurement, cost/benefit analysis and performance testing
· Typical approaches to planning and management
· Successful planning techniques
· Best practice management methods and styles

Part 2 Project Planning

This unit covers development and documentation of large electrical project proposals, milestones and completions. The unit encompasses, establishing budgets, critical path analysis, development of workflow strategies, documenting, presenting and negotiating budgets and timelines.

KS01-EG170A Project planning
Evidence shall show an understanding of planning projects and analyzing progress to an extent indicated by the following aspects:
T1 Project planning encompassing:
T2 Purpose of project planning Evidence shall show an understanding of managing electrical projects to an extent indicated by the following aspects:

T3 Defining project parameters encompassing:
· Project scope
· Project stakeholders and clients
· Project phases and the relationship between phases
· Time requirements and limitations
· Resource requirements and limitations
· Quality requirements and limitations

T4 Time management concepts and standard practices
T5 Financial management encompassing:

· Invoicing against project phases/deliverables
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T18 Mechanical industry sector customs and practice encompassing: · Equipment procurement, cost/benefit analysis and performance testing · Typical approaches to planning and management · Successful planning techniques · Best practice management methods and styles

Contents

Mgt 201 Customer Service Management

- Internal & external customers,
- customer focused organization
- Customer-Centric Organization
- Customer Service Environment.
- Delivery Systems,
- Good Customer Service,
- Effective Communication Skills,
- Telephone Skills & Written Communication,
- Dealing with Difficult Behaviour

Mgt 202 Change Management

- Change management approach.,
- Managing Change,
- Drivers of Change Model,
- Business Imperative,
- Organizational Imperatives,
- Cultural Imperatives ,
- Employee Behaviour related .

Mgt 203 Inventory & Budget Management

- Budget ,
- Budgeting,
- Budgeting Process.,
- Budget Management. & Budget activities.,
- importance , requirement & purpose of budgeting.,
- Forecast of Income and Expenditure & Tool for decision making.,

- Business Plan.
- cash flow forecasting.,
- organization budget.

Mgt 204 Continuous Improvement Management

- Successful organisations of the future,
- methodology for continuous improvement of project team ,
- consulting and training contexts,
- completeness of approach,
- Quality Management Systems.,
- Strategy for the organization.
- Process of continuous improvement for organization.,
- Structure for the project team,
- the roles of facilitator,
- elements for continuous improvement.

Mgt 205 Office Management

- Role of an office,
- important functions of an office,
- requirements of an ideal office,
- various functions of an office,
- various types of offices,
- scope of Office Management.
- Organising an Office.,
- office accommodation,
- office location,
- layout of an office, filing system,
- indexing,
- Mechanisation,
- Desktop Publishing

Mgt 206 Work-based Training Management

- Role of workplace facilitator.,
- workplace learning activities,
- assessing learner at workplace,
- support required for workplace learner,
- work-based learning,
- mentoring.,
- work-based learning

Mgt 207 Business Letter Writing

- Grammar,
- business letter format,
- writing practice,
- business communication.

Mgt 208 Safety Management

- Benefits of OHS, Operational Responsibilities,
- Workplace Health Issues,
- workplace hazards
- Substance Abuse,
- Job-related Stress,
- Workplace Health Programs,

- Drug Testing Programs.
- Workplace Safety Issues,
- General Duty Standard of employee,
- Personal Protective Equipment ,
- OHS auditing,
- OHS Risk Management.

Mgt 209 Risk Management

- Aspects of Risk Management,
- Predictions for risk,
- Types of Risk,
- risk impact on decision making.
- Risk Source Classification Approach,
- Natural System, Human risks ,
- Political risks and Cultural risks,
- Primary Reasons of Failure,
- Resistance to Manage Risk,
- Methods for Treating Risk,
- important in risk management,
- Derivatives and hedging, risk reduction.

Mgt 210 Professional Development Management

- Work Priorities ,
- SWOT Analysis,
- Professional Development,
- Multisource (360-degree) Feedback,
- Executive Coaching,
- professional development plan.
- Work performance.

Mgt 211 Leadership

- Types of leadership ,
- New Model of Leadership,
- manager and leader,
- competencies of a leader.

Mgt 212 Preparing Portfolios

- Portfolio preparation techniques,
- portfolio contents,
- types of portfolios,
- portfolio quality,
- contents of job search portfolio.

Mgt 213 Conflict Management

- Meaning of . Conflict
- dispute
- Emotions in Conflict Management
- Positive affect in Negotiation
- Negative affect in Negotiation.
- Forms of resolving conflict (Alternative Dispute Resolution)
- Kinds of Adjudication.
- Components of Mastery of Environment?

- conflict blue print.
- Conflict Diagnosis
- Steps in Conflict Diagnosis.

IQY Technical College's Professional Diploma in Engineering Curriculum

COURSE STRUCTURE

Year	Course	Total Credit Point
	Entry –Year 10	
	Year 11—Bridging Program	
	Year 12-- Certificate in Pre-vocational Studies	
1	Diploma in Engineering (Electrical/Civil/Mechanical)	30
	Award- Diploma in Engineering	30
2	Advanced Diploma in Engineering (Electrical/Civil/Mechanical)	30
	Award- Advanced Diploma in Engineering	60
3+4	Professional Diploma in Engineering (Electrical/Civil/Mechanical/Mechatronics/Building Services) (Electrical/Civil/Mechanical with Renewable Energy)	60
	Award-Professional Diploma in Engineering	120
	Total years spent after Year 10	6 Years

- The entry qualification for IQY Technical College's courses is Year 12 (International) Standard.
- The students who have completed Year 10 Examination require the Year 11+12 Level bridging study before commencing the major programs.
- Year 11+12 is standardized with Australian NSW Year 12 curriculum.

Please refer_ http://www.highlightcomputer.com/y712lessons.htm for details

IQY Technical College's Professional Diploma in Engineering Curriculum

Professional Diploma in Engineering Programs of IQY Technical College are designed at the same standard of relevant Bachelor of Engineering degrees.. Although the word "Bachelor of Engineering" is utilized, the award of IQY Technical College is Professional Diploma in Engineering.

Bachelor of Engineering (Electrical)

Bachelor of Engineering (Civil)

Bachelor of Engineering (Mechanical)

Bachelor of Engineering (Civil-Building Services)

Bachelor of Engineering (Mechanical-Mechatronics)

Bachelor of Applied Science (Information Technology)

Bachelor of Business

Professional Diploma/ Bachelor of Engineering (Electrical)

YEAR 3 +4

BACHELOR OF APPLIED ENGINEERING (ELECTRICAL)

Subjects	Points	Competency Units
BAE 401 Advanced Engineering Mathematics	9	Maths 301 Introduction to Complex Variables (1 pt) Maths 302 Elementary Linear Algebra (1 pt) Maths 401 Continuous Distributions (1 pt) Maths 402 Discrete Distributions (1 pt) Maths 403 Engineering Mathematics (1 pt) Maths 501 Introduction to Probability(1 pt) Maths 501 Linear Algebra & Matrices (1 pt) Maths 502 Finite Difference Methods for Partial Differential Equations & Mathematical Modelling (1 pt) Maths 601 Random Variables (1 pt)

BAE 402 Calculus	3	Maths 304 Integration and Differential Equations. (1 pt) Maths 403 Second Order Ordinary Differential Equations (1 pt) Maths 303 Engineering Mathematics (1 pt)
BAE 403 Engineering Mechanics	1	ME 301 Applied Mathematics (1 pt)
BAE 404 Engineering Materials & Thermodynamics	3	ME 334 Engineering Thermodynamics (1 pt) ME 434 Wind Turbines (1 pt) ME 634 Pneumatics (1 pt)
BAE 405 Advanced Circuit Analysis	3	EE 301 Electrical Circuits (1 pt) EE 303 Engineering Circuit Analysis (1 pt) EE 404 Electrical Measurement (1 pt)
BAE 406 Electro-mechanics	2	EE 502 Electrical Machines (1 pt) ME 301 Machine Principle (1 pt)
BAE 407 Advanced Electro-magnetics Field & Materials	1	EE 407 Electromagnetism (1 pt)
BAE 408 Analogue & Digital Electronics	5	EE 403 Introduction to Electronic Engineering (1 pt) EE 524 Power Electronics & Applied Electronics (1 pt) EE 405 Digital System (1 pt) EE 526 Digital Signal Processing (1 pt) EE 527 Digital Image Processing 1/ 2 (1 pt)
BAE 501 Advanced Power Systems & Power Transmission Networks	3	EE 512 Power System (1 pt) EE 302 Power System Technology (Optional) EE 402 Electrical Power (1 pt) EE 513 Power Transmission and Distribution Lines (1 pt)
BAE 502 Linear System	1	EE 304 Computer Mathematics (1 pt)
BAE 503 Control System	4	EE 601 Non Linear Control Applications (1 pt)

		EE 601 Control Engineering , Feedback and Control System , P ID_Control (1 pt) EE 624 Process Control (1 pt) ME 534 Numerical Control Part 1 / 2 (1 pt)
BAE 504 Power System Analysis	1	EE 614 Power System Analysis
BAE 505 Power System Optimization	1	EE 613 Power System Optimization
BAE 506 Power System Stability & Protection	**2**	EE 615 Power System Stability & Power Quality (1 pt) EE 616 Power System Protection (1 pt)
BAE 507 Electro-mechanical Energy Conversion	2	EE 602 Motor Control Electronics (1 pt) ME 434 Mechtronics & Robotics (1 pt)
BAE 508 Industrial Engineering & Industrial Management	1	Mgt 501 Basic Management & Communication Skills (1 pt)
BAE 601 Computer Programming	3	IT 401 Object Oriented Programming (1 pt) IT 402 Structured Programming (1 pt) IT 403 Visual Basic Programming (1 pt
BAE 602 Computer Network	1	ICT 202 Information Systems Principles and Networking (1 pt)
BAE 603 Software Engineering	3	ICT 106 Software Engineering (1 pt) ICT 203 Information Systems, Analysis and Design (1 pt) EE 626 Nano Technology (1 pt)
BAE 604 Telecommunication Engineering	2	EE 525 Data Communication (1 pt) EE 603 Electronics Telecommunication (1 pt)
BAE 605 Engineering Management	5	Mgt 502 Operation Management (1 pt) Mgt 503 Production & Operation Management (1 pt) Mgt 504 Project Management (1 pt)

		Mgt 505 Quality Management and Manufacturing Engineering (1 pt) Mgt 506 Strategic Financial Management (1 pt)
BAE 606 Building Service Electrical & Mechanical Engineering	2	EE 617 Building Electrical and Mechanical System (1 pt) ME 334 Airconditioning and Refrigeration (1 pt) CE 301 Building Construction (Optional) CE 301 Conceise Hydroulics (Optional)
BAE 607 Radio Wave Propagation & Microwave Techniques	2	EE 625 Radio Wave Propagation (1 Pt) EE 626 Microwave Technique (1pt)
Total Credit points	60	
Credit Points given for Advanced Diploma in Electrical Engineering (Year 1+2)	60	
Total credit points	120	

The renewable energy subjects can be substituted for some subjects

Renewable Energy Subjects

View http://www.highlightcomputer.com/BEElectricalNew.pdf for the Professional Diploma in Engineering Combined with Renewable Energy Subjects

View http://www.highlightcomputer.com/re.pdf for detailed contents

Professional Diploma in Electrical Engineering with Renewable Energy

Common Year 3

1. BAE 401 Advanced Engineering Mathematics (9 pt)

2. BAE 402 Calculus (3 pt)

3. BAE 403 Engineering Mechanics (1 pt)

4. BAE 404 Engineering Materials & Thermodynamics (3 pt)

5. RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt)

6. .RE003- Solar and Thermal Energy Systems (2 pt)

7. RE004- Energy Storage Systems (2 pt)

8. RE005- Renewable Energy Resource Analysis (2 pt)

9. RE006- Wind Energy Conversion Systems (2 pt)

10. RE010-Engineering Materials (2 pt)

11. RE012a-Electrical Engineering Part 1 (2pt)

12. RE016-Design& Management (BAE508) (2 pt)

B Applied Engg (Electrical)

YEAR 4 (Specialized)

1. BAE 601 Computer Programming

2. BAE 602 Computer Network

3. BAE 603 Software Engineering

4. RE012b-Electrical Engineering Part 2

5. RE002- Grid Connected Photovoltaic Power Systems

6. RE013-Electrical Machines

7. RE014-Electronics Control

8. RE015-Electrical Project/ Practice

9. BAE 501 Advanced Power Systems & Power Transmission Networks

10. BAE 506 Power System Stability & Protection

11. BAE 604 Telecommunication Engineering

12. RE007- Energy System Efficiency

Professional Diploma/ Bachelor of Engineering (Civil)

Year (3) Part 1 ADVANCED GENERAL CIVIL ENGINEERING DEGREE LEVEL (17 pt)

Subjects
BAE 401 Advanced Engineering Mathematics (9 pt)
BAE 402 Calculus (3 pt)
BAE 403 Engineering Mechanics (1 pt)
BAE 404 Engineering Materials & Thermodynamics (3 pt)
BAE 508 Industrial Engineering & Industrial Management (1 pt)
The renewable energy subjects can be substituted for some subjects **Renewable Energy Subjects** **View** http://www.highlightcomputer.com/BEElectricalNew.pdf for the Professional Diploma in Engineering Combined with Renewable Energy Subjects **View** http://www.highlightcomputer.com/re.pdf for detailed contents

Year (3) Part 2 ADVANCED GENERAL CIVIL ENGINEERING DEGREE LEVEL (18 Pt)

BAE421 Building Construction Engineering (4 pt)

BAE422 Estimating (2 pt)

BAE423 Fluid Mechanics (2 pt)

BAE424 Reinforced Concrete (2 pt)

BAE425 Timber Engineering (2 pt)

BAE521 Road & Bridge (2 pt)

BAE522 Rock Mechanics (2 pt)

BAE523 Soil Mechanics (2 pt)

BAE 523A Environmental Engineering (2 pt)

Year (4) Part 1 (17 pt)

BAE 601 Computer Programming (3 pt)
BAE 605 Engineering Management (5 pt)
BAE 606 Building Service Electrical & Mechanical Engineering (2 pt)
BAE 609 Design Project (3 pt)
Total Credit points in this group

Year (4) Part 2

(12 Pt)

BAE621 Structural Engineering (3 pt)

BAE623 Surveying& Traffic Engineering (2 pt)

BAE624 Water Supply , Sanitation & Finishing (2 pt)

BAE 608 Engineering Competency Demonstration Report Writing (2pt)

SELF STUDY

BAE622 Architecture (3 pt)

Total points for Year 3+4= 60 pt

Advanced Diploma in Civil Engineering= 60 pt

Total= 120 pt

Professional Diploma in Civil Engineering with Renewable Energy

Common Year 3

1. BAE 401 Advanced Engineering Mathematics (9 pt)

2. BAE 402 Calculus (3 pt)

3. BAE 403 Engineering Mechanics (1 pt)

4. BAE 404 Engineering Materials & Thermodynamics (3 pt)

5. RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt)

6. .RE003- Solar and Thermal Energy Systems (2 pt)

7. RE004- Energy Storage Systems (2 pt)

8. RE005- Renewable Energy Resource Analysis (2 pt)

9. RE006- Wind Energy Conversion Systems (2 pt)

10. RE010-Engineering Materials (2 pt)

11. RE012a-Electrical Engineering Part 1 (2pt)

12. RE016-Design& Management (BAE508) (2 pt)

Total points for Year 3-(32 Pt)

B Applied Engg (Civil)

YEAR 4 (Specialized)

Total points for Year 4-(24 Pt)

1 RE011a-Civil& Mechanical Engineering Part 1 (2 pt)

(Assessment- Study Report)

2 RE011b-Civil& Mechanical Engineering Part 2a (2 pt)

(Assessment- Study Report)

3 BAE 606 Building Service Electrical & Mechanical Engineering (2 pt)

4BAE421 Building Construction Engineering (2 pt)

5 BAE422 Estimating (2 pt)

6 BAE423 Fluid Mechanics (2 pt)

7 BAE424 Reinforced Concrete (2 pt)

8 BAE522 Rock Mechanics (2 pt)

9 BAE 523A Environmental Engineering (2 pt)

10BAE621 Structural Engineering (2 pt)

11BAE623 Surveying & Traffic Engineering (2 pt)

12BAE624 Water Supply , Sanitation & Finishing (2 pt)

Commmon Graduating Units (Year 5)

13 BAE 605 Engineering Management (4 pt)

14 BAE 608 Engineering Competency Demonstration Report

Total points for Year 3+4+ Final graduating subjects = 32+28+4= 60 pt

Professional Diploma/ Bachelor of Engineering (Mechanical)

Year (3)

GENERAL APPLIED ENGINEERING (MECHANICAL) DEGREE (29pt)

Subjects
BAE 401 Advanced Engineering Mathematics (9 pt)
BAE 402 Calculus (3 pt)
BAE 403 Engineering Mechanics (1 pt)
BAE 404 Engineering Materials & Thermodynamics (3 pt)
BAE 507 Electro-mechanical Energy Conversion (2 pt)
BAE 508 Industrial Engineering & Industrial Management (1 pt)
BAE511 Air-conditioning & Refrigeration Part 1 (2 pt)
BAE613 Mechanical Instrumentation Process (2 pt)
BAE614 Machine Design (2 pt)
BAE512 Building Service Water Supply System (2 pt)
BAE511 Air-conditioning & Refrigeration Part 2 (2 pt)
Renewable Energy Subjects **View** http://www.highlightcomputer.com/BEElectricalNew.pdf for the Professional Diploma in Engineering Combined with Renewable Energy Subjects **View** http://www.highlightcomputer.com/re.pdf for detailed contents

Year (4) Part 1 BE (Mechanical + General Related Subjects) (15pt)

BAE 601 Computer Programming(3 pt)
BAE 602 Computer Network (1 pt)
BAE 603 Software Engineering (3 pt)
BAE 605 Engineering Management 5 pt
BAE 606 Building Service Electrical & Mechanical Engineering (3 pt)

Year (4) Part 2

Bachelor of Engineering (Mechanical) Specialization (13 pt)

BAE311 Plant Engineering (2 pt)

BAE312 Design Engineering (2 pt)

BAE313 Environmental Control (2 pt)

BAE314 Mechanical Power Generation (2 pt)

BAE315 Materials Engineering (2 pt) Part 1 Part 2

BAE 608 Engineering Competency Demonstration Report Writing (3 pt)

Elective (3pt)

Subjects
BAE513 Production Technology
BAE611 Maintenance Engineering
BAE612 Engineering Metallurgy

Total point for Year 3+Year 4 Part ½+Elective = 60 pt

Advanced Diploma in Mechanical Engineering= 60 pt

Total credit points= 120 pt

The renewable energy subjects can be substituted for some subjects

Renewable Energy Subjects

View http://www.highlightcomputer.com/BEElectricalNew.pdf for the Professional Diploma in Engineering Combined with Renewable Energy Subjects

View http://www.highlightcomputer.com/re.pdf for detailed contents

Professional Diploma in Mechanical Engineering with Renewable Energy

Common Year 3

1. BAE 401 Advanced Engineering Mathematics (9 pt)

2. BAE 402 Calculus (3 pt)

3. BAE 403 Engineering Mechanics (1 pt)

4. BAE 404 Engineering Materials & Thermodynamics (3 pt)

5. RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt)

6. .RE003- Solar and Thermal Energy Systems (2 pt)

7. RE004- Energy Storage Systems (2 pt)

8. RE005- Renewable Energy Resource Analysis (2 pt)

9. RE006- Wind Energy Conversion Systems (2 pt)

10. RE010-Engineering Materials (2 pt)

11. RE012a-Electrical Engineering Part 1 (2pt)

12. RE016-Design& Management (BAE508) (2 pt)

Total points for Year 3-(32 Pt)

YEAR 4 (Specialized)

1. RE011a-Civil & Mechanical Engineering Part 1 (2 pt)

(Assessment- Study Report)

2. RE011b-Civil & Mechanical Engineering Part 2a (2 pt)

(Assessment- Study Report)

3. BAE 606 Building Service Electrical & Mechanical Engineering (2 pt)

4. BAE311 Plant Engineering (2 pt)

5. BAE314 Mechanical Power Generation (2 pt)

6. BAE315 Materials Engineering (2 pt) Part 1 Part 2 (2 pt)

7. BAE511 Air-conditioning & Refrigeration Part 1 (2 pt)

8. BAE512 Building Service Water Supply System (2 pt)

9. BAE613 Mechanical Instrumentation Process(2 pt)

10. BAE614 Machine Design (2 pt)

11. RE007- Energy System Efficiency(2 pt)

12. BAE 601 Computer Programming(2 pt)

Total points for Year 4-(24 Pt)

Common Graduating Units (Year 5)

13 BAE 605 Engineering Management (4 pt)

14 BAE 608 Engineering Competency Demonstration Report

Total points for Year 3+4+ Final graduating subjects = 32+28+4= 60 pt

Professional Diploma/ Bachelor of Engineering (Civil-Building Services)

STAGE (3) BASIC ELECTRICAL & ELECTRONICS ENGINEERING (18 Pt)

REFER DIPLOMA/ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING DETAILED CONTENTS

EE101 DC Circuit Problems

EE102 Basic Electrical Fitting& Wiring

EE103 Basic Electrical Drafting

EE104 Electrical Equipments Safety Protection

EE105 Electrical Installation Design

EE107 Electrical Equipments

EE106 Advanced Electrical Wiring

EE108 Electrical Fault Finding

EE109 Electrical Control Circuits

EE111 Electromagnetism & Basic Electrical Machines

EE112 Alternating Current Principle

EE113 Electrical Fundamental

EE115 Basic Analogue & Digital Electronics

EE116 Process Control System

EE117 Solar Electrical System

EE119 Electrical Risk Assessment

EE120 Electrical Contracting& Specifications

EE308 Sustainability

STAGE (4 A) ADVANCED MECHANICAL ENGINEERING STUDY (6Pt)

REFER DIPLOMA/ADVANCED DIPLOMA IN MECHANICAL ENGINEERING DETAILED CONTENTS

ME 102 Engineering Thermodynamics

ME 109 Engineering Drawing

ME 107 Heat Transfer

ME 201 Introduction to Fluid Mechanics

ME 204 Engineering Fluid Mechanics

ME 301 Fluid Dynamics

STAGE (4B)ADVANCED ELECTRICAL & ELECTRONICS ENGINEERING STUDY

(ADVANCED DIPLOMA) (4 pt)

REFER DIPLOMA/ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING DETAILED CONTENTS

EE201 Engineering Mathematics

EE204 Engineering Physics

EE302 Advanced Engineering Mathematics

EE307 Energy Efficient Building Design

STAGE (5)BACHELOR OF APPLIED ENGINEERING (BUILDING SERVICE) DEGREE (32 pt)

Subjects
BAE 401 Advanced Engineering Mathematics
BAE 402 Calculus
BAE 403 Engineering Mechanics
BAE 404 Engineering Materials & Thermodynamics
BAE 508 Industrial Engineering & Industrial Management

BAE 601 Computer Programming
BAE 605 Engineering Management
BAE 606 Building Service Electrical & Mechanical Engineering
BAE 609 Design Project

Professional Diploma/ Bachelor of Engineering (Mechanical-Mechatronics)

Advanced Diploma of Mechanical Engineering)

REFER DIPLOMA/ADVANCED DIPLOMA IN ELECTRICAL ENGINEERING DETAILED CONTENTS

REFER DIPLOMA/ADVANCED DIPLOMA IN MECHANICAL ENGINEERING DETAILED CONTENTS

(1) ME104 Principle of Machine

(2)EE624 Process Control

EE115 Basic Analogue& Digital Electronics

EE116 Process Control System

(3)ME 334 Airconditioning and Refrigeration

(4) ME202 Aerodynamics

(5) ME 302 Automation-and-Robotics

(6) ME 303 Computer Aided Design and Manufacturing

(7) ME 234 Wind Turbines

(8) ME 201 Introduction to Fluid Mechanics

(9) ME 204 Engineering Fluid Mechanics +

ME 301 Fluid Dynamics

(10) ME 206 Introduction to Turbo Machinery

(11)ME 205 Manufacturing Processes & Materials

(12) ME 207 Chemical Thermodynamics

(13)ME 208 Hydrocarbons

(14) ME 634 Pneumatics

(15) ME 203 Control

(16) ME 534 Numerical Control

(17) ME 434 Mechtronics-Robotics

(18)EE 617 Building Electrical and Mechanical System

(19)EE105 Electrical Installation Design

EE107 Electrical Equipments

EE105 Electrical Installation Design

EE107 Electrical Equipments

(20)EE106 Advanced Electrical Wiring

(21) EE116 Process Control

(22) EE117 Solar Electrical System

(23) EE119 Electrical Risk Assessment

EE120 Electrical Contracting

(24) ME 109 Engineering Drawing

EE301 Advanced Electrical Drafting

(25) EE121 Electronics Power Control Devices

(26) EE206 AC

(27) EE207 DC

(28)EE202 Electrical Circuits

(29)EE203 Three Phase Power Circuits

(30) ME 305 Corrosion Prevention

(31) ME 306 Theory-of-waves-in- materials

Degree Level

Subjects
BAE 401 Advanced Engineering Mathematics

BAE 402 Calculus
BAE 403 Engineering Mechanics
BAE 404 Engineering Materials & Thermodynamics
BAE 405 Advanced Circuit Analysis
BAE 406 Electro-mechanics
BAE 408 Analogue & Digital Electronics
BAE 502 Linear System
BAE 503 Control System
BAE 507 Electro-mechanical Energy Conversion
BAE 508 Industrial Engineering & Industrial Management
BAE 601 Computer Programming
BAE 602 Computer Network
BAE 603 Software Engineering
BAE 604 Telecommunication Engineering
BAE 605 Engineering Management
BAE 606 Building Service Electrical & Mechanical Engineering

Professional Diploma/Bachelor of Engineering (Electrical)

BAE 401 Advanced Engineering Mathematics (9 pt)

Subject Objective	This subject provides knowledge of mathematical methods needed for engineering problem solving
Learning outcome	The students develop both their thinking and problem solving skills. Topics covered are: vector, functions of a complex variable; algebra, differential equations, mathematical distribution, and applications of mathematics in engineering calculations.
Credit Point	9
Hours	216 Hrs
Assessment	Assignment/ Final Examination/Online MCQ Test

Contents

An Introduction to theory of complex variables
Complex numbers
Functions
Differentiability
Integration in the complex plane
Integral theorems
Power series
Introduction of rational functions of trigonometric functions.

Continuous distribution
Exponential distribution
Normal distribution
Gamma distribution
Convergence in distribution
F distribution

Discrete distribution
Binomial distribution
Poisson distribution

Elementary linear algebra
Algebra in F^n Example problems
Geometric meaning of vectors

Geometric meaning of vector addition
Distance between points in Rn Length of vector
Geometric meaning of scalar multiplication
Dot product
Cross product
System of equation geometry
System of equation – Algebric operation
Matrice arithmetic
Determinants –Basic technique & properties

Integration and differential equations
List of integrals
Introduction to background
Theorem of integration
Improper integrals
Improper integral problems
Integration of rational functions
Differential equations
First order ordinary differential equations
Homogenous equations
The general linear equations

Random variables
Simple introduction examples
Problems
Frequency and distribution functions in 1 dimension
Mathematical modelling preliminary
Introduction
Discrete time model
Maths 301 Introduction to Complex Variables
The residue Theorem
Fourier Transform
Integral theorem of complex analysis with applications
to the evaluation of real integral
Introduction
Integral theorems – The green Theorem
Cauchy's integral theorem
Cauchy's residue theorem

Maths 302 Elementary Linear Algebra
A formula for the inverse
Cramer's rule
Example 6.2.3 , 6.2.4 , 6.2.6, 6.2.7
Rank of a matrix

Example 8.2.9 , 8.2.10, 8.3.3 , 8.3.5, 8.3.6, 8.3.7, 8.3.8
Linear independence and bases
Linear transformation
Constructing the matrix of a linear transformation
Linear programming

Maths 401 Continuous Distribution

X^2 Distribution
F Distribution
F Distribution & " t " Distribution
Estimation of parameters

Maths 402 Discrete Distribution

Geometric distribution
Pascal distribution
Negative binomial distribution
Hyper geometric distribution

Maths 303 Essential Engineering Mathematics

Vectors and matrices
Functions and limits , Example problems
Calculation of one variable (Part 1) Differentiation,
Calculation of one variable (Part 1) Integration,
Calculus of many variables,
Ordinary differential equations,
Complex function theory

Maths 501 Introduction to probability

Theoretical background
Playing card
Binomial distribution
Lotto Example
Conditional probabilities –Baye's formula

Maths 501 Linear algebra and matrices

Linear transformation matrices
Definition 2.1.1 to 2.1.3
i j Entry of product Definition 2.1.8
Rank of matrices
Row operations

Maths 502 Introductory Finite Difference Method for PDE

Partial differential equations. Example problems

Taylor theorem
Iterative solution methods
Jacobi Iteration
Gauss Seidel Iteration
Successive Relaxation method

Maths 601 Random Variables

Theoretical results
Frequencies and distribution (1 dimension)
Function of random variables

BAE 402 Calculus (3 pt)

Subject Objective	This subject provides knowledge of calculus methods needed for engineering applications.
Learning outcome	The students develop both their thinking and problem solving skills. Topics covered are: vector calculus; functions of a complex variable; partial differential equations and boundary value problems; the concepts of quantum mechanics and Schrödinger's equation; and applications of mathematics in engineering calculations.
Credit Point	3
Hours	72
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Calculus 1 a .pdf
Differentiation, Example problems
Integration, Example problems
Simple differential equations, Example problems

Calculus 2 a .pdf
Integration of trigonometric polynomials
Complex decomposition of a fraction between two polynomials
Chain rule
Calculation of the directional derivatives
An overview of integration in the plane and in the space
Line integrals
Surface integral
Green's theorem in the plane

Calculus 2b 1.pdf
The range of functions in several variables
Line integral
Space integral
Line integral

Calculus 3b. pdf
Power series method in solution of problems, Example problems

Calculus 3C 1. pdf
Sequence in general

Calculus 4C 1. pdf
Sum function of Fourier series
Maths 303 Engineering Mathematics
Introduction and background
Integration of rational functions
Integration of trigonometric functions
Differential equations

Maths 403 Second Order Differential Equations
Power series solutions
Bessel equations and Bessel functions
Legendre polynomials
Differential equations

BAE 403 Engineering Mechanics (1 pt)

Subject Objective	This subject builds on and brings together the concepts introduced in the Mathematical and Physical Modelling subjects and in Introduction to Mechanical and Mechatronics Engineering.
Learning outcome	It is intended to provide students with a comprehensive overview of elementary mechanics, and lay the basis for further work in this area in later subjects. In particular, material discussed in this subject is taken further in Machine Dynamics and Mechanics of Solids subjects in subsequent stages.
Credit Point	1
Hours	24 Hr of Lecture+ 48 Hr of Tutorials
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Stress Example
Stress lectures
Strain All examples
Strain lessons
Mechanical properties of materials
Mechanical properties of materials
Axial members
Axial members
Torsion of shaft
Torsion of shaft
Symmetric bending of beams
Symmetric bending of beams
Deflection of symmetric beams
Deflection of symmetric beams
Stress transformation
Stress transformation
Strain transformation
Strain transformation
Design and failure
Design and failure
Stability of columns
Stability of columns
Newton motion

One dimensional motion

Simple harmonic motion

Damped oscillation

$X(t) = Ar\, e^{-rt/l} \cos(wt - \delta_r)$

Rotating reference frame equations
Modern Mechanics Part 1
Modern Mechanics Part 2
Modern Mechanics Part 3
Modern Mechanics Part 4
Modern Mechanics Part A
Modern Mechanics Part B
Modern Mechanics Part C

ME 301 Applied Mathematics
Kinematics
Projectiles
Forces
Resistance forces
Resolving forces
Rigid bodies
Centre of gravity
Momentum
Energy
Circular motion
Gravitation and planetary motion
The language of vectors

BAE 404 Engineering Materials & Thermodynamics (3 pt)

Subject Objective	Thermodynamics The objectives of this subject are to develop a fundamental understanding of applied thermodynamics in an engineering perspective, Strength of materials Strength of materials This subject draws on, and brings together, the knowledge and skills developed in earlier subjects such as Fundamentals of Mechanical Engineering, Chemistry and Materials Science, and Mechanics of Solids.
Learning outcome	Thermodynamics Use thermodynamics effectively in the practice of engineering, lay the groundwork for subsequent studies in the fields related to energy systems and increase an awareness and emphasis on energy resources and environmental issues. Strength of Materials It also prepares students for the more dedicated design subjects to come and exposes them to practical aspects of mechanical engineering design. The objectives are that students should be able to: understand, describe and use the methodology of modelling material properties and behaviour; understand and describe the fundamental differences in the behaviour of different types of materials; understand and describe how and why things fail; realise the importance of material selection in engineering design; predict, or design to avoid, failure given the material, environment and loading conditions; and use analytical skills in stress analysis and knowledge of material properties in mechanical design..
Credit Point	3
Hours	72 Hrs
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Heat Transfer. pdf

(1) Heat transfer mode Example problems
(2) Conduction Example problems
(3) Convection Example problems
(4) Radiation Example problems
(5) Heat Exchanger Example problems

Theory of waves in materials.pdf

Materials-Preliminary
Materials- Basic mechanical properties
Basic wave phenomena
Harmonic waves
Elastic volume and shear waves
Rayleigh Elastic waves

Engineering Thermodynamics
General definition
Thermodynamics-Working fluids
Laws of Thermodynamics
Worked Example 3.1 to 3.25

ME434 Wind Turbines
Wind Energy
Theory of wind energy
Wind turbine types and components
Wind energy measurement, Wheel encoder Worked

ME634 Pnuematics
Principle of pneumatics
Linear actuators
Flow control
Pnuematics sensors
Pnuematics symbols

BAE 405 Advanced Circuit Analysis (3 pt)

Subject Objective	In this subject students are assumed to have knowledge of basic devices such as ideal and real voltage and current sources and loads; resistors; capacitors, inductors and coupled coils; diodes and operational amplifiers.
Learning outcome	To have basic circuit analysis skills such as Kirchhoff's current and voltage laws, Thevenin's and Norton's theorems, mesh and nodal analysis, symmetry, circuit transformation and superposition. Using this understanding as a starting point, the subject introduces the basic theoretical models that underpin signals and system analysis
Credit Point	3
Hours	72
Assessment	Assignment/ Test/ Online MCQ Test/ Online Simulated Practical

Contents

DC Circuit Analysis
Circuit Theory
Modulators
Analog, digital signals , electric current, power summary
Circuit analysis, electric potential, electric power, sign convection, electric source, Kirchoffs' law
Circult elements, characteristics KCL, KVL
Resistor (Series, parallel, wheatstone bridge, Nodal analysis
Nodal analysis, mesh analysis
Superposition theorem, Thevenin's theorem, Norton theorem, Maximum power transfer theorem,
Operational amplifier
Inverting amplifier circuit, Summing amplifier, Differential amplifier
Capacitor, Op-amp integrator, stored energy
Mutual inductance, time constant, transient
Transient response of 1 st order circuit, RL transient analysis, sequential switching
RC/RL Circuit , Propogation, Delay, DRAM
Semi conductor
PN Junction diode
Light emitting diode
MOSFET
Digital signal
CMOS Digital circuit
Combinational logic circuits
Flip flops
Propagation delay in timing diagram
Integrated circuit fabrication
Device isolation methods
Interconnected resistance and capacitance

Transistor scaling
Integrated circuit design for application in communications
Small signal amplifiers
Network noise intermodulation distortion
CAD for noise analysis
Snsors & Detectors
Low noise design methodology
Oscillators
Modulators and demodulators
Concepts in Electrical Circuit
Circuit theorem
Sinusoids & phasors
Frequency response

EE303 Engineering Circuit Analysis

Basic circuits

Basic Nodal and Mesh analysis

Linear and Superposition/ Source Transformation

RL/ RC Circuits

RLC Circuits

Sinusoidal steady state analysis

AC Power Circuit Analysis

Polyphase Circuits

Magnetically coupled circuits

Complex Frequency / Laplace Transform

Laplace Transform

Circuit analysis in “ S “ domain

Pole/ Zero constellation

Frequency Response

Two ports network

Fourier Circuit Analysis

Use of symmetry theory

EE404 Electrical Measurement (1 pt)
Measurement of inductance and capacitance
Measurement of resistance
Magnetic measurement
High voltage measurement and tesating
Location of cable fault
Measurement of power
Measurement of energy

BAE 406 Electro-mechanics (2 pt)

Subject Objective	The objectives of this subject are to consolidate fundamental knowledge of electric and magnetic fields; electric and magnetic circuits; how electric, magnetic and electromagnetic energy are interchanged;
Learning outcome	To model an electromechanical automation system using DC and AC motors and simulate its performance in open-loop and closed-loop control. Students also acquire skills in working with machines and equipment at normal mains supply voltage, in power instrumentation and control, PLCs and in experimental design and recording. Technical and theoretical content is expected to be acquired by students to the levels of 'know' (essential), 'familiar' (can solve problems if required) and 'aware' (have read/seen). Laboratory skills, ranging from electrical safety, measurements, design validation and experimental verification are an important focus of this subject.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test/ Online simulated Practical

Contents

Electro-mechanic -1.0.1 Scope of application

1.1 Electro-magnetic theory

1.1.1a Magnetic field system, Table 1.1

1.1.1.b Electric field system Table 1.2
Lumped electro-mechanical elements
Lumped parameter-electro-mechanic
Rotating machines
Lumped parameter-electro mechanical dynamics

EE 502 Electrical Machines

DC Generator, Example problems
DC Motors, Example problems
Efficiency & heating of electrical machines, Example problems
Three phase transformer, Example problems
Three phase induction motors, Example problems
Synchronous generators, Example problems
Synchronous motors, Example problems

Basic of industrial motor control, Example problems

ME 301 Machine Principle

Rotating machines
Machinery mounting
Balancing
Bearing
Power transmission

BAE 407 Advanced Electro-magnetics Field & Materials (1 pt)

Subject Objective	The objectives of this subject are to consolidate fundamental knowledge of electric and magnetic fields; electric and magnetic materials
Learning outcome	To understand how electric, magnetic and electromagnetic energy are interchanged.
Credit Point	1
Hours	24 + Tutorial 2 hr/ week
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Electric field
Electrostatic potential
Dipole and quadrature pole movements
Batteries, resistors, ohm laws
Capacitors
Magnetic effect of an electric current
Force on current in a magnetic field
Electro-dynamics of moving bodies
Magnetic potential
Electro-magnetic Induction
Dimensions
Properties of magnetic materials
Alternating current
Laplace transform
Maxwell Equation
CGS Electricity & Magnetism
Magnetic dipole movement
Outlines
Electric field
Electrostatic Energy
Laplace's equation (1)
Laplace's equation (2)
Remarks on units
Green's functions
Multipole expansion
Electro-static in matter
Boundary condition
Magneto statics (1)
Magneto statics (2)
Macroscopic magneto statics
Maxwell's equation
DISC movement
Electro-magnetic plane waves
Reflection & refraction

Casual relation between D & E
Wave guides and load cavities
Electromagnetic radiation and scattering (1)
Electromagnetic radiation and scattering (2)
Scattering by small di-electric sphere
Electro-magnetism
Electro magnetic fields and moving charges
Multipole expansion
Magnetic constants and materials
Ampere law
Brief history of electro magnetism
Gauss's law
Numerical solutions to Laplace's equation
Small current loop
Curvilinear co-ordinate system
Problems
Dielectric tensors and constants
Analytic solution to Laplace equation
Magnetostatic boundary condition
Electrostatic boundary condition
Electromagnetic field
The gradient vector
Maxwell's equation

Electro-magnetic wave propagation
BAE 407 Advanced Electro-magnetic Field & Materials
Electro dynamics
Introduction to electro statics
Boundary value problems in electro statics (1)
Boundary value problems in electro statics (2)
Multi-poles Macroscopic media –Dielectrics
Static and stationary magnetic fields
Maxwell's equations
Plane wave and wave propogation
Wave guides and cavities
Radiation
The special theory of relativity
Particles and field dynamics
Charged particle collisions-Energy loss, Scattering
Radiation by moving charges

BAE 407 Advanced Electro-magnetic Field& Materials

EMFT book.pdf
Summary of electro statics
Potential
Electro-magnetics waves
Classical optics
Conservation Law

Conservation Law
Conservation Law
Generic wave
Electromagnetic waves in vacuum
Electromagnetic waves in matter
Electromagnetic waves in conductor
Electromagnetic waves propagation
Electromagnetic waves field
Wave guides
Electromagnetic waves radiation
Electro-dynamics
Frequency

EE407 Electro-magnetism

Di-electric materials and capacitance
Transmission Lines
Maxwell's equations and electro-magnetic waves

Electrostatics

Di-electric

Transmission Line

Maxwell Equation

BAE 408 Analogue & Digital Electronics (5 pt)

Subject Objective	Analogue The main objective of this subject is to familiarise students with basic electronic circuits, mainly with op-amps as active elements, and their applications. Digital The objectives of this subject are to enable students to master the fundamentals of digital and programmable electronic circuits and their engineering applications; master the hardware architecture of a typical small computer system; and understand the principles of low-level programming and gain an ability to write simple assembly code.
Learning outcome	Analogue By the end of the subject, students should have acquired reasonable proficiency in the analysis of basic electronic circuits and be able to build and test circuits in the laboratory. Particular emphasis is placed on the practical, hands-on aspect of electronics to provide a solid foundation of working knowledge for basic analog electronic circuits using op-amps. Laboratory work is a significant proportion of in-class delivery so as to make students proficient in circuit construction, testing, troubleshooting and to give them a sound knowledge of the use of test instruments. Another objective is to show that practical electronic applications are relevant to other engineering and technical disciplines and may often be placed within a wider social or commercial context. Digital Students are introduced to the basics of concurrent and real-time application programming. Topics include digital sequential circuits; state diagram and its application in the design of digital circuits; basic hardware architectures of the digital computer in terms of its building blocks; how hardware integrates with software at the machine level; low-level language programming; internal architecture and design of a typical register-based central processing unit and a main memory subsystem, and their interdependence; concepts of computer system buses, as well as different types of input and output devices; interrupts; input and output; micro-controller theory; and hardware interfacing design techniques.
Credit Point	5
Hours	120
Assessment	Assignment/ Test/ Online MCQ Test/ Online Simulated Practicals

Contents

Semi conductor devices

Digital circuits

Power Electronics Converters

Introduction to Electronic Engineering

Power Electronics & Applied Electronics

Digital System

Digital Signal Processing

Digital Image Processing

Electronics Circuits

Power Electronics Control

Digital System

Number system basics
Introduction to logic gates
Combinational logic
Karnaugh map
Arithmetic circuit
Coders/ Multiplexers
Counters

Digital Signal Processing

Signal system representation
Fourier/ Z Transform
Discrete Fourier Transform
Principle of filter design
FIR filter design

Digital Image Processing

Introduction
Intensity transformation & spatial filtering
Filtering in frequency domain
Discrete Fourier Transform
Butterworth Low Pass Filter
Butterworth High Pass Filter
Image restoration / Noise analysis

Digital Image Processing

Introduction
Intensity transformation & spatial filtering
Filtering in frequency domain
Discrete Fourier Transform
Butterworth Low Pass Filter
Butterworth High Pass Filter
Image restoration / Noise analysis

BAE 501 Advanced Power Systems & Power Transmission Networks (3pt)

Subject Objective	The subject introduces the basic methods used in the analysis and design of electric power networks.
Learning outcome	Its purpose is to give students a working knowledge of modern power system theory and practice. Techniques introduced in earlier circuit analysis subjects are further developed and applied to power system problems.
Credit Point	3
Hours	72
Assessment	Assignment/ Test/ Online MCQ Test/Online simulated practicals

Contents

Principle of Power System

Source of energy
Steam power station
Hydro power station
Diesel power station
Nuclear power station
Gas turbine power station
Variable load on power station
Interconnected grid system
Economic of power generation
Importance of high load factor
Tariffs
PF improvement
Supply system
Mechanical design of OH line
Corona
Sag
Electrical design of OH line
Performance of transmission line
Line generalised constants
UG cable
Capacitance in 3 core cable
Distribution system
DC Distribution
DC System
AC Distribution
Voltage control
Introduction to switch gear
Circuit breaker
Fuse
Relays

Protection transformers
Substation

Advanced Power System –Power Transmission Network

Consequence of power quality
Power quality & applications
Power quality analysis
Power quality monitoring
Management, control and automation of power quality improvement

Electrical generation and distribution system and power quality disturbances

Integration of hybrid distribution units in power grid
Optimal location and control of multi hybrid model based wind shunt facts to enhance power quality
Power quality and voltage sags indices in electrical power systems.

Power Transmission Line

AASR Conductors
ARC Fault
Circuit breaker rating
Current transformer
Electrical bushing
Electrical fuse
Induction motor model
IP rating
Load factor
Load redundancy
Over current protection
Partial discharge
Per unit system
Phase conversion
Resonance
RL Switching
Sequence network
Short circuit calculation
Symmetrical component
Transformer impedance

Power Transmission Line 2

AC Power Transmission
Insulation Resistance test
Dry type transformer
Electrical software

Insulation resistance test

Electrical Power Generation System

Designing for high temperature and pressure
Turbine components
Burning of fuel
Facts about fuel
Burning gas and oil
Selecting fuel
Water treatment
Heat exchanger
Computer control
System economics

Power System

Transmission & distribution system
Control of power and frequency
Control of voltage and reactive power
Load flow
Faults
System stability
Over voltage and insulation requirement
Substations and protection

Electrical Power

Power line
Neutral earthing
Switch gear
Instrument
Protection
Power system
Generator response to system faults
Calculation of fault current
Symmetrical components
Commissioning electrical plant

Power System Technology

Power system fundamental
Modern power system
Power control devices
Operational control system
Power conversion
Specialised testing & measurement devices

Generation , Transmission and Distribution of Electric Power

Voltage transient and line surge
Transmission of electrical energy
Corona
UG Cable
Voltage drop in distribution
Regulation
Line and machine chart
Voltage regulation stability
Fault calculation in line

Electrical Power Distribution in Industry & Transmission (Electrical Distribution Engineering)

Planning & design
Electrical design
Mechanical design (Over head)
Mechanical design (Under ground)
Metering
Conductor inductance & capacitance

Power Transmission and Practical Power Distribution

Electric power system
Percentage and per unit quantities
Circuit constants
Assemblies of power system components
Power circuit stability

BAE 502 Linear System (1 pt)

Subject Objective	This subject presents the theoretical basis for system analysis and gives students skills in using the techniques to design components of linear control systems..
Learning outcome	To do the design and implementation of part of a control/communication system To apply their knowledge to a real-life problem. Topics include signal types and their representation in the time and frequency domains; modelling systems with differential or difference equations and transforms of the equations; signal operations and processing; the relationship between discrete and continuous quantities and the mathematical techniques applicable to each; the effects of feedback; time and frequency domain performance of systems; system stability; and control design techniques and simple communication systems. Through learning activities students also gain study skills, including academic literacy skills, and an appreciation of the different fields of practice of engineering and the interdisciplinary nature of engineering.
Credit Point	1
Hours	24
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Controllability of linear control system
Finite dimensional linear control system
Linear partial differential equations
Introduction to intelligent control system with high degrees of autonomy
Overview of field

Control system

System identification
Digital and analog
System metrics
System modelling
Classical control
Transform
Transfer functions
Sampled data system
System delays
Poles and zeros
Modern control
State space equation
Linear system solution

BAE 503 Control System (4 pt)

Subject Objective	The objective of this subject is to enable students to model with validation control systems and to analyse, design and implement both analog and digital controllers so that the controlled systems conform with given specifications
Learning outcome	Emphasis is placed on laboratory work, the theoretical content of the subject being only that required to produce successful designs. To work on reduced scale models of actual industrial processes. The equipment is based upon experience gained with authentic control applications and is suitably modified for student use. To follow the usual sequence adopted in industry, i start with the calibration of transducers and actuators leading on to dynamic response testing, physical modelling, model verification and finally to controller design, implementation and testing.
Credit Point	4
Hours	96
Assessment	Assignment/ Test/ Online MCQ Test/ Programmable Control Program software applications
	Topics include linear and nonlinear modelling of control systems using Newton's rules, analogous networks or Lagrangian techniques; linearisation and development of linear, time-invariant transfer functions; development of lead-lag compensators or PID controllers using classical control design techniques such as root locus, Bode gain and phase diagrams, Nyquist plots and Nichols chart; development of state-variable equations from differential equations; development of state-variable feedback controllers and state observers; open-loop pulse transfer functions and discrete-time state models; discretisation using backward difference, bilinear, step-invariance or pole-zero mapping; development of digital PID controllers, deadbeat controllers and discrete-time state-variable feedback controllers; describing functions and limit cycles for nonlinear control systems; and the development of linear controllers for nonlinear systems using describing function techniques.

Contents

Gain
Block diagram
Feedback control loop
Bode plot
Nichol chart
Stability
Stability
Routh Hurwitz Criterion, Root Locus

Nyquist Criterion
State Space Stability
Controllers & Compensators
Controllability & Observability
System Specifications
Controllers, Compensators
Z - Transform

Non Linear Control Applications

Application of input/ output linearization
Non linear control for 2 stages PF correction converter
Non linear observer based control allocation

Control Engineering MATLAB

Transfer functions and their responses
Frequency response/ Plotting
Closed loop control
Controller design

Feedback and Control System

Introduction to linearized dynamic model
Transfer function model of physical systems
Transient performance / S- Plane
Feedback system modelling / Performance
Dynamic compensation of feedback system

PID Control

Application of PID controllers in motor drive system

Applications of Non Linear Control

Introduction
Phase plane method

Process Control

Analog Signal Conditioning
Digital Signal Conditioning
Final Control
Discrete State Control
Controller Principle

Analog Controller
Digital Controller
Control Loop Characteristics

Numerical Control

Introduction to numerical control machinery
Numerical control system
Programming co-ordinates
Two axis programming
Three axis programming
Maths for numerical control programming

BAE 504 Power System Analysis (1 pt)

Subject Objective	The primary objective of this subject is the development of a working knowledge of power systems analysis and design.
Learning outcome	Emphasis is placed on the derivation of equivalent circuits, mathematical models of devices and the system, and on methods of analysis and measurement. Material covered includes electricity supply chain building blocks, system analysis, real/reactive power and load flow analysis, dynamic and transient stability.
Credit Point	1
Hours	24
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Overview
Real & Reactive power injected bus
Classification of buses
Classification of buses
Preparation of data for load flow
Load flow by Gauss Seidel method
Updating load bus voltage
Updating PV bus voltage
Convergence of the algorithm
Solution of a set of non linear equation by Newton Raphson method
Load flow by Newton Raphson method
Load flow algorithm
Formation of Jacobian matrix
Formation of Jacobian matrix
Solution of Newton Raphson load flow
Load flow results
Load flow results
Load flow programs in MATHLAB
Forming Y bus matrix
Gauss Seidel Load Flow
Solving non linear equation using Newton Raphson method
Newton Raphson load flow

Power System Analysis

Transformer
Transmission line model
Gauss Seidel Algorithm
Newton Raphson Iteration
DC Power Flow Algorithm
Modelling
Transient Stability

Power System Analysis

Power Apps Transient Stability validiation document for single pole open/ close simulation
(Power flow analysis + FAULT ANALYSIS + Power system dynamics and Stability)

Static Analysis
Introduction
Network model
Active & reactive power flow
Nodal formation of power flow problem
Basic power flow problem
Solution of power flow problems
Fault analysis
Power system dynamics and stability
Synchronous machine model
The swing equation
Power swing in simple system
Oscillation in multi machine system
Voltage stability
Control of reactive power voltage

BAE 505 Power System Optimization (1 pt)

Subject Objective	The primary objective of this subject is the development of a working knowledge of optimal power systems operation.
Learning outcome	The subject aims to provide students with a knowledge and understanding of elements of the supply chain and how they function in the National Electricity Market; demand-side management options including smart meters; load forecasting and optimal load scheduling for secure energy supply and use; protection schemes for transmission and distribution networks; communications in power systems, including communication media, architectures, automation, standards, protocols and security; and basic design, connection and standards of current and voltage instrument transformers for protection and metering applications.
Credit Point	1
Hours	24
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Introduction
Power Flow Analysis
Classic Economic Dispatch
Linear programming method
Mathematical model of economic dispatch
Linear programming model
Optimization of power system performance using facts devices
Optimization of dynamical system

Matrix Eigen Value Method

BAE 506 Power System Stability & Protection (2 pt)

Subject Objective	The primary objective of this subject is the development of a working knowledge of power systems operation and protection. The subject aims to provide students with a knowledge and
Learning outcome	To provide the understanding of elements of the supply chain and how they function in transmission and distribution networks; communications in power systems, basic design, connection and standards of current and voltage instrument transformers for protection and metering applications.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test/ Simulated Online Practical

Contents

Transient in RL circuit
Symmetrical fault
Transient in RL circuit
DC Source
AC Source
Faults in AC Circuit
Short circuit in unloaded synchronous generator
Symmetrical faults in power system
Calculation of fault current using Z bus matrix
Circuit breaker selection
Symmetrical components & representation of faulted network
Overview
Overview
Real & reactive power
Real & reactive power
Orthogonal Transformation
Sequence circuit for star load
Sequence circuit for delta load
Sequence circuit for synchronous generator
Sequence circuit for symmetrical transmission line
Sequence circuit for transformer
Star/ Star Connected Transformer
Delta/Delta Connected Transformer
Star/ Delta Connected Transformer
Sequence Network
Un- symmetrical Faults
Introduction
Single line to ground fault
Line to line fault
Two lines to ground fault
Fault current computation using sequence network

Transient Stability
Introduction
Power angle relationship
Swing equation
Equal area criterion
Equal area criterion
Multi machine stability
Oscillation in " S " Two areas System
Compensation of power transmission
Introduction
Ideal shunt compensator
Improving voltage profile
Improving power angle characteristics
Improving stability margin
Improving damping power oscillations
Ideal series compensator
Impact of series compensator for voltage profile
Improving power angle characteristics
Improving power angle characteristics
Alternate mode to voltage injection
Alternate mode to voltage injection
Comparison of two modes of operation
Power flow control and power swing damping

Power System Protection

Different types of relays and settings

- Technical feasibility of various options
- Cost of options
- Type of transmission AC/DC
- Number of circuits
- Conductor type
- Transmission loss
- Reactive power support requirements
- Reliability
- Quality of power supply
- Stability aspects of the interconnected system
- Operational planning
- Short circuit levels and breaker requirements
- over voltages and control
- Insulation coordination at substations
- Substation arrangements at the end of line, including switching arrangements.

- Insulation requirements.
- Protection, monitoring, control and automation requirements
- Study of harmonics where needed [as in case of HVDC or when a terminating station is close to sources of harmonics]
- Basic and Detailed engineering related to transmission towers, routes, substations

Philosophy of protective relaying
Fundamental of relaying
Current/ voltage/directional/ differential relay
Distance relaying
Pilot wire relay
Carrier current relay
Voltage transformer
Relay response
Generator protection
Transformer protection
Busbar protection
Line protection
Line protection with distance relay
Line protection with pilot relay

Power system stability

Power system stability Guidelines
Power system stability guidelines for determination and report
Direct stability analysis of electric power system using energy functions
Power system stability –New opportunity for control
Typical power quality and harmonic measurement plots
Robust power system stabilizer design using particle swarm optimisation techniques
Harmonic analysis

Power Quality

Power quality
Electrical protection for power system
Substation automation
Introduction to power quality
Harmonic model of transformer
Substation automation
Modelling analysis of synchronous machines
Life time reduction
Power system modelling under non sinusoidal condition
Impact of power quality on reliability
Role of filters in power system

BAE 507 Electro-mechanical Energy Conversion (2 pt)

Subject Objective	The objectives of this subject are to enable students to: acquire an understanding of the nature of power semiconductor devices and their control and use in switch-mode;
Learning outcome	To understand the arrangement and topology of the circuits in which switch-mode devices are used; appreciate the use of power electronic circuits in high-power applications such as motor drives; be aware of the electromagnetic interference problems associated with power electronic systems; use commercial software for the rigorous circuit analysis of real power electronic systems; analysis and design circuits to meet specific specifications; and fabricate basic power electronic circuits such as a chopper.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test/ Simulated online practical

Contents

Basic semiconductor physics
PN Junction semiconductor
Power switching devices
Electrical rating of switching devices
Cooling
Load/ switch communication
Driving semiconductor & thyristor
Protecting diode / Thyristor/ Transistors
Switching circuit energy recovery
Series , parallel devices operation protection
Naturally commutating converter
AC Voltage Regulator
DC choppers
Power inverters
Switched mode & resonant DC-DC power supplies
Capacitors
Soft magnetic materials
Resistors

Motor Control Electronics

AC Induction motor control
Motor control MCU
Networking for motor control system
DC motor control design
Motor control electronic devices
Power semi conductors

Mechatronics/ Robotics

Robotics Application
Robotic Gears
Interfacing
Robotic Sensors
Communication

BAE 508 Industrial Engineering & Industrial Management (1 pt)

Subject Objective	To work effectively in industry as middle level managers
Learning outcome	To acquire the introductory skills in business information system, engineering management, supervision, quality control, manufacturing management , human resources management, budgeting, operation and managerial decision making.
Credit Point	1
Hours	24
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Effective management decision making

Introduction

Business Information System

Defining Information System

Acquiring Information System

Developing Information System

Managing Human Resources in 21 Century

Human resources Management

Management Basics

The Manager's Job

Planning in Organization

Operation Management

Operation Strategy

Work System Design

Project Management

Inventory Management

Quality Management

Leadership in Quality Management

Strategic Quality Management

Implementing Quality Management

Strategic Financial Management

Finance An Overview

Capital Budgeting

Equity Valuation & Cost of Capital

Strategic Management

The Basic of Strategy

The Levels of formulation of strategy

External analysis

Internal analysis

Strategy implementation

Understanding organization part 1

Organization structure

Organization culture

Managing behaviour

Effective leadership

Part (2) Competency Units

Mgt 501 Basic Management & Communication Skills (1 pt)

Textbook – Mgt 501 Management Basics

Chapter (1) Management basics

Chapter (3) Planning

Chapter (5) Organizing

Chapter (6) Organizing the organization

Chapter (7) Leading

Textbook—Mgt501 Management Briefs

Chapter (2) Leadership

Chapter (5) Motivation

BAE 601 Computer Programming (3 pt)

Subject Objective	This subject provides basic skills in Java/ C/C++/C# programming and software design,
Learning outcome	To acquire the skill practice in object-oriented (OO) programming concepts, data flow, control flow, arrays, and the basics of sorting and searching algorithms. To illustrate a design process using a set of design notations and design rules, and shows how to develop a correct, readable and reusable solution from a problem specification.
Credit Point	3
Hours	72
Assessment	Assignment/ Test/ Online MCQ Test/ Programming software application

Contents

Part (1) Overview Knowledge of the subject

Select any of the following textbooks

- C Programming
- C++ Programming
- C# Programming
- Object Oriented Programming
- C Programming in Linux

IT 401 Object Oriented Programming (1 pt)

IT 402 Structured Programming (1 pt)

IT 403 Visual Basic Programming (1 pt)

BAE 602 Computer Network (1 pt)

Subject Objective	The objectives of this subject are to introduce students to the basic concepts and terminology used in telecommunication networks and a system-level view of network operation.
Learning outcome	To understand the evolution of telecommunication networks; services and applications (voice, video, data, location-based services, multimedia, gaming, etc.); network protocols (TCP/IP, OSI); transmission and switching basics; transmission media; access networks; PSTN; internet (dial up, broadband, ISP); network security; mobile networks (2G, 2.5G, 3G, 4G); data networks (LANs, wireless LANs, WANs, SANs, PANs, enterprise networks); VoIP networks; and convergence in telecommunication networks, next generation networks (NGN) and digital identity in networks.
Credit Point	1
Hours	24
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Computer Network
Peer to peer networking
Client server networking
Network hardware
Network cable
Hub
Wired network
Wireless network card
Firewall
Wiring the network
Wiring the network
Running the network program
Viewing network connection
Network set up on additional computers
Viewing network connection

Introduction
Network model
Data and signals
Data and signals
Data rate limit
Performance
Digital transmission
Digital transmission
Analog transmission
Analog transmission

- Bandwidth utilization/ Multiplexing/ Spreading
- Bandwidth utilization/ Multiplexing/ Spreading
- Transmission media
- Error detection & correction
- Error detection and correction

Defining needs
Area covered
Organization information requirement
System VS Procedure
Types of systems
What are the systems?
Infrasturcture
Support system
Data mart
Organizational structure
Planning for system development
System design
Security of information system
Risk management

BAE 603 Software Engineering (2 pt)

Subject Objective	This subject introduces students to the fundamentals of contemporary software engineering.
Learning outcome	To overview of the agile and non-agile software engineering principles, methods, tools and techniques is presented. Current trends and challenges in the practice of software engineering are explored. To apply contemporary agile requirements analysis, planning, architecture, design, implementation and testing practices to software engineering project work in small teams.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test/ Software Design Practice

Contents

Introduction
Software process
Feasibility study
Project management
Documentation, Requirement analysis
Requirement specification
Business/ Legal aspect
Source code management
Formal specification
Object oriented design 1
Object oriented design 2
Object oriented design 3
System Architecture 1
System Architecture 2
System Architecture 3
Design for utility
Performance of computer system
Coding standard/ Tools for designing 1
Dependable system 1 Reliability
Dependable system 2 Validation
Law aspect
Risks in software engineering
Software engineering as engineering

Nano Technology

What is Nano technology?
Motivation for Nano technology
Scaling laws
Nano technology

BAE 604 Telecommunication Engineering (2 pt)

Subject Objective	On completion of this subject, students have learned the skills to systematically analyse network operations and performance, and also have the ability to appreciate approaches in designing communication and computer networks.
Learning outcome	To understand the communication architecture. To provide the necessary background in understanding operations of TCP/IP, the mostly widely implemented protocol stack in computer networks, on a layer-by-layer basis.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Communication fundamental
Information & bandwidth
Amplitude modulation transmission
Amplitude modulation reception
Single side banded communication
Frequency modulation –Transmission
Frequency modulation –Reception
Communication Techniques
Communication Receivers
Pulse Modulation
Code transmission
ISDN
Transmission lines
Wave propagation
Antenna
Fibre optics

Data Communication

Overview of data communication
Data terminals
Massage and transmission channels
Asynchronous modems and interfaces
Synchronous modem and digital transmission
Protocol and error control

Electronics Telecommunication

RF Transmission
Transmission Lines & Antennas, Video signals

BAE 605 Engineering Management (5 pt)

Subject Objective	To work effectively in industry as middle level managers
Learning outcome	To acquire the advanced skills in business information system, engineering management, supervision, quality control, manufacturing management , human resources management, budgeting, operation and managerial decision making.
Credit Point	5
Hours	120
Assessment	Assignment/ Test/ Online MCQ Test+ Submission of engineering design project (Minor thesis)

Part (1) Overview Knowledge of the subject

Completion of BAE 508 Overview also completes BAE 605 Overview

Part (2) Competency Units

Mgt 502 Operation Management (1 pt)

Mgt 503 Production & Operation Management (1 pt)

Mgt 504 Project Management (1 pt)

Mgt 505 Quality Management and Manufacturing Engineering (1 pt)

Mgt 506 Strategic Financial Management (1 pt)

Mgt 502 Operation Management (1 pt)

Product design and process selection

Total quality management

JIT & Lean System

Capacity planning

Mgt 503 Production & Operation Management (1 pt)

Planning production

Managing inventories-Material requirement planning

Manufacturing

Dealing with technology and design

Operation strategy

Mgt 504 Project Management (1 pt)

Project management

Project organization

Project plan

Progress& performance measurement

Risk management

Documentation/ Audit/ Closure

Mgt 505 Quality Management and Manufacturing Engineering (1 pt)

Background

Why quality management

Standards and models

Progress& performance measurement

Strategic quality management

Documentation/ Audit/ Closure

Mgt 506 Strategic Financial Management (1 pt)

Capital budgeting

Treatment of uncertainty

Debt valuation and cost of capital

Capital gathering & cost of capital

BAE 606 Building Service Electrical & Mechanical Engineering (2 pt)

Subject Objective	To work effectively in M & E Engineer in building construction & building service industry
Learning outcome	To understand the methods of building construction To understand aircondition & refrigeration systems. To design the water supply system for building To design fire protection, building automation systems
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test/ Building service design project.

Contents

Building Construction 1

Making building
Foundations
Wood
Interior finish for wood light frame construction
Wall types
Concrete construction

Air-conditioning & Refrigeration

Controlling the temperature of mass
Electric heat
Humidification
Air-conditioning –Cooling / Comfort
Air-distribution & Balance
Reference Tables

Sanitation & Water Supply

Design of onsite sanitation system
Hydraulic design of sewers

Building Electrical & Mechanical System Part 1

Climate comfort and design strategies
Thermal control

Designing for heating cooling
Large building HVAC system
Water and basic design
Water supply
Water and waste
Fire protection
Fire protection
Illumination
Lighting design
Signal system

Airconditioning and Refrigeration

Theory of heat
Solar heat
Humidification
Air-conditioning-Cooling
Air-distribution & Balance
Air-conditioning Calculation worksheets

BAE 607 Radio Wave Propagation & Microwave Techniques (2 pt)

Subject Objective	This subject presents the theoretical basis for system analysis and gives students skills in using the techniques to design components of communication systems.
Learning outcome	io understand radio & microwave signal types and their representation in the time and frequency domains; modelling systems with differential or difference equations and transforms of the equations; design of antenna, propagation principle
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Radio Wave Propagation

Introduction to radio wave propagation
Propagation features/ Overviews
Electromagnetic waves, Prpagation through atmosphere
Antenna
Radio wave propagation fundamentals
Antennas and propagation
Mobile radio propagation
Propagation
Wave propagation
Radio navigation
Wireless communication

Microwave Technique

Microwave antenna and radio wave propagation
Distributed element circuit analysis techniques
Matching networks
Couplers, combiners, dividers
Mixers
Gain and stability
Noise
Electromagnetism and RF Propagation
Antenna Fundamental
Communication system
RF Safety

Rain attenuation of microwave and milli-meter wave signals

Design of microwave filters (Vol 1)

Mechanically & magnetically tunable microwave filters
Design of microwave filters (Vol 1)
General applications of filter structure in microwave engineering
Properties of some common microwave filter elements

BAE 608 Professional Engineer Competency Demonstration Report

- The students will have to write Engineering Competency Demonstration Report based on their academic study and work experiences gained after completion of academic study.
- Competency Demonstration Report is voluntarily to be submitted. It prepares the students to have the necessary skills to gain the membership of Engineers Australia later.
- The outlines of Competency Demonstration Report will be provided to the students after completion of the last course work subject.

Bachelor of Engineering (Civil)

Year (3) Part 1 ADVANCED GENERAL CIVIL ENGINEERING DEGREE LEVEL

Subjects
BAE 401 Advanced Engineering Mathematics
BAE 402 Calculus
BAE 403 Engineering Mechanics
BAE 404 Engineering Materials & Thermodynamics
BAE 508 Industrial Engineering & Industrial Management
Renewable Energy Subjects **View** http://www.highlightcomputer.com/BEElectricalNew.pdf for the Professional Diploma in Engineering Combined with Renewable Energy Subjects **View** http://www.highlightcomputer.com/re.pdf for detailed contents
BAE 401 Advanced Engineering Mathematics--- **Please see under Bachelor of Engineering (Electrical) Program**
BAE 402 Calculus **Please see under Bachelor of Engineering (Electrical) Program**
BAE 403 Engineering Mechanics **Please see under Bachelor of Engineering (Electrical) Program**
BAE 404 Engineering Materials & Thermodynamics **Please see under Bachelor of Engineering (Electrical) Program**
BAE 508 Industrial Engineering & Industrial Management **Please see under Bachelor of Engineering (Electrical) Program**

BAE421 Building Construction Engineering

Subject Objective	To understand the methods of design, construct, maintain, inspect and manage private and public work projects To understand the effects of environments on the properties and performance of construction materials
Learning outcome	To have a basic understanding of construction materials, in relation to their production, properties, testing and application. The main objectives of this subject are to help students acquire fundamental knowledge of the production, physical and engineering properties of construction materials; To understand the construction techniques, methods, schedules & application of construction materials in building construction. To be familiarize with rules, regulations and industrial standards related to building construction.
Credit Point	4
Hours	96
Assessment	Assignment/ Test/ Online MCQ Test/ Building Design Practice Online simulation

Contents

- Basic skills
- Isomatric drawing
- Retaining walls & Post footings
- Stair
- Doors & Windows
- Trusses
- Buildings
- Collar truss
- Howe truss

- Timber
- Steel
- Brick masonry
- Timber
- Brick-nogging
- Steel
- Reinforced concrete
- Floor plans
- Foundation plan
- Cross section
- Front elevation
- Back elevation
- Left side elevation
- Right elevation
- Culverts
- Bridges
- Buildings
- Pipe culvert
- Box culvert
- Slab culvert
- Deck and girder bridge
- Half top plan of culvert
- Half bottom plan of culvert
- Cross section of culvert
- Longitudinal section of culvert

- Elevation of culvert
- Mix Design
- Permissible water cement ratio

BAE422 Estimating (2 pt)

Subject Objective	To understand the methods of costing, material requirement planning in building construction
Learning outcome	To perform the costing, estimating, rate analysis, to interpret the construction drawings & determine the bills and quantities of construction materials.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

- Preliminary estimates
- Detailed estimating
    - Culverts
    - Bridges
    - Buildings
    - Roads
- Analysis of rates
- Detailed Estimating
- Buildings
- Up to plinth level
- Above plinth level
- Culverts
- Bridges
- Roads
- Earthworks

- Analysis of Rates
- Total workdone
- Material and labour requirements
- Estimated cost
- Actual PAE or CCE or RFT
- Complete items
- Quantity
- Measurements
- Content calculation
- Rates
- Buildings
- Above plinth level
- Culverts
- Analysis of rates

BAE423 Fluid Mechanics (2 pt)

Subject Objective	This subject aims to enable students to: understand key concepts and fundamental principles, together with the assumptions made in their development, pertaining to fluid behaviour, both in static and flowing conditions; deal effectively with practical engineering situations, including the analysis and design of engineering systems and devices involving fluids and flow; appreciate possible applications and links to other disciplines; and engage in further specialised study or research..
Learning outcome	The subject also aims to enhance interests in fluid phenomena and applications. Topics include: fluid properties and statics; conservation laws of mass, momentum and energy; flow in pipes; external flow (lift and drag); boundary layers; flow measurements; and environmental fluid mechanics
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

- *Methods of Application of water*
- *Water Logging, Drainage, land reclamation and irrigation management*
- *Theoretical Concepts of Boundary Layer, Surface Roughness, Velocity Distribution*
- *Gradually varied flow*
- **Scale Model in Hydraulic Engineering**
- Surface irrigation methods
- Subsurface irrigation methods
- Sprinkler irrigation
- Drip or trickle irrigation
- Flooding Methods
- *Wild or uncontrolled Flooding*
- *Controlled Flooding*
- *Flooding from field channels*
- *Border strip methods*

- *Check method*
- *Basin method*
- *Zig-zag method*
- Furrow Method
- Contour Farming

BAE424 Reinforced Concrete (2 pt)

Subject Objective	To have knowledge of structural design, including the behaviour and design of reinforced concrete (RC) and, to a lesser extent, of prestressed concrete (PSC) elements as parts of overall structures.
Learning outcome	This subject builds on the knowledge of statics, solid mechanics and structural analysis of indeterminate structures that the students have learnt in the previous structural strand subjects. Students learn about the behaviour and design of RC beams, slabs and columns and PSC beams, for both serviceability and strength. Initially, the students are introduced to the Limit State Design philosophy of Australian Standards for structural design and to the material properties of concrete, reinforcement and prestressing steel used for design. RC topics include uncracked section analysis of beams, cracked section analysis of beams (linear-elastic, Desayi-Krishnan, ultimate) for strength and design for strength to AS3600, serviceability design of beams, ductility of singly and doubly reinforced sections, design for shear, T-beams, approximate analysis and design of one-way, two-way slabs and flat slabs/plates, columns (interaction diagrams and slenderness effects), pad footings, cantilever retaining walls and reinforcement detailing. PSC beam topics include history, uncracked section analysis, equivalent loads, load-balancing, cracked section analysis (linear-elastic and ultimate), design for bending, shear, transfer, anchorage.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

- Design of Concrete Structures
- FUNDAMENTALS OF FLEXURAL BOND
- Source of bond strength
- Bond Stress Based on Simple Cracked Section Analysis
- Actual Distribution of Flexural Bond Stress
- Development Length
- Factors influencing Development Length
- ACI CODE PROVISION FOR DEVELOPMENT OF TENSION REINFORCEMENT
- ANCHORAGE OF TENSION BARS BY HOOKS
- Development Length and Modification Factors for Hooked Bars

- ANCHORAGE REQUIREMENTS FOR WEB REINFORCEMENT
- Special Requirements near the Point of Zero Moment
- Structural Integrity Provisions

BAE425+525 Timber Engineering (2 pt)

Subject Objective	To have knowledge of structural design, including the behaviour and design of timber structures in construction engineering.
Learning outcome	This subject builds on the knowledge of statics, solid mechanics and structural analysis of indeterminate structures that the students have learnt in the previous structural strand subjects. Students learn about the behaviour and design of timber beams, slabs and columns for both serviceability and strength. Initially, the students are introduced to the Limit State Design philosophy of Australian Standards for structural design and to the material properties of timber and seasoning the timbers used for design.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

- Bending Stress and Deflection of Wood Joists
- Shearing Stress Caused by Stationary Concentrated Load
- Shearing Stress Caused by Moving Concentrated Load
- Strength of Deep Wooden Beams
- Design of a Wood-Plywood Beam
- Determining the Capacity of a Solid Column
- Design of a Solid Wooden Column
- Investigation of a Spaced Column
- Compression on an Oblique Plane
- Design of a Notched Joint
- Allowable Lateral Load on Nails
- Capacity of Lag Screws

- Design of a Bolted splice

- Investigation of a Timber-Connector Joint

BAE521 Road & Bridge (2 pt)

Subject Objective	To have knowledge of structural design, including the behaviour and design of road & bridge structures in construction engineering.
Learning outcome	This subject builds on the knowledge of statics, solid mechanics and structural analysis of indeterminate structures that the students have learnt in the previous structural strand subjects. Students learn about the behaviour and design of road, bridge, slabs and columns in bridge for both serviceability and strength. Initially, the students are introduced to the Limit State Design philosophy of Australian Standards for structural d.esign and to the material properties of road & bridge construction
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

- Hydraulic Design of Bridge
- The establishment of afflux levels
- Back water levels
- Long Contraction
- Yarnell's empirical equation
- The limiting values of σ
- Skewed bridges
- Discharge computation
- Scour depth under the bridge
- Scour around bridge piers
- Scour protection works around bridge piers
- Road bridge

BAE522 Rock Mechanics (2 pt)

+

BAE523 Soil Mechanics (2 pt)

Subject Objective	The aim of this subject is to develop students' technical competence in the analysis of soil masses and of structures associated with the soil. The analysis of footings, retaining walls and soil slopes are examples.
Learning outcome	By completing this subject, students should be able to understand the concept of failure in soil and apply it to the analysis of soil masses; critically appraise a problem in order to decide which particular analysis should be used; identify the limitations of their analyses and carry out appropriate solution validation; be responsible for the analysis component of a design team; study the relevant literature and learn to apply new or more complex methods of analysis; and carry out fieldwork in association with subsurface investigations. Topics include introduction to geotechnical design – criteria, codes, engineering judgment; site investigation – planning, fieldwork, techniques; shallow foundations – types, bearing capacity theories, retaining structures; earth pressure theories – Rankine and Coulomb, analysis of gravity walls, cantilever walls, braced excavations; deep foundations – types, load-carrying capacity, settlement, group behaviour, lateral loading; slope stability – failure mechanisms, infinite slopes, rotational failure, remedial measures; and soil improvement – compaction, soil stabilisation, dewatering, preloading.
Credit Point	4
Hours	96
Assessment	Assignment/ Test/ Online MCQ Test/ Design Project

Contents

- Soil
- Soil Mechanics
- Geotechnical Engineering

- Subsoil Exploration
- Testing (In-situ Tests & Laboratory Tests)
- SPT, CPT, Vane Shear Test
- Moisture content
- Index Properties Tests (LL, PL, SL)
- Grain Size Distribution Test (Sieve Analysis& Hydrometer)
- Specific Gravity
- Shear Strength Tests (Tri-axial Compression:, Direct Shear, Unconfined Compression:)
- Compaction test, CBR Test
- Consolidation Test, Permeability Test

BAE 523A Environmental Engineering

Subject Objective	Increasingly biological principles are being integrated as part of engineered systems to create innovative and effective design solutions. This subject teaches fundamental chemical, physical and biological principles which can be used to analyse data and formulate design solutions to environmental problems particularly related to water quality.
Learning outcome	To understand hydrology, soils, ecosystems, material balances, nutrient cycles, risk and water quality engineering. The way this knowledge is utilised by engineers for ecosystem restoration and engineered treatment systems is examined.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

- Distribution of water
- Requirement for good distribution system
- METHOD OF DISTRIBUTION
- Gravity System
- Combined gravity and pumping system
- Pumping system
- PRESSURE IN DISTRIBUTION MAINS
- SYSTEM OF WATER SUPPLY
- CONTINUOUS SYSTEM
- INTERMITTENT SYSTEM
- DRAWBACKS OF INTERMITTENT SYSTEM
- DISTRIBUTION RESERVOIR
- CAPACITY OF DISTRIBUTION RESERVOIR
- **Mac Donald's equation**
- DETERMINATION OF STORAGE CAPACITY

- Hydrograph method
- Mass curve method
- HEAD LOSS DUE TO FRICTION
- Darcy Weisbach formula
- Hazen William formula
- Manning’s formula
- Combined Darcy Weisbach and Colebrook White formula
- LAYOUT OF DISTRIBUTION SYSTEM
- Dead end system or Tree system
- Grid iron system or Reticular system
- Circular system or ring system
- Radial system
- ANALYSIS OF PRESSURE IN DISTRIBUTION SYSTEM
- Equivalent pipe method
- Hardy cross method

BAE621 Structural Engineering (3 pt)

Subject Objective	This subject covers methods and concepts which are fundamental to the analysis of linear elastic structural frameworks.
Learning outcome	Students learn how load bearing structures respond to the actions of directly applied loads as well as environmental effects such as temperature and foundation settlements. Topics covered include: computing deformations in plane frames using the principle of virtual work; the analysis of statically indeterminate structures using both, the force method as well as the method of moment distribution; and how to establish influence lines and how to use them in finding maximum load effects. A brief introduction to non-linear analysis of structures is also given.
Credit Point	3
Hours	72 hr
Assessment	Assignment/ Test/ Online MCQ Test/ Structural Design

Contents

- DESIGN OF A SLAB BRIDGE
- FOUNDATION SETTLEMENTS
- Major problems with soil settlement analysis
- Settlement classification
- Immediate settlement& consolidation settlement
- Stresses in soil mass
- Approximate method (2:1 slope)
- Boussinesq's method
- Westergaard's method

BAE623 Surveying & Traffic Engineering (2 pt)

Subject Objective	Surveying The objectives of this subject are to enable students to: become competent in the theory and practice of basic surveying skills. Traffic Engineering To understand the transportation planning principles & methods
Learning outcome	Surveying To be able to use basic surveying equipment such as levels and theodolites and perform the calculations and reductions of observations associated with such equipment; be aware of the likely errors that may occur during observations and of methods to eliminate or minimise such errors; be competent in making distance measurements accurately over short distances using tapes and wires and be aware of the advantages of modern developments in this field such as Electronic Distance-measuring Equipment; be able to perform a simple traverse and associated calculations to find the misclose and proportional accuracy, and the bearing and distance of one missing line; understand and be able to perform relevant calculations for the engineering applications of surveying (horizontal curves, vertical curves, and areas and volumes); and be aware of field techniques used to enable preparation of a detail and contour plan. The stadia method is discussed in class and is used as a data-gathering tool in a practical exercise. The applications of modern computer programs to reduce data for and the plotting of detail and contour plans are introduced. Services of professional surveyors are explained, as are engineering situations where surveyors must be engaged. Traffic Engineering To applt the transportation planning principles & methods in land transport & airport runway designs.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Surveying

Topics include: use of equipment such as levels, theodolites and tapes and wires; calculations related to this equipment, as well as traversing, horizontal curve setting out,

design of vertical curves, areas and volumes and stadia and contouring; modern developments in surveying; and the role of the professional surveyor.

Traffic Engineering

- Airport Runway Orientation
- Wind Rose Diagram
- Highway Pavement Performance
- Traffic
- Roadbed Soils (Sub grade Material)
- Materials of Construction
- Environment
- Drainage
- Reliability
- Transportation Engineering
- Transportation Planning
- Urban Transportation Planning
- Urban Transportation Planning Process
- Coding and Zoning
- Inventory Studies
- Travel Studies
- Forecasts for the Horizontal Year
- Trip General Analysis
- Trip Distribution Analysis
- Modal Split Analysis
- Network Assignment Analysis
- Evaluation

BAE624 Water Supply , Sanitation & Finishing (2 pt)

Subject Objective	This subject provides civil and environmental engineering students with a detailed knowledge of: (i) water pollution control objectives, (ii) the design of potable water and sewage treatment processes, (iii) sewerage and water reticulation systems, (iv) total water cycle management, and (v) the advanced technologies used in the upgrading of water and wastewater treatment plants, desalination and water and biosolids re-use.
Learning outcome	At the completion of this subject, students understand: public health and environmental objectives in water supply and wastewater disposal; the design concepts for drinking water and sewage treatment plants; sewerage systems and water reticulation systems; and new technologies developed to meet the new water quality and water re-use objectives.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

- Water Quality
- Dissolved Oxygen
- BOD (Biochemical Oxygen Demand)
- COD (Chemical Oxygen Demand)
- Water Sampling
- Requirements for good Sampling Procedure

BAE622 Architecture (3 pt)

Refer any architecture text book , study & prepare the report on practical application problem given by the tutor.

Professional Diploma/ Bachelor of Engineering (Mechanical)

Year (3)

GENERAL APPLIED ENGINEERING (MECHANICAL) DEGREE

Subjects
BAE 401 Advanced Engineering Mathematics
BAE 402 Calculus
BAE 403 Engineering Mechanics
BAE 404 Engineering Materials & Thermodynamics
BAE 507 Electro-mechanical Energy Conversion
BAE 508 Industrial Engineering & Industrial Management

The detailed contents of the above subjects can be found under Professional Diploma/ Bachelor of Engineering (Electrical)

BAE511 Air-conditioning & Refrigeration

Subject Objective	The Heating, Ventilation, Air Condition and Refrigeration Technology or HVAC/R Program is designed to provide hands-on training on the same equipment used by business and industry. In addition, this program is designed to provide the students with the necessary skills required to become a state licensed independent business owner/contractor or for employment in the industry as a technician in residential, commercial, and/or industrial air conditioning, refrigeration and heating.
Learning outcome	Students will have an opportunity to learn various HVAC/R processes that will provide the basic preparation for entry-level jobs in the field of air conditioning, refrigeration, and heating with the initial focus placed on troubleshooting and service. In addition, they will learn the fundamentals of HVAC/R through hands-on training in (1) Theory of temperature control, (2) Electronics, (3) Design and construction of HVAC equipment, (4) Installation, (5) Maintenance, and (6) Repair. As students advance through the program, related topics of indoor air quality, load calculation, system design, and industry code standards will also be covered.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test/ Design Project

Contents

- Heat transfer by Conduction
- Convection
- Radition
- Thermal Conductivity, *k*
- Boundary and Initial Conditions
- Properties and state
- The System
- Internal energy (U)
- Enthalpy (H)
- Work (W)
- Heat (Q)
- Specific Head Capacity (c)

- Heat Engine
- The characteristic equation of a perfect gas
- Expansion processes
- Adiabatic process
- Isothermal Process

BAE613 Mechanical Instrumentation Process

Subject Objective	This subject aims to extend students' competence in the design of engineered systems and components, as well as familiarising them with modern design approach methodologies.
Learning outcome	While the emphasis is on realistic engineering-team/client/boss interactions, need exploration, project development and delivery, this subject draws heavily on the expertise the students have developed up until this stage of the course. Furthermore, the subject aims to enhance and polish students' capabilities in dealing with human-centric aspects of the design process.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test/ PLC Program Project

Contents

- Problem-solving Methodology
- Matlab Environment
- Initializing Variables
- Data Format
- Printing Matrices
- Useful Commands and Functions
- Fundamental Engineering Computations
- Two-Dimensional Arrays and Matrices
- Variational Method
- Collational Method
- Subdomain Method
- Galerkin’s Method
- Least Square Method

BAE614 Machine Design

Subject Objective	The objectives of this subject are to give students an understanding of the kinematics and dynamics of rigid bodies in general planar motion, which is typically encountered in design and analysis of mechanical systems, and an elementary understanding of the vibration of mechanical systems, in particular the dynamic behaviour of single-degree-of-freedom mechanical systems with various damping and applied forces.
Learning outcome	Students should be able to: model problems in rigid body planar and spatial kinematics and rigid body planar dynamics; understand energy methods in contrast to direct applications of Newton's second law of motion for setting up a model; understand the physics of a problem formulated from a real mechanical system; appreciate the role of vibration in machines and structures in the engineering world; understand the procedures required to evaluate a vibration problem; and analyse the dynamic response of single-degree-of-freedom mechanical systems. The subject also covers the concept of a rigid body, full nomenclature used in kinematics, two-body velocity equations and velocity diagrams of planar motion; two-body acceleration equations and acceleration diagram; three-body velocity equations and acceleration equations including Coriolis acceleration term; angular velocity acceleration equations including three-dimensional problems; F=ma applied to a rigid-body-dynamics, significance of 'centre of mass', the 'moment' relationship (M=Ia, etc.); angular momentum, conservation of angular momentum (general case, centre of mass moving, no 'fixed' point); linear and angular impulse problems; energy methods for general planar motion; elementary principles of vibration theory, free vibration of undamped single-degree-of-freedom system; free decay vibration of damped single-degree-of-freedom system; and the forced vibration of single-degree-of-freedom system.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test
TOPICS	Topics covered include the mechanical design process, graphical presentation of engineering ideas and components, computer-aided design, engineering materials and processes and aspects of engineering knowledge. A prototype design-and-build project is a major component of this subject
Specific Contents	• Balancing , Forces, Cam Profile • Resultant Effects of Engine, V-Engine Mechanism • Arrangement to balance the primary moment (C.W) • FORCES IN ENGINE, Inertia Forces and D'Alembert's Principle

BAE512 Building Service Water Supply System

Subject Objective	This subject provides mechanical engineering students with a detailed knowledge of: (i) building water supply control objectives, (ii) the design of potable water supply processes &piping system mechanical design.
Learning outcome	At the completion of this subject, students understand: public health and environmental objectives in water the design concepts for water supply piping design
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

- Pressure loss in pipe
- Pressure loss in pipet by loss coefficient method
- Pressure loss in pipe by Equivalent Length Method
- To find the duct pipe by Equal Friction Method
- To find the duct pipe by Balance Capacity Method
- Design the piping system

BAE311 Plant Engineering (2 pt)

Subject Objective	The objectives of this subject are to: have an understanding of the behaviour of linear (or approximately linear) dynamic systems that are typically encountered in the practice of mechanical engineering; and gain an understanding of how such systems can be controlled, or have their dynamics altered, so as to achieve desired outcomes.
Learning outcome	Topics covered include: • dynamic models: component block diagram, laplace transform, undamped free and forced vibration of SDOF systems, damped free and forced vibration of SDOF systems, resonance and beats, logarithmic decrement, response under the harmonic motion of the base, coupled-tank systems, vibration of 2DOF systems, vibration isolation, vibration absorbers • Matlab and Simulink • dynamic response: system modelling diagrams, poles and zeros, effect of pole locations, first order systems, second order systems, effects of zeros and additional poles, stability • basic properties of feedback: the basic equations of control, control of steady-state error, PID control, pole placement method • the root-locus design method: root-locus of a basic feedback systems, dynamic compensation, examples • control system implementation and introduction to advanced control systems.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

- ***Three Degree of freedom***
  (a) Newton's method
  (b) Mechanical Impedance method
  (c) Influence coefficients
  (d) Matrix method

(e) Holzer method
(f) Matrix Iteration method

- **INTRODUCTION TO CONTROL SYSTEM**

- **DIFFERENTIAL EQUATIONS**

- **LINEARIZATION OF A NON-LINEAR FUNCTION**

- **MODELLING OF CONTROL SYSTEMS**

- **FREQUENCY RESPONSE METHODS**

- **Stability**

BAE312 Design Engineering (Manufacturing) (2 pt)

This unit is the same as

BAE621 Structural Engineering (3 pt)

The following contents can be added for manufacturing process

Subject Objective	The objectives of this subject are to: explain and provide examples of manufacturing processes involved in casting, forming machining and joining of materials; identify and describe the manufacturing process by which products are made of different materials: metals, polymers, ceramics and composites; demonstrate improved technical written and graphical communication skills by completion of specified laboratory reports and site visit reports; and demonstrate basic problem-solving skills relating to manufacturing and production.
Learning outcome	Students learn the processes and materials available, as well as a competent and practical approach to evaluating, selecting and recognising the connections between the materials/processes and engineering design
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

All contents in structural engineering

PLUS

- The design and manufacturing processing of products in various environments ranging from low volume to high volume and with various levels of capital investment in the manufacturing system.
- The modern concepts of quality management, including Taguchi methods, after looking at process quality control and its origins.
- Modern metrology equipment and methods are treated in a similar manner: modern equipment and methods and their origins.
- The computer systems on manufacturing. Firstly, students gain some experience with manufacturing in a CAD/CAM environment.
- Industrial robots in environments such as fabrication, welding and assembly. Topics such as: CIM, CAPP, JIT, GT, FMS, MRP, Toyota and Kanban are introduced in a project environment

BAE313 Environmental Control (2 pt)

This unit is the same as

BAE 523A Environmental Engineering

BAE314 Mechanical Power Generation (2 pt)

Subject Objective	This subject aims to develop students' fundamental knowledge and understanding of the dynamics of various mechanical power generation systems;
Learning outcome	To provide students with knowledge and skills in vibration testing and data acquisition; facilitate students' in-depth learning of the theory and methods, including modelling, modal analysis, system identification and numerical approaches; familiarise students with techniques and data acquisition system used in vibration testing, measurement, signal processing for determining the dynamic characteristics of a physical system; and enable students to apply the learnt methods to real world applications which include vehicle suspension design, vibration analysis and condition monitoring of rotating machines & application of PLC control system
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

Mechanical

Basic vibration theory for the analysis of two or more degrees of freedom multi-body mechanical systems, basic topics on widely-used engineering measurements, data acquisitions, spectrum analysis, signal processing and their applications in vibration control and machine condition monitoring.

PLC

- **PLC Basics**
- **PLC Structure**
- **PLC in Comparison with Other Control Systems**
- **PLC's CPU**
- **PLC's Memory**
- **PLC in Comparison with Other Control Systems**
- **PLC's CPU**
- **PLC's Memory**
- **Programming Devices**
- **Programming Languages**

- **Instruction Set**
- **Typical Combinations of Languages**
- **Basic Symbols**
- **Elementary Logic Circuit**
- **PLC's Functions**
- **Industrial Programming**
- **PLC PRACTICE**
- **Selection of PLC**
- **Types of I/O & Capacity Needed**

- **Control System Basic**
- **Sequence Control**
- **Automatic Control**
- **Terms of Sequence Control**
- **Basic Knowledge on Contacts**

- **INDUSTRIAL MACHINE CONTROLS**

BAE315 Materials Engineering (2 pt)

Subject Objective	Mechanical engineers design, construct, maintain, inspect and manage private and public work projects. The common materials used in construction engineering applications and construction are concrete, steel, timber and masonry. It is essential for mechanicall engineers to have a basic understanding of these construction materials, in relation to their production, properties, testing and application.
Learning outcome	To help students acquire fundamental knowledge of the production, physical and engineering properties of construction materials; understand the effects of environments on the properties and performance of these materials; familiarise themselves with the relevant engineering standards and other specifications and standards, in relation to the requirements and testing methods and interpretation of test results; improve analytical and communication skills by presenting test reports; select material in relation to specified requirements; and develop an awareness of the use of waste materials in construction.
Credit Point	2
Hours	48
Assessment	Assignment/ Test/ Online MCQ Test

Contents

- Load, Stress and Strain, Hook's law ,
- Principal of Superposition
- Tensile Test , Factor of Safety
- Strain Energy, Resilience
- Impact Loads
- Varying Cross-section and Loads
- Strain Energy , Resilience
- Compound Bars
- Temperature Stresses

1. Requirements, variability, selection and standards relating to use of construction materials
2. Steels: production, types, usage, mechanical properties and testing and failure modes

Elective (2 pt)

Subjects
BAE513 Production Technology
BAE611 Maintenance Engineering
BAE612 Engineering Metallurgy

Refer any text book , study & prepare the report on practical application problem given by the tutor.

Professional Diploma/ Bachelor of Engineering (Civil-Building Services)

By mixing the degree level Electrical/ Mechanical & Civil Engineering subjects with Advanced Diploma level Electrical/ Mechanical & Civil subjects relevant to Civil-Building services, the individualized study plan for this professional diploma can be arranged.

Professional Diploma/ Bachelor of Engineering (Mechanical-Mechtronics)

By mixing the degree level Electrical/ Mechanical & Civil Engineering subjects with Advanced Diploma level Electrical/ Mechanical & Civil subjects relevant to Mechanical-Mechatronics, the individualized study plan for this professional diploma can be arranged.

The supporting curriculums from Information Technology & Business Management.

Engineering curriculums are supported by Information Technology & Business Management.

The details of the supporting curriculums are also presented.

Diploma/ Advanced Diploma of Engineering

At the following link, those programs can be viewed

http://www.highlightcomputer.com/detailedcontent.htm

Bachelor of Applied Science (Information Technology)

Year 1+2 Refer Diploma & Advanced Diploma in Information Technology Detailed Contents

Bachelor of Applied Science (Computer Science & Computer Technology)

Year (3)

Unit	Topics	Reference	Points
ICT 301	General Electrical Knowledge	EE101	3
ICT 302	Digital Electronics	EE209/H012	3
ICT 303	Amplifier	EE208/H013	3
ICT 304	Material Science	E081	3
EE204	Physics	E046	3
EE201	Mathematics 1	E050	3
EE202	Mathematics 2	E026	3
EE306	Basic Control	I008	3
BAE605	Management		3
BAE408	Analog & Digital Electronics		3
		TOTAL	30

Year (4)

Unit	Topics	Reference	Points
ICT 401	Advanced Mathematics 1	BAE401	3
ICT 402	Advanced Mathematics 2	BAE402	3
BAE604	Telecommunication System		3
BAE508	Project Management		3
ICT 305	Professional Programming (1) C++		3
ICT 403	Professional Programming (2) Object Oriented		3
ICT 404	Professional Programming (3) Java		3
ICT 405	Professional Practice (1) Network		3
ICT 406	Professional Practice (2) Website		3
ICT 407	Artificial Intelligence		3
		TOTAL	30

Refer Diploma & Advanced Diploma in Electrical Engineering Detailed Contents

ICT 305 Professional Programming (1) C++

- Introduction
- Basic program architecture
- Variables
- Console programs
- Program control
- String
- Arrays
- Object oriented programming
- Classes
- Design of classes
- Methods
- Inheritance
- The class object
- Abstract classes
- Interfaces
- Static members
- More about arrays
- Types
- Enum
- Struct
- Generic types
- Exception handling
- Comments
- Extension methods
- Collection classes
- List Stack
- Linked list
- Dictionary
- Text file
- Binary files
- Object serialization
- Lottery
- Expression

ICT 403 Professional Programming (2) Object Oriented

object-oriented-programming-using-c-sharp

- Introduction to object oriented programming
- Unified Modelling Language (UML)
- Inheritence & Method Overriding

- Object rules & the importance of polymorphism
- Overloading
- Object oriented software analysis and design
- Generic collection & how to serialize them
- C# development tools
- Creating & using exceptions
- Agile programming
- Case studies

ICT 404 Professional Programming (3) Java

object-oriented-programming-using-java

- Introduction to object oriented programming
- Unified Modelling Language (UML)
- Inheritence & Method Overriding
- Object rules & the importance of polymorphism
- Overloading
- Object oriented software analysis and design
- Collection framework
- Java development tools
- Creating & using exception
- Agile programming
- Case study

ICT 405 Professional Practice (1) Network

This competency standard unit covers develop services for network clients for emails, internet access, shared resources and the like. It encompasses safe working practices, installing and configuring Domain Name Server (DNS), email servers, Dynamic Host Configuration Protocol (DHCP), remote access servers, Network Address Translation (NAT), directory services, Authentication Servers and documenting development activities.

Essential knowledge and associated skills

This describes the essential skills and knowledge and their level, required for this unit.

Evidence shall show that knowledge has been acquired of safe working practices and developing network services.

The extent of the essential knowledge and skills required is given Volume 2 Part 2, Clauses

- **Network infrastructure**

  Evidence shall show an understanding of network infrastructure to an extent indicated by the following aspects:

a. Domain Name Service (DNS) encompassing
   - DNS Server Service
   - Root name server
   - Configuring zones
   a. *Note:* Examples include configuring for dynamic updates and delegating zone for DNS
   - Caching – only server
   - DNS client
   - Testing DNS Server service
   - Manually creating DNS source
   - Managing and monitoring DNS

b. Dynamic Host Configuration Protocol (DHCP)
   - Installation of DHCP Server Service
   - DHCP scopes, superscopes and multicast scopes
   - DHCP – DNS integration
   - Active DirectoryTM
   - Managing and monitoring DHCP

c. Network Infrastructure encompassing
   - Configuring and troubleshooting remote access
   a. *Note:* Examples include remote access policy, configuration of remote access profile, Virtual Private Network (VPN), multi link connection, routing and remote access for DHCP
   - Managing and monitoring remote access
   - Remote access security
   - Note. Examples include authentication protocols, encryption protocols and access policy

d. Network Protocols encompassing
   - Installation, configuration and troubleshooting of network protocols
   a. *Note:* Examples include Transmission Control Protocol / Internet Protocol (TCP/IP), NWLink and network bindings
   - Configure TCP/IP packets
   - Configuring and troubleshooting network protocol security and IP Security (IPSec
   - Managing and monitoring network traffic

e. Internet Naming Services in a network encompassing
   - Installation, configuring and troubleshooting
   - Configuring Internet Naming Services replication
   - Configuring an application networking interface
   - Managing and monitoring Internet Naming Services

f. IP Routing encompassing
   - Installation, configuring and troubleshooting of IP routing protocols
   a. *Note:* This includes updating routing tables, and implementing demand-dial routing
   - Managing and monitoring IP routing
   a. *Note:* This includes border routing, internal routing and IP routing protocols

g. Network Address Translation (NAT) encompassing
   - Installing Internet connection sharing

- Installing NAT
- Configure NAT properties and interfaces

h. Certificate Services encompassing
- Installing and configuring Certificate Authority
- Issuing and revoking certificates
- Removing the Encrypted File System recovery keys

- **Directory services**

Evidence shall show an understanding of directory services to an extent indicated by the following aspects:

a. Installing and configuring directory services encompassing
- Installing forests, trees and domains including automatic domain controller
- Creating sites, subnets, site links and connection objects
- Configuring server objects including site membership and global catalogue designation
- Transferring of operations master roles
- Verification and troubleshooting of directory services installation
- Implementation of and organisational unit structure

b. Domain Name Service (DNS) for directory services encompassing
- Installation and configuration of DNS for directory services

a. *Note:* Examples are integration with existing DNS infrastructure, configuration of zones for dynamic and secure dynamic updates and creation and configuration of DNS records

- Management, monitoring and troubleshooting of DNS

c. Change and Configuration Management encompassing
- Implementing and troubleshooting Group Policy

a. *Note:* Examples are Group Policy Object (GPO), linking to an existing GPO, delegation of administrative control of Group Policy, filtering of Group Policy settings by using security groups and modification of Group Policy prioritisation

- Managing and troubleshooting user environments using Group Policy
- Configuring directory services to support Remote Installation Services (RIS) including configuration of RIS options and security.

d. Components of a directory service infrastructure encompassing
- Management of directory objects

a. *Note:* Examples are moving objects, publishing resources in the directory service infrastructure, location of objects in the directory service infrastructure, creation and management of objects manually and by scripting, access control of objects and delegation of administrative control

- Monitoring, optimisation and troubleshooting of the directory services infrastructure performance and replication
- Backup and restoring directory services infrastructure

a. *Note:* Examples are authoritative and non authoritative restoration of directory services, restoration from systems failure and the seizing of operations master roles

e. Security encompassing
- Applying security policies using Group Policy
- Creating, analysing and security modification by using Security Configuration and Analysis snap-in and the Security Templates snap-in
- Implementation of an audit policy

f. Monitoring and analysing security events

Multi-layer switched networks Evidence shall show an understanding of multi-layer switched networks to an extent indicated by the following aspects:
a) Campus network design encompassing: o core layer o distribution layer o access layer o selection of appropriate devices o defining workgroups b) Managing Redundant Links encompassing: o Spanning Tree Protocol (STP) o Controlling STP in redundant environments o STP in Virtual Local Area Network (VLAN) environments o Configuring redundant routing protocols for a fault-tolerant routing Note. An example is Hot Standby routing protocol (HSRP) c) Fast layer 2 services encompassing: o Fast Ethernet o Trunking o Fast Ether channels

o Gigabit services d) Inter VLAN Routing encompassing: o Hardware vs. Software switching o Overview of fast switching technologies o Elements of a multi-layer switch o Configuring multi-layer switches e) Multicast encompassing: o Multi-cast group management o Configuring multi-cast control at layer 2 o Configuring multi-cast control at layer 3 f) Controlling Access to the Campus Network g) Managing Network Traffic

ICT 406 Professional Practice (2) Website

This unit covers installation, set up, implementation and provision of on-going support of web services. It encompasses working safely, installing and administering server software and databases, server side scripting, configuring access and security and documenting work activities.

Development, implementation and testing HTML pages with at least four of the following features:
Relative and absolute links, images and table formatting Cascaded styles sheets

Forms New browser windows Validation of form data
Development, implementation and testing of server scripting for database access with at least four of the following features:
Form data input response Form data processing Database access Output of database table contents Insertion of table data to database
Installation and administration of key features of Web and Web application servers

	Programming elements
Evidence shall show an understanding of the programming elements to an extent indicated by the following aspects:	
a) Algorithm Design encompassing: o Problem Definition o Steps in Problem-Solving o Modular Design o Top-Down Design o Flow-Charts and Structured Programming o Pseudo-Code o Filtering allowable Data Input	

o Using standard Input & Output methods

o Object-Oriented Design (brief intro.)

o Documentation Rationale

o Acceptable Documentation Method

b) Machine-Code, Assemblers and Compilers

c) Brief History of Languages & Limitations

d) Parameters of different programming languages encompassing:

o Constants and variables

o Data types and declarations

o Logical flow control

o Detecting breaches of structure

o Documentation instruction examples

o Procedures and function calls

o Parameter-passing

o Local and global variables

o Object-oriented methods

o Classes and objects,

o encapsulation and inheritance.

o Visual programming methods

o General-purpose program libraries

e) Data structures encompassing:

o Records

o Arrays

o File Input/output

f) Testing and validation encompassing:

o Sequencing the process

o Inconsistencies detection

Note, An examples is comparing code to documentation, commonly called ―Desk-Checking'.

o Test data selection

o Modular testing & debug

o Problems with using

	Client side programming
Evidence shall show an understanding of client side programming them to an extent indicated by the following aspects:	
a) Client server architecture b) Hyper Text Markup Language (HTML) encompassing: o Forms o Table o Cascading style sheets c) Hyper Text Markup Language (HTML) scripting encompassing: o Exposed object model	

o Events and event handling o Objects methods, properties, events o Window, document, form, and form elements o String object, methods, properties o Form field validation Note: Examples of scripting language are JavaScript and Visual Basic (VB) Script d) Extendable Markup Language (XML) encompassing: o Syntax o Structure (well formed XML) o Schemas o Transformations o Parsing Document Object Model (DOM) and Simple API (SAX) o Scripting to Document Object Model (DOM) e) Extendible Stylesheet Language (XSL) generating HTML from XML f) Wireless thin client programming Note. Examples include Java2 Micro Edition (JEME), Mobile Information Device Profile (MIDP), Windows CE and Palm OS g) Consideration for system architecture h) Configurations and profile overview

	Server scripting
Evidence shall show an understanding of server scripting the to an extent indicated by the following aspects:	

a) Client server architecture

b) Web and Application Servers

c) Server scripting languages e.g. JSP, ASP, PHP, Perl

d) Server script Tags

e) Integrating script with HTML

f) Server script object model

g) Request, Response, Session, Application

h) Using server objects

i) Server components

j) Using components in server scripts

k) Scope of server components e.g. session, page, application

l) Component get / set methods

m) Deploying server components

n) Advanced server scripting concepts

Database access
Evidence shall show an understanding of database access to an extent indicated by the following aspects:
a) Relational Databases encompassing: o Tables, keys, design rules and normalisation o Database management utilities Note. Example include MSSQL, MYSQL and Access b) Structural query language (SQL) queries encompassing: o Select, insert, update and delete processes o Application of conditionals _where‘, _distinct‘ and _like‘ o Create and dropping tables

c) Data Base connectivity components encompassing:

o Drivers, data sources

o Database connectivity component loading

o Query connection and execution

o ResultSets / RecordSets

o Rows, columns, cursors, concurrency, pooling

o Iterating through ResultSets / RecordSets

Note. Example include ODBC, JDBC, ADO

	Web applications and services
Evidence shall show an understanding of web servers to an extent indicated by the following aspects:	
a) Comparison of HTTP servers and platforms	

Note. Examples include IIS and Apache

b) Comparison of Application servers and platforms

Note. Examples include J2EE / tomcat, .NET

c) HTTP Servers encompassing:

o Installation requirements and methods

o Security configuration

o Content publishing and security

d) WEB application technologies encompassing:

o Server installation and deployment

o Security

e) Server scripting technologies encompassing:

o WEB application installation and deployment

o Application server administration

f) Web services overview encompassing:

o WEB services XML, API, RPC

o XML API processing

o XML DOM

o SOAP (simple object access protocol)

o WEB Services Security

ICT 407 Artificial Intelligence

- Paths to artificial intelligent
- Agents and environment
- Framework for agents environment
- Agent oriented programming languages
- Net logo development
- Movement, Behaviour & Decision making
- Terms of movement
- Animated mapping simulation Embodiment
- Reactive versus cognitive agents
- Emergence, Self organization
- Adaptibility evolution
- Communication
- Search behaviour
- Resoning rules and logic
- Knowledge & reasoning using decision trees
- Intelligence
- Design objectives for artificial intelligence
- Computer problem solving ability

Bachelor of Business

Year 1Refer Diploma in Management Detailed Contents

Year 2 Refer Diploma & Advanced Diploma in Information Technology Detailed Contents

YEAR (3)

Bachelor of Business (E-Business & Management)

The learning system will be based on self study. Read the given references study materials and prepare the project work. You need to read the books in English.

The following units common to MBA course are to be studied.

Mgt 301 Electronics Business

Mgt 302 Information Security

Mgt 303 Management Information System

Mgt 304 Electronics Commerce

Mgt 305 Quantitative Methods for Management

Mgt 306 Human Resources Management

Mgt 307 Marketing Management

Mgt 308 Artificial Intelligence

To assess Level 3, you need to write the report of 10 pages each on what you have learnt in the unit.

YEAR (4)

Mgt 401 Management Project

Mgt 402 Electronics Business Project

Mgt 301 Electronics Business

- Project Objective
- Business Capabilities
- Benefits
- Deliverables & Dependencies
- Costs
- Financial Appraisal
- Timescales & Milestones
- Success Criteria
- Risks
- the impacts of electronic commerce
- drivers and inhibitors of electronic commerce from the perspective of the CEOs
- the impacts of Electronic Commerce on the Industry Supply Chain
- Electronic Commerce Maturity Model

Mgt 302 Information Security

	Fundamentals of network security
Evidence shall show an understanding of fundamentals of network security to an extent indicated by the following aspects:	
a) Network Security fundamentals b) Securing Perimeter Routers c) Access Control Lists (ACLs) d) Router Authentication, Authorisation and Accounting (AAA) Security	

e) Intrusion Detection
f) Internet Protocol (IP) Security
g) Virtual Private Network (VPN)
h) Firewalls
i) Translations and Connections
j) Access Control Lists for Firewalls
k) AAA and Firewalls
l) Intrusion
m) Intrusion Detection Systems (IDS)
n) Firewall Failover and System Maintenance
o) Firewall VPN‘s
p) Firewall Device Management

- ❑ Introduction of Computer Networks and Internet :
  - ❖ Overview of the Internet, client/server program, circuit switching, packet switching, physical media, queuing delay and packet loss, TCP/IP Service models, Internet Protocol Stack (Layers)
- ❑ Application Layer :
  - ❖ Service requirements, WWW, HTTP, FTP, Electronic Mail, Domain Name System, Socket programming

- ❑ Transport Layer
  - ❖ Service models, Multiplexing/Demultiplexing, Connection-less transport (UDP), Principles of reliable data transfer, Connection-oriented transport (TCP), TCP congestion control
- ❑ Network Layer :
  - ❖ Routing and forwarding, IP(The Internet Protocol) IPv4, IPv6 ,Routing algorithms, Routing in the Internet, Multicast
- ❑ Link Layer and Local Area Networks :
  - ❖ Link layer services, Error detection and correction, Multiple Access Protocols, Link layer addressing, Ethernet, Hubs and switches, Point-to-Point Protocol
- ❑ understand principles of network security:
  - ❖ cryptography and its *many* uses beyond “confidentiality”
  - ❖ authentication
  - ❖ message integrity
  - ❖ key distribution

- ❖ security in practice:
- ❖ firewalls
- ❖ security in application, transport, network, link layers
- ❖ key distribution
- ❖ security in practice:
- ❖ firewalls
- ❖ security in application, transport, network, link layers

Mgt 303 Management Information System (MIS)

- The role of information system
- Hardware & software in enterprise
- Database management system
- Business Telecommunication system
- Communication network
- Network application
- Contemporary mobile service
- Examples of information systems
- Management of MIS
- Managing the Digital Firm
- Emergence of the Digital Firm
- The business information value chain
- A Business Perspective on Information Systems
- Variation in returns on information technology investment
- Sociotechnical Systems
- New Options for Organizational Design:
- The Digital Firm and the Collaborative Enterprise
- Redesigned workflow for insurance underwriting
- The Challenges of Information Systems: Key Management issues

Mgt 304 Electronics Commerce

- **Types of E-commerce**
- **Understanding E-commerce: Organizing Themes**
- **E-commerce Business Models and Concepts**
- **The Internet and World Wide Web: E-commerce Infrastructure**
- **Building an E-commerce Web Site**

- **Online Security and Payment Systems**
- **Marketing Communications**
- **E-commerce Marketing Concepts**
- **Ethical, Social, and Political Issues in E-commerce**
- **Online Retail and Services**
- **E-commerce Business Models and Concepts**
- **The Internet and World Wide Web: E-commerce Infrastructure**
- **Security and Encryption**
- **E-commerce Payment Systems**
- **E-commerce Marketing Communications**
- **Ethical, Social, and Political Issues in E-commerce**
- **Online Service Industries**
- **Supply Chain Management and Collaborative Commerce**
- **Auctions, Portals, and Communities**
- **Online Content and Media**
- **Social Networks, Auctions, and Portals**
- **Online Content Providers: Digital Media**
-

Mgt 305 Quantitative Methods for Management

- Research approach
- Data source
- Qualitative method
- Quantitative Methods
- Experiment research & observation
- Questionaries survey
- Sampling
- Survey analysis
- Statistical analysis
- Writing research report

- Prescriptive Process Models
- Agile Development

Mgt 306 Human Resources Management

- Meeting Present and Emerging Strategic Human Resource Challenges
- **Managing Work Flow and Conducting Job Analysis**
- Understanding Equal Opportunity and the Legal Environment
- Managing Diversity
- Recruiting and Selecting Employees
- Appraising and Managing Performance
- Rewarding Performance
- Managing Compensation

Mgt 307 Marketing Management

- Company (Distributor) background (e.g. brief history, nature of business, etc.)
- Marketing objective(s) on the Chosen product/service
- S.W.O.T Analysis
- Target customers
- Product Positioning in the market
- Describe the current marketing mix:
  - Product
  - Pricing
  - Distribution
  - Marketing Communications (Promotion)

- overall competitive strategy

- planning the details of the marketing mix.

- sales& marketing materials

- understanding of company's competitors

- Marketing Recommendations for improvement

- marketing strategies

Mgt 308 Artificial Intelligence

This is the same as

ICT 407	Artificial Intelligence

Mgt 401 Management Project

Mgt 402 Electronics Business Project

Two reports one for Management for (Mgt 303+Mgt 305+Mgt 306) & another for Electronics Business + Marketing (Mgt 301+Mgt 302+Mgt 304+Mgt 307+Mgt 308) subjects are required to be presented.

Each should contain 4000 to 6000 words of how you pursue the study in Management,, Marketing, Electronics Business subjects should be described.

The project should contain management plans, business plan & performance, task, job procedures IT integration etc of the topics of your choices.

http://www.filefactory.com/file/3dcrz90tirvh/Dip%2BAdv%20Dip%2BB%20Bus%20S%20Course%20Outline.doc

IQY Technical College ၏ Engineering Work Studies သင်တန်းများ

(သင်တန်းကြေး--ကျပ်၅သောင်းOnline)

Dip EI (Diploma in Electrical Installations)--- (Course Number 106689EI)
EEM201+EEM202+EEM203+EEM206+EEM208

- EEM201-Principle of Electricity
- EEM202-Electrical Knowledge
- EEM203-Electrical safety
- EEM206-Electrical Wiring
- EEM208-Electrical Installation Design

Dip M& E (Diploma in Mechanical and Electrical Services)--- (Course Number 106689ME)

- MEM204-.Airconditioning
- MEM205-Ventilation
- MEM207/EEM201-Principle of Electricity
- MEM208/EEM203-Electrical safety
- MEM209 Automation and Control
- CEM201-Sanitation

Professional Certificate in Hotel Construction (Course Number 206689HC)

- Hotel Restaurants and Bar
- Restaurant Design Principles.
- Building Control
- Building Technology Electrical Mechanical System
- Fire Safety Engineering
- Materials for Civil & Construction Engineers
- Building Construction
- Building Services
- Estimating
- Electrical Wiring Commercial
- Detailing
- Air Distribution in Buildings
- Building Systems For Interior Designers

IQY Technical College Unit/ Subject Coding

IQY QF Level	Year	Course	Coding
1	1	Certificate/Diploma	1xxxx
			2xxxx
2	2	Advanced Diploma	3xxxx
3	3+4	Bachelors degree	4xxxx
			5xxxx
			6xxxx
4	5+6	Bachelors (Hons)	6xxxx
		Graduate Diploma/Masters	7xxxx
5	7+8+9	Doctorate	6XXXX
			7xxxx
			8xxxx

Advanced Diploma in Engineering Practice (Myanmar Language) (27764)

Pre-requisite

Completion of Diploma in General Engineering OR Experience OR Completion of Certificate Level courses

Credit

Total 60 credits Each 5 Credits

Civil Engineering

CEM202-Estimating

CEM203-Drawing

CEM204-.Construction

CEM205-.Iron work

CEM206-Welding

CEM207/ EEM201-Principle of Electricity

CEM208/EEM202-Electrical Knowledge

CEM209/EEM203-Electrical safety

CEM210/MEM204-.Airconditioning

CEM211/MEM205-Ventilation

CEM21- Brick Laying Practice

Learning Record to submit for credit for each unit

Mechanical Engineering

MEM201-Principle of Engine
MEM202-.Auto Electronics
MEM203-.Auto Electricity
MEM204-.Airconditioning

MEM205-Ventilation

MEM206-Welding

MEM207/EEM201-Principle of Electricity

MEM208/EEM203-Electrical safety

MEM209-Automation and Control

MEM210-Mechatronics

MEM211/ CEM205-.Iron work

MEM212/ CEM203-Drawing

Learning Record to submit for credit for each unit

Electrical Engineering

EEM201-Principle of Electricity

EEM202-Electrical Knowledge

EEM203-Electrical safety

EEM204-Electrical Works

EEM205-AC and DC Electricity and Electronics

EEM206-Electrical Wiring

EEM207-Fault Finding

EEM208-Electrical Installation Design

EEM210- Advanced Electrical Power Principle

EEM211-Power Transmission and Distribution

Elective

EEM212 / MEM203-.Auto Electricity
OR

EEM213/ MEM204-.Airconditioning

Learning Record to submit for credit for each unit

Please note that the students who complete the entire course in Myanmar Language must attend1 year bridging program in English to continue the degree program.

Diploma/ Advanced Diploma in Air-conditioning and Refrigeration Engineering

www.iqytechnicalcollege.com/advdipare.htm

Diploma in Air-conditioning and Refrigeration Engineering

30 credits- Each -6 credits x 5 units

MEM204-.Airconditioning

MEM205-Ventilation

MEM207/EEM201-Principle of Electricity

MEM208/EEM203-Electrical safety

MEM209 Automation and Control

Advanced Diploma in Air-conditioning and Refrigeration Engineering

Each 3 units x 10= 30 credits+ Two Practical Units

EE201 Engineering Mathematics

EE204 Engineering Physics

EE111 Electro-magnetism and Basic Electrical Machines

ME106 Electrical Circuits

ME334 Air-conditioning & Refrigeration

ME102 Engineering Thermodynamics

ME107 Heat Transfer

RE003 Solar and Thermal Energy System

BAE511 Air-conditioning and Refrigeration (Advanced)

BAE606 Building Service Electrical and Mechanical Engineering

PC8 Air-conditioning and Refrigeration Basic Servicing

PC10 Electrical Machine Winding

Advanced Diploma in Electro-Mechanical and Construction Engineering

Pre-requisite

- THS –Diploma in General Engineering & Drafting OR ITC/THS- 5 Years experience
- Non year 10 passed matured workers
-

Delivery and Assessment

- Online Live Lessons+ Assignment
- Pay the fees and submit the assignment to receive transcripts
- On completion of all, the award will be issued.

Core Units (6 Credits points per unit x 10 = 60 Credits)

· ADEMC201-Sustainability and Electrical Practice

· ADEMC202-Engineering Practice

· ADEMC203-Design and Technology

· ADEMC204-General Electrical Engineering

· ADEMC205-General Civil Engineering and Construction

· ADEMC206-General Mechanical Engineering

· ADEMC207-Mathematics,Physics and Chemistry

· ADEMC208-Engineering Materials

· ADEMC209-Engineering Management

· ADMEC210-Workshop Practice and Safety

Advanced Diploma of Rural Development Engineering

www.highlightcomputer.com/adrde.htm

www.highlightcomputer.com/adrde.pdf

Objective of the course

This course aims to provide the necessary skills required for people in rural areas to perform the followings

- Agricultural Foods Production and Animal Handling
- Building Construction, Drawing, Water Supply, Road and Bridge Construction, Irrigation
- Electrical Supply & Solar Electrical Supply System
- Hydraulics
- Machine Repair, Welding and Machining
- Water Chemical Treatment
- Transportation & Logistics

Course Structure

The course consists of Civil, Electrical and Mechanical Engineering principle together with Transportation, Logistics and Agricultural Foods Production.

Outcome of the course

After having completed this course, the attenders can perform rural developmental engineering basic works in their regions.

Detailed Structure of the course

Credit Points- 60 points to complete Advanced Diploma of Rural Development. Diploma and Certificate in Rural Development can be awarded upon completion of the specific units.

List of Subjects

Advanced Certificate in Rural Development Engineering (16 Credits)

(MVTC Level (3) (Course Number MVTC301)

CE106 Brick Laying, Sprouting and Gutter Construction (4 Points)

CE104 Construction Drawing (4 Points)

CE110 Building Construction (4 Points)

CE107 Water Supply (4 Points)

Diploma in Rural Development (32 Credits)

(MVTC Level (4) (Course Number MVTC401)

All units in Certificate in Rural Development (16 Credits)

CE111 Road Bridge and Irrigation System Construction (4 Points)

MVTC13PC9 Electrical Wiring (4 Points)

MVTC201Agriculture+MVTC202Animal Handling(4 Points)

MVTC204 Water Chemical Treatment (4 Points)

Advanced Diploma in Rural Development (60Credits)

(MVTC Level (5) (Course Number MVTC501)

All units in Diploma in Rural Development

RE002 Grid Connected Power System (4 Points) together with EE101 DC Circuits+EE112 AC Circuits

EE118 Electrical Supply System (4 Points)

ME108 Principle of Engine+MVTC13PC7 Engine Repairs (4 Points)

ME201 Hydraulics (4 Points)

MVTC13PC6 Welding+MVTC13PC5FittingMachining (4 Points)

MVTC209 Transport Logistics (4 Points)

Mgt101 Management Studies (4 Points)

ADVANCED STUDY

The candidates who have successfully completed Advanced Diploma of Rural Development Engineering can continue the study in Professional Diploma/ Bachelor of Applied Engineering/ Bachelor of Engineering Technology in Electrical Engineering or Civil Engineering or Mechanical Engineering or Mechatronics Engineering or Renewable Energy Engineering and Bachelor of Management Programs at St Clements University or STC Technological University.

LESSONS

MVTC301-Advanced Certificate in Rural Development (16 Credits)

CE104 Construction Drawing (4 Points)

www.iqytechnicalcollege.com/CECertDip.zip

VIDEO

Lesson 1

https://youtu.be/PLu5G9xNMtE

Lesson 2

https://youtu.be/g9tCFIR9HzE

Lesson 3

https://youtu.be/YhgQEaUbaxQ

Lesson 4

https://youtu.be/PK4g9r8sNhw

www.iqytechnicalcollege.com/CECertDip.zip Study CE104A

Exercises Download Link

www.highlightcomputer.com/DipCivilEnggAssignments.pdf

Page 4 to 7

CE110 Building Construction (4 Points)

www.iqytechnicalcollege.com/CECertDip.zip

VIDEOS

Lesson 1

https://youtu.be/luvLYjbuGWQ

Lesson 2

https://youtu.be/YFKdn_EJyX8

Lesson 3

https://youtu.be/HdpiNwnuos4

Lesson 4

https://youtu.be/uyg6AQc5WtE

Lesson 5

https://youtu.be/V7C5r7lQGdE

Lesson 6

https://youtu.be/TZCwHVCsj0g

Lesson 7

https://youtu.be/-984GNIF1b0

Lesson 8

https://youtu.be/yzm8vB6mXBk

Lesson 9

https://youtu.be/UTsxZ72d_c0

Lesson 10

https://youtu.be/o6nuV8oRYkg

Lesson 11

https://youtu.be/iV1dms6MYrQ

Lesson 12

https://youtu.be/Upl4_WzeDAE

Lesson 13

https://youtu.be/Eu2svu0k3kE

Lesson 14

https://youtu.be/nQW5bDDsS74

Lesson 15

https://youtu.be/kAqyl_hTyLg

Lesson 16

https://youtu.be/u7oWgrM3_3Y

Lesson 17

https://youtu.be/Hq4imm_U0W4

Lesson 18

https://youtu.be/rNMOTo5sZV4

Lesson 19

https://youtu.be/EUQzvKhYEhc

Lesson 20

https://youtu.be/LZINc2CNDfE

Lesson 21

https://youtu.be/tHwd9iVcZUQ

Lesson 22

https://youtu.be/az4_K8TpPE0

Lesson 23

https://youtu.be/lKzhftFn4PI

Lesson 24

https://youtu.be/A0x24Ue9YlE

EXERCISE ASSIGNMENTS

http://highlightcomputergroup4.zoomshare.com/files/pc3assignment.pdf

Certificate+Diploma Engineering (Civil)

To download, do not click the link, copy the link into address bar of the new browser page and then press "Enter"

www.iqytechnicalcollege.com/CECertDip.zip Study CE110

Exercises Download Link

www.highlightcomputer.com/DipCivilEnggAssignments.pdf

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Practical

PC 3-Certificate in Building Construction

http://www.highlightcomputer.com/PracticalCourses.htm#d

- **Practical Demonstration Videos(Youtube)**

Construction

http://youtu.be/oR3Z8ZKesJ0

http://youtu.be/a7UYxAY1BbA

http://youtu.be/_47yGGCJ4xk

Roofing

http://youtu.be/bTOhlWp2A3Y

http://youtu.be/myuUPoIHn9U

Scaffolding

http://youtu.be/xwvuwdVkFbg

Stair Construction

http://youtu.be/JB1i8NO2rcA

Stone Veneer Building

http://youtu.be/MmnbA8CrzS0

- **Written Lesson Notes in Myanmar+ English**

www.iqytechnicalcollege.com/CECertDip.zip

- Engineering Drawing—See CE104
- Building Construction--See CE106

PC3BuildingConstruction1.pdf (98.84MB)
http://www.filefactory.com/file/7hk1m392wbx9/n/PC3BuildingConstruction1.pdf

PC3BuildingConstruction2.pdf (94.66MB)
http://www.filefactory.com/file/tsalkeel0ib/n/PC3BuildingConstruction2.pdf

PC3BuildingConstruction3.pdf (91.29MB)
http://www.filefactory.com/file/1ml8ethr4s2x/n/PC3BuildingConstruction3.pdf

PC2PlumbingCourse4.pdf (105.12MB)
http://www.filefactory.com/file/497ogpe2zrqh/n/PC2PlumbingCourse4.pdf

PC3BuildingConstruction6.pdf (112.85MB)
http://www.filefactory.com/file/4n08wgevlb2j/n/PC3BuildingConstruction6.pdf

PC3BuildingConstruction7.pdf (59.92MB)
http://www.filefactory.com/file/33hfeo9xxtqz/n/PC3BuildingConstruction7.pdf

Textbooks in Myanmar Language

LMA)Building Estimating.pdf (25.51MB)
http://www.filefactory.com/file/9d7mwa6d18f/n/LMA)Building_Estimating.pdf

LMA)1-Drawing .pdf (33.6MB)
http://www.filefactory.com/file/4pnlm938i5pn/n/LMA)1-Drawing_.pdf

LMA)Building Engineering Handbook.pdf (9.41MB)
http://www.filefactory.com/file/5cuh5xbhs3q9/n/LMA)Building_Engineering_Handbook.pdf

EXERCISE ASSIGNMENTS

http://highlightcomputergroup4.zoomshare.com/files/pc3assignment.pdf

CE107 Water Supply (4 Points)

www.iqytechnicalcollege.com/CECertDip.zip

VIDEOS

Lesson 1

https://youtu.be/uet7br9U7vo

Lesson 2

https://youtu.be/EZOnxtgpW-g

Lesson 3

https://youtu.be/WZ3CPCnuSWY

Lesson 4

https://youtu.be/z9g9HwDpjyU

Lesson 5

https://youtu.be/sZziW7Jcx3c

Lesson 6

https://youtu.be/C1VjCawfeoY

Lesson 7

https://youtu.be/0ct_ZF52e1U

Lesson 8

https://youtu.be/JYc_cQQLE64

Lesson 9

https://youtu.be/ehZoz58Fq_8

Lesson 10

https://youtu.be/8UcHyDiYWP8

Lesson 11

https://youtu.be/Pw3BBwQw7hI

Lesson 12

https://youtu.be/mhoV6eeP9NM

Lesson 13

https://youtu.be/eJW-XMexfBk

Lesson 14

https://youtu.be/lF3E0PdWMYs

Lesson 15

https://youtu.be/g_d6CoaZ_TE

Lesson 16

https://youtu.be/fPMRvSVGXs0

Lesson 17

https://youtu.be/ttnzRICRQ9I

Lesson 18

https://youtu.be/2cgvnOfAMXY

Lesson 19

https://youtu.be/nrTWrs7euN0

Lesson 20

Notes

Certificate+Diploma Engineering (Civil)

To download, do not click the link, copy the link into address bar of the new browser page and then press "Enter"

www.iqytechnicalcollege.com/CECertDip.zip Study CE107

Exercises Download Link

www.highlightcomputer.com/DipCivilEnggAssignments.pdf

Page 14 to 15

Practical

PC 2-Certificate in Plumbing

http://www.highlightcomputer.com/PracticalCourses.htm#b

Pipe Fitting

http://youtu.be/oVo3lpKYdgU

http://youtu.be/BrMDSHEeL6k

http://youtu.be/uUxnWvaNTs0

Plumbing

http://youtu.be/gypTjOYnFw8

http://youtu.be/P1Qb_3kvsGM

http://youtu.be/MfjQfwzQ6mo

- **Written Lesson Notes in Myanmar+ English**

www.iqytechnicalcollege.com/CECertDip.zip

Plumbing-See CE107

PC2PlumbingCourse1.pdf (118.52MB)
http://www.filefactory.com/file/6rc20540jn0n/n/PC2PlumbingCourse1.pdf

PC2PlumbingCourse2.pdf (115.91MB)
http://www.filefactory.com/file/4vmhhj48bd9v/n/PC2PlumbingCourse2.pdf

PC2PlumbingCourse3.pdf (119.86MB)
http://www.filefactory.com/file/1ue18eu0xi93/n/PC2PlumbingCourse3.pdf

Textbooks in Myanmar Language

Cop_SEWERAGE_AND_SANITARY_WORKS_PART-3.pdf (5.14MB)
http://www.filefactory.com/file/40u4kzo5lipz/n/Cop_SEWERAGE_AND_SANITARY_WORKS_PART-3.pdf

Class Lesson +Audio

www.highlightcomputer.com/mvtcpracticalcourses.htm

See PC2

EXERCISE ASSIGNMENTS

http://highlightcomputergroup4.zoomshare.com/files/pc2assignment.pdf

CE106 Brick Laying, Sprouting and Gutter Construction (4 Points)

www.iqytechnicalcollege.com/CECertDip.zip

CE 106 Brick Laying

VIDEO

https://youtu.be/sKOTNcQXpRM

Notes

Certificate+Diploma Engineering (Civil)

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www.iqytechnicalcollege.com/CECertDip.zip Study CE106

Exercises Download Link

Practicals

PC 1-Certificate in Bricklaying & Masonry

- **Practical Demonstration Videos (Youtube)**
- Brick Laying
- http://youtu.be/HB9nAUQ402s
- http://youtu.be/UDrd2B7qRZQ
- http://youtu.be/fXiO50LKS_g
-
- Concrete Stair Building
- http://youtu.be/d_28wf-r_QM
- http://youtu.be/3Y9-C6392II
- http://youtu.be/z72SeHNEN-8

- **Written Lesson Notes in Myanmar+ English**

www.iqytechnicalcollege.com/CECertDip.zip

- Bricklaying-See CE106 Part ½

PC1BrickLayingCourse1.pdf (64.44MB)
http://www.filefactory.com/file/6ygg0q0eho3p/n/PC1BrickLayingCourse1.pdf

PC1BrickLayingCourse2.pdf (68.98MB)
http://www.filefactory.com/file/52n0xu67t8g7/n/PC1BrickLayingCourse2.pdf

PC1BrickLayingCourse3.pdf (55.84MB)
http://www.filefactory.com/file/4l9sj7lxu3bz/n/PC1BrickLayingCourse3.pdf

VIDEO

https://youtu.be/sKOTNcQXpRM

CE106 MVTC13PC 1-Certificate in Bricklaying & Masonry

www.iqytechnicalcollege.com/CECertDip.zip

Exercises Download Link

www.highlightcomputer.com/DipCivilEnggAssignments.pdf

- **Practical Demonstration Videos (Youtube)**
- Brick Laying
- http://youtu.be/HB9nAUQ402s
- http://youtu.be/UDrd2B7qRZQ
- http://youtu.be/fXiO50LKS_g
-
- Concrete Stair Building
- http://youtu.be/d_28wf-r_QM
- http://youtu.be/3Y9-C6392II
- http://youtu.be/z72SeHNEN-8

- **Written Lesson Notes in Myanmar+ English**

www.iqytechnicalcollege.com/CECertDip.zip

- Bricklaying-See CE106 Part ½

PC1BrickLayingCourse1.pdf (64.44MB)
http://www.filefactory.com/file/6ygg0q0eho3p/n/PC1BrickLayingCourse1.pdf

PC1BrickLayingCourse2.pdf (68.98MB)
http://www.filefactory.com/file/52n0xu67t8g7/n/PC1BrickLayingCourse2.pdf

PC1BrickLayingCourse3.pdf (55.84MB)
http://www.filefactory.com/file/4l9sj7lxu3bz/n/PC1BrickLayingCourse3.pdf

Class Lesson +Audio

www.highlightcomputer.com/mvtcpracticalcourses.htm

See PC1

EXERCISE ASSIGNMENTS

http://highlightcomputergroup4.zoomshare.com/files/pc1assignment.pdf

PC 4-Certificate in Gutter Construction

- **Practical Demonstration Videos (Youtube)**

Wall Guttering
http://youtu.be/b-Cdlrcjfis

- **Written Lesson Notes in Myanmar+ English**

www.iqytechnicalcollege.com/CECertDip.zip

Building Construction (Gutter Construction)--See CE106

PC4GutterConstruction1.pdf (47.37MB)
http://www.filefactory.com/file/4ahvhx48od87/n/PC4GutterConstruction1.pdf

PC4GutterConstruction2.pdf (42.73MB)
http://www.filefactory.com/file/57l6wpqkv5hb/n/PC4GutterConstruction2.pdf

PC4GutterConstruction3.pdf (40.51MB)
http://www.filefactory.com/file/4o9r0l99tuib/n/PC4GutterConstruction3.pdf

PC4GutterConstruction4.pdf (56.02MB)
http://www.filefactory.com/file/1851ziplmuwd/n/PC4GutterConstruction4.pdf

Contents	Unit Code
Spouting/ Guttering	Building Construction

Contents	Unit Code

Drainage pipe, Ventilation	Building services

EXERCISE ASSIGNMENTS

http://highlightcomputergroup4.zoomshare.com/files/pc4assignment.pdf

Class Lesson +Audio

www.highlightcomputer.com/mvtcpracticalcourses.htm

See PC4

MVTC401-Diploma in Rural Development (32 Credits)

CE111 Road Bridge and Irrigation System Construction (4 Points)

http://www.mongroupsydney1.com/AdvDipCivilEnggCE111114115.zip

VIDEOS

Civil Video1

Civil Video2

Civil Video3

VIDEO

Lesson 1 Stress and strain

http://youtu.be/u1LyoKSxOfQ

Lesson 2 Centre of mass

http://youtu.be/EY8rM9MSE1k

Lesson 3 Equilibrium

http://youtu.be/YtJmMWJIZqI

Lesson 4 Thermal expansion

http://youtu.be/EM0DmVWSv8k

Lesson 5 Strength of materials 1

http://youtu.be/j1CxD4gVGSk

Lesson 6 Structure

BAE621B1

http://youtu.be/TNM7KTiWtr0

Notes

www.highlightcomputer.com/CE114.pdf

www.highlightcomputer.com/CE115.pdf

www.highlightcomputer.com/CE115Part2.pdf

www.highlightcomputer.com/CE114StructurePart2Instruction.zip

Exercises Download Link

www.highlightcomputer.com/DipCivilEnggAssignments.pdf

Page 29 to 31

MVTC13PC9 Electrical Wiring (4 Points)

Electrical workshop

EE102	Basic Electrical Fitting & Wiring

EE103	Basic Electrical Drafting

LESSON VIDEO-MYANMAR+ENGLISH

Lesson 1

https://youtu.be/zSsvWcnfL8k

Lesson 2

https://youtu.be/qzymoBHwc8c

Lesson 3

https://youtu.be/iJ7I9WnyRc8

Lesson 4

https://youtu.be/DzIyM4QoG7w

Lesson 5

https://youtu.be/HVbn9ULdtf8

Lesson 6

https://youtu.be/5W-tozOR3r0

Lesson 7

https://youtu.be/b13dBzLfYCo

Lesson 8

https://youtu.be/ElnP0HKifa4

Lesson 9

https://youtu.be/2R7-LA9V0nY

LESSON VIDEO- ENGLISH

E001+002+005+008+033/ E101+102+105+108+137+G106

Page 128 to 136 of http://www.filefactory.com/file/cf9bf8f/n/Video_Lessons.pdf

www.highlightcomputer.com/Video Lessons.pdf

Electrical workshop

Electrical workshop Lesson 1 OHS.zip

(E101)

https://youtu.be/5A9bw-oxqfI

Electrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip

(E102)

http://youtu.be/aVKhYs9ga7Y

Electrical workshop Lesson 3 Mechanical fixing.zip

(E105)

http://youtu.be/s0SUSmL_e4E

Electrical workshop Lesson 4 Basic electrical wiring.zip

(E108)

http://youtu.be/gTjcE8ssuII

Electrical workshop Lesson 5 Wiring circuits.zip

(E107)

SUNP0007

http://youtu.be/m0dN0Wp6LCI

Electrical workshop Lesson 6 Electrical safety testing.zip

(E137)

http://youtu.be/LqRybJxm0tE

Electrical workshop Lesson 7 Testing insulation and polarity.zip

(E137)

http://youtu.be/9j63r3Wz6y8

http://youtu.be/e5MjQdEua-U

Electrical workshop Lesson 8 Testing lighting polarity.zip

LESSON

www.iqytechnicalcollege.com/EECertDipPart1a.zip

Do EE102

Exercises Download Link

www.highlightcomputer.com/DipElectEnggAssignments.pdf

EE107	Electrical Equipments/ MVTC 213-PC9Certificate in Electrical Wiring

LESSON VIDEO-MYANMAR+ENGLISH

Lesson 1

https://youtu.be/NmC1hRklQBo

Lesson 2

https://youtu.be/n6ru_boMLZ0

Lesson 3

https://youtu.be/iXId3EiVmCM

Lesson 4

https://youtu.be/LhKv6EuEjs4

Lesson 5

https://youtu.be/mMe9S6d8d3w

Lesson 6

https://youtu.be/m9jOXnOfY6c

Lesson 7

https://youtu.be/HL6vf9G9mFY

Lesson 8

https://youtu.be/lGOeWPQ-B0M

Lesson 9

https://youtu.be/Qgnz3mFUFB0

LESSON VIDEO- ENGLISH

www.iqytechnicalcollege.com/EECertDipPart1a.zip

Do EE107

Exercises Download Link

www.highlightcomputer.com/DipElectEnggAssignments.pdf

ENGLISH LESSONS

http://www.mongroupsydney1.com/youtubevideos.htm#a

See EE107

Maximum Demand Calculation & Cable Selection—Thanlyin TU- 5 Jan 2016 Lecture

www.mongroupsydney1.com/CableselectionPPT.pdf

AS3000

AS3008

Advanced Electrical Wiring

EE106	Advanced Electrical Wiring

LESSON VIDEO-MYANMAR+ENGLISH

Lesson 1

https://youtu.be/E5e-Uy6MHEM

Lesson 2

https://youtu.be/6LnOUyBWRTs

Lesson 3

https://youtu.be/jSVZIejrF_w

Lesson 4

https://youtu.be/SPGR6DnDt-M

Lesson 5

https://youtu.be/nT31m6zPcWg

Lesson 6

https://youtu.be/FFlXQ1rb4zA

https://youtu.be/H0BWho_JfLI

Lesson 7

https://youtu.be/qGbSbHZ21Yc

https://youtu.be/P2-k_NLqliU

Lesson 8

https://youtu.be/ZPl3-H_MUwA

https://youtu.be/UrJ9BRTYfoY

Lesson 9

Lesson

www.iqytechnicalcollege.com/EECertDipPart1a.zip

Do EE105+106

Exercises Download Link

www.highlightcomputer.com/DipElectEnggAssignments.pdf

- **Written Lesson Notes in Myanmar+ English**

PC9Wiring1.pdf (59.02MB)
http://www.filefactory.com/file/500298aqb20x/n/PC9Wiring1.pdf

PC9Wiring2.pdf (60.58MB)
http://www.filefactory.com/file/622ofias9rmn/n/PC9Wiring2.pdf

Textbooks in Myanmar Language

LMA)Fault Finding.pdf (34.92MB)
http://www.filefactory.com/file/2f6n1nnfkt2r/n/LMA)Fault_Finding.pdf

Product_Safety_by_AyeThwin.pdf (2.71MB)

http://www.filefactory.com/file/5hxjwqdke3k9/n/Product_Safety_by_AyeThwin.pdf

LMA)Home Wiring.pdf (9.37MB)
http://www.filefactory.com/file/2zd41tgh8943/n/LMA)Home_Wiring.pdf

LMA)Electrician Training.pdf (16.06MB)
http://www.filefactory.com/file/4dy3wuq3eqid/n/LMA)Electrician_Training.pdf

LMA)Electricity.pdf (2.69MB)
http://www.filefactory.com/file/5nvlyaglfauz/n/LMA)Electricity.pdf

LMA)AC to DC.pdf (13.13MB)
http://www.filefactory.com/file/28ruflw4tfnf/n/LMA)AC_to_DC.pdf

LMA)Electrical Knowledge).pdf (0.21MB)
http://www.filefactory.com/file/wx7xy00mrjt/n/LMA)Electrical_Knowledge_).pdf

Design_Electrical_Installation_Systems_by_YanKyawMoe.pdf (8.35MB)
http://www.filefactory.com/file/5gqiq9laiaah/n/Design_Electrical_Installation_Systems_by_YanKyawMoe.pdf

Electrical_Safety_Basic_ by_YanKyawMoe.pdf (1.35MB)
http://www.filefactory.com/file/6dtu2kn0gloh/n/Electrical_Safety_Basic__by_YanKyawMoe.pdf

EXERCISE ASSIGNMENTS

http://highlightcomputergroup4.zoomshare.com/files/pc9assignment.pdf

Class Lesson +Audio
www.highlightcomputer.com/mvtcpracticalcourses.htm
See PC9

MVTC201Agriculture+MVTC202Animal Handling(4 Points)

CERTIFICATE IN AGRICULTURE FOOD PRODUCTION (MVTC201)

www.highlightcomputer.com/AgricultureLesson.pdf

CERTIFICATE IN ANIMALS HANDLING (MVTC202)

www.highlightcomputer.com/Animal1.pdf

MVTC2-4 Water Chemical Treatment (4 Points)

CERTIFICATE IN LABORATORY WATER OPERATIONS (MVTC204)

www.highlightcomputer.com/WaterChemicalNotes.pdf

MVTC501 Advanced Diploma in Rural Development (60Credits)

RE002 Grid Connected Power System (4 Points) together with EE101 DC Circuits+EE112 AC Circuits

RE002- Grid Connected Photovoltaic Power Systems

www.iqytechnicalcollege.com/RE002.zip

EE101 Dc Circuits+EE112 AC Circuits

www.iqytechnicalcollege.com/EECertDipPart1a.zip

Exercises Download Link

www.highlightcomputer.com/DipElectEnggAssignments.pdf

VIDEOS

RE002- Grid Connected Photovoltaic Power Systems-Electrical

Day 14Part 1

Grid Connected Photovoltaic Power Systems 1(Myanmar+English)
Topics-Sun Geometry, Solar Cell Connection

Grid Connected Photovoltaic Power Systems 2(Myanmar+English)
Topics-Solar Electrical System Installation

Grid Connected Photovoltaic Power Systems 3(Myanmar+English)
Topics-Power Output from solar cell, Grid Connection

Grid Connected Photovoltaic Power Systems 4(Myanmar+English)
Topics-Solar Installation Inspection

Grid Connected Photovoltaic Power Systems 5(Myanmar+English)

Topics-Lightning & Surge Protection, Metering

RE002- Grid Connected Photovoltaic Power Systems-Electrical

www.highlightcomputer.com/Day 14-Part 1-RE002- Grid Connected Photovoltaic Power Systems-Electrical.zip

RE002 Grid Connected PV system

RE 002 Part 1
Sun geometry 1
Daily irradiance 2, 9
Power output calculation 29, 31, 36
Pen circuit voltage 37,40,41,42,44
Inverter diagram 45,46,48,52,53
Grid protection 55, 56, 57, 58, 59
Lightening surge protection 62, 63
Net metering 64, 67, 68, Inspection& testing
73 PV array location 81, 82, 89, 90
PV power system 92,93,
Typical arrays 97,98,100,102,105,
Grid connected inverter 134,135,136,137,139,146

RE002 Part 2
Economy 16,20,23

Mgt101 Management Studies (4 Points)

www.highlightcomputer.com/Mgt101.zip

MVTC13PC6 Welding+MVTC13PC5FittingMachining (4 Points)

PC 7-Certificate in Engine Operation& Basic Servicing

ME 108	Principle of Engines

LESSON

https://youtu.be/Hz4l27zBg9o

Notes

http://www.iqytechnicalcollege.com/MECertDipPart3.zip Study ME108

Exercises Download Link

www.highlightcomputer.com/DipMechEnggAssignments.pdf

Page 36 to 38

- **Practical Demonstration Videos (Youtube)**

Engine

Engine Operation

http://youtu.be/D2oRi_Ah3Qw

http://youtu.be/134v3KwjfOo

http://youtu.be/hX5JsvqQdYY

Engine Assembly

http://youtu.be/kSo7QLPWous

http://youtu.be/873FS9_69XQ

http://youtu.be/6Fe1XoZ2EsM

http://youtu.be/t4YVfT0zgjc

Engine Operation+ Maintenance+ Servicing

http://youtu.be/NdT6sC8vZoA

http://youtu.be/Y64KllvgFp0

http://youtu.be/UP1hjxjTRqc

Gear Box

http://youtu.be/aEpt5k9StnA

http://youtu.be/9cEqWWSFM6w

Hydraulic pump

http://youtu.be/0lUGOJovRr0

Ignition

http://youtu.be/fD3CeDKnDXQ

Power Steering

http:// youtu.be/aLlDMkLhtgQ

http://youtu.be/3xFRPInWxks

http://youtu.be/E3JNnE14kOQ

http:// youtu.be/Ijk7dFtc6iw

Steering

http://youtu.be/e_fUAoA8_Nk

http://youtu.be/8wwue7d8LsM

http://youtu.be/FUr6JIca0jM

http://youtu.be/AQupRDqe1hU

Oil Pump

http://youtu.be/yQFeOQPPtSI

http://youtu.be/F1LTndD89Eo

Pump assembly

http://youtu.be/9G0Qjf_aPp4

http://youtu.be/4318Rkolnwg

Compressor

http://youtu.be/gnHHTX2ybg0

http://youtu.be/t8s_LodB3t8

- **Written Lesson Notes in Myanmar+ English**

PC7Engine1.pdf (79.88MB)
http://www.filefactory.com/file/5t146pcis1jn/n/PC7Engine1.pdf

PC7Engine2.pdf (91.37MB)
http://www.filefactory.com/file/45wtnllk5o39/n/PC7Engine2.pdf

PC7Engine3.pdf (96.42MB)
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PC7Engine6.pdf (54.66MB)
http://www.filefactory.com/file/4hm9hi7tn2px/n/PC7Engine6.pdf

Textbooks in Myanmar Language

LMA)Automotive 1.pdf (63.9MB)
http://www.filefactory.com/file/4qi580wuylmb/n/LMA)Automotive_1.pdf

LMAAuto EFI .pdf (42.17MB)
http://www.filefactory.com/file/16c4rsn1p95/n/LMAAuto_EFI_.pdf

LMA)AutoElectricity.pdf (80.31MB)
http://www.filefactory.com/file/6dq2ozaud8bd/n/LMA)AutoElectricity.pdf

Class Lesson +Audio

www.highlightcomputer.com/mvtcpracticalcourses.htm

See PC7

EXERCISE ASSIGNMENTS

http://highlightcomputergroup4.zoomshare.com/files/pc7assignment.pdf

MVTC13PC6 Welding+MVTC13PC5FittingMachining (4 Points)

MTC13 PC 6-Certificate in Welding

- **Practical Demonstration Videos (Youtube)**

Welding
http://youtu.be/JQDXMNokDfk

http://youtu.be/Br1wBGZpqcc

- **Written Lesson Notes in Myanmar+ English**

PC6Welding1.pdf (102.44MB)
http://www.filefactory.com/file/3sxvo5m6rvid/n/PC6Welding1.pdf

PC6Welding2.pdf (104.91MB)
http://www.filefactory.com/file/5b4csdxdv7qn/n/PC6Welding2.pdf

PC6Welding3.pdf (110.26MB)
http://www.filefactory.com/file/20l12foljyb1/n/PC6Welding3.pdf

PC6Welding4.pdf (103.43MB)
http://www.filefactory.com/file/281u6fo318ml/n/PC6Welding4.pdf

PC6Welding5.pdf (101.34MB)
http://www.filefactory.com/file/30v2cgi6qnz9/n/PC6Welding5.pdf

EXERCISE ASSIGNMENTS

http://highlightcomputergroup4.zoomshare.com/files/pc6assignment.pdf

MTC13 PC 5-Certificate in Fitting & Machining

- **Practical Demonstration Videos (Youtube)**

Workshop

Drilling
http://youtu.be/7XHyRDCcPO0

http://youtu.be/xQgHiPkWUT4

Lathe
http://youtu.be/9ONbdNyK7Rk

Milling
http://youtu.be/T3yxKBJ_YQg

Shaping

http://youtu.be/aVvEmbzKpyY

http://youtu.be/SKG0SD05Jic

Written Lesson Notes in Myanmar+ English

PC5FittingMachining1.pdf (115.17MB)
http://www.filefactory.com/file/1rwkh7dormg5/n/PC5FittingMachining1.pdf

PC5FittingMachining2.pdf (111.92MB)
http://www.filefactory.com/file/781te7eb8jfd/n/PC5FittingMachining2.pdf

PC5FittingMachining3.pdf (120.08MB)
http://www.filefactory.com/file/otj4ail7lqh/n/PC5FittingMachining3.pdf

PC5FittingMachining4.pdf (115.86MB)
http://www.filefactory.com/file/1d6n0uadex53/n/PC5FittingMachining4.pdf

PC5FittingMachining5.pdf (125.88MB)
http://www.filefactory.com/file/7jqo3irrld3d/n/PC5FittingMachining5.pdf

PC5FittingMachining6.pdf (108.76MB)
http://www.filefactory.com/file/47xxwuitf2rl/n/PC5FittingMachining6.pdf

PC5FittingMachining7.pdf (51MB)
http://www.filefactory.com/file/vyx9cp95uzn/n/PC5FittingMachining7.pdf

Class Lesson +Audio

www.highlightcomputer.com/mvtcpracticalcourses.htm

See PC6

EXERCISE ASSIGNMENTS

http://highlightcomputergroup4.zoomshare.com/files/pc5assignment.pdf

MVTC209 Transport Logistics (4 Points)

www.highlightcomputer.com/LogisticNotes.pdf

ME201 Hydraulics (4 Points)

ME201 Fluid Mechanics

VIDEO

Lesson 1

https://youtu.be/EDL0FEp7tS0

Lesson 2

https://youtu.be/TfggYG-cSqc

Lesson 3

https://youtu.be/F8HYmLYHSQM

Notes

To download, do not click the link, copy the link into address bar of the new browser page and then press "Enter"

www.iqytechnicalcollege.com/CECertDip.zip Study CE107

ME201 Fluid Mechanics

www.iqytechnicalcollege.com/MECertDip.zip

Study ME201

Exercises Download Link

www.highlightcomputer.com/DipCivilEnggAssignments.pdf

Exercises Download Link

www.highlightcomputer.com/DipCivilEnggAssignments.pdf

www.iqytechnicalcollege.com/MECertDip.zip

Exercises Download Link

www.highlightcomputer.com/DipMechEnggAssignments.pdf

Mechanical Video

EE118 Electrical Supply System (4 Points)

EE118	Electrical Energy Supply System

Lesson 1

https://youtu.be/fsVjRrMj3fw

Lesson 2

https://youtu.be/og-n_8RzqQE

Lesson 3

https://youtu.be/wjAtPNwGKOQ

Lesson 4

https://youtu.be/wjAtPNwGKOQ

Lesson 5

https://youtu.be/-FNsW_NYtp8

Lesson 6

https://youtu.be/OHFFNtw9X8s

LESSON

www.iqytechnicalcollege.com/EECertDipPart1b.zip

Do EE118

Exercises Download Link

www.highlightcomputer.com/DipElectEnggAssignments.pdf

ENGLISH LESSONS

http://www.mongroupsydney1.com/youtubevideos.htm#a

See EE118

www.iqytechnicalcollege.com/EECertDipPart1b.zip

Exercises Download Link

www.highlightcomputer.com/DipElectEnggAssignments.pdf

ELECTRICAL VIDEOS

Electrical Video1

Electrical Video2

Electrical Video3

Electrical Video4

Electrical Video5

Electrical Video6

Electrical Video7

MVTC601-Professional Diploma of Rural Development Engineering

(Bachelor of Applied Engineering-Rural Development)

(St Clements University/ STC Technological University)

TOTAL 24 Units at 60 Credit points

BE General Discipline (Total 12 units)

(Each 2 Credit points)

YEAR 2+3

Professional Diploma in Engineering (Year 3)

www.iqytechnicalcollege.com/profdipengg.htm

1 BAE 401 Advanced Engineering Mathematics (2 pt)

2 BAE 402 Calculus (2 pt)

3 BAE 403 Engineering Mechanics (2 pt)

4 BAE 404 Engineering Materials & Thermodynamics (2 pt)

5 RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt)

6.RE003- Solar and Thermal Energy Systems (2 pt)

7.RE004- Energy Storage Systems(2 pt)

10 RE010-Engineering Materials(2 pt)

11 RE012a-Electrical Engineering Part 1(2 pt)

12RE016-Design& Management (2 pt)

Professional Diploma/BE (Rural Development)

(Total 12 units) (Each 2 Credit points)

YEAR 4+5

13.RE013-Electrical Machines (2 pt)
http://www.iqytechnicalcollege.com/profdipelectengg.htm#z6

14.BAE 501 Advanced Power Systems & Power Transmission Networks

http://www.iqytechnicalcollege.com/profdipelectengg.htm#z9

Rural Electrical Power Supply System

http://www.iqytechnicalcollege.com/BRDE-BAE501R Rural Power Supply.pdf

16.BAE 604 Telecommunication Engineering

http://www.iqytechnicalcollege.com/profdipelectengg.htm#z11

Rural Telecommunication System

http://www.iqytechnicalcollege.com/BRDE-BAE604R Rural Telecommunication.pdf

http://www.iqytechnicalcollege.com/BRDE-BAE 604 Part 2.pdf

17.BAE421 Building Construction Engineering (2 pt)

http://www.iqytechnicalcollege.com/profdipcivilengg.htm#z3

18. BAE422 Estimating (2 pt)

http://www.iqytechnicalcollege.com/profdipcivilengg.htm#z7

19. BAE423 Fluid Mechanics (2 pt)

http://www.iqytechnicalcollege.com/profdipcivilengg.htm#z6

20. BAE424 Reinforced Concrete (2 pt)

http://www.iqytechnicalcollege.com/profdipcivilengg.htm#z8

22. BAE 523A Environmental Engineering (2 pt)

http://www.iqytechnicalcollege.com/profdipcivilengg.htm#z10

23.BAE621 Structural Engineering (2 pt)

http://www.iqytechnicalcollege.com/profdipcivilengg.htm#z11

24.BAE511 Air-conditioning & Refrigeration (2 pt)
http://www.iqytechnicalcollege.com/profdipmechengg.htm#z8

Solar Powered Refrigeration for Rural Area

http://www.iqytechnicalcollege.com/BAE511R Solar Refrigeration.pdf

http://www.iqytechnicalcollege.com/BAE511RPart 2.pdf

Engineering Competency Demonstration Report

25.BAE608 Engineering Competency Demonstration Report (2 credit points)

Engineering Handbook Applications

www.iqytechnicalcollege.com/Form185engghandbookapplication.htm

Advanced Diploma in Information Technology (Course Outline)

	St Clements+ Highlight Course	Pt				Australian IT Diploma Course
	THEORETICAL TRAINING					
ICT 201	Organisational Behaviour	5			BSBWOR502B BSBMGT516A BSBSUS501A	Ensure team effectiveness Facilitate continuous improvement Develop workplace policy and procedures for sustainability
ICT 202	Information Systems Principles and Networking	5	BAE602		ICANWK516A ICANWK532A ICANWK614A	Determine best-fit topology for a local network Identify and resolve network problems Manage IT security
ICT 203	Information Systems, Analysis and Design	5	BAE602	2	ICAPRG602A ICAICT509A ICAICT603A ICAICT608A ICAPMG606A ICAICT713A	Manage the development of technical solutions from business specifications Gather data to identify business requirements Manage the use of appropriate development methodologies Interact with clients on a business level Manage IT project quality Manage IT services
ICT 204	Advanced Programming	5	BAE601		ICAPRG527A ICAPRG501A ICAPRG505A	Apply intermediate object-oriented language skills Apply advanced object-oriented language skills Build advanced user interface
ICT 205 ICT 206	Project Work WORK PERFORMANCE ASSESSMENT Total	5 30	BAE602	Core Core Core Core Core Core	ICAPRG506A ICAPMG601A ICAPMG602A ICAPMG603A ICAPMG604A ICAPMG605A	Manage copyright, ethics and privacy in an IT environment Establish IT project governance *Manage IT project initiation *Manage IT project planning *Manage IT project delivery *Manage IT project closure

32115 Advanced Diploma in General Engineering and Drafting (with Basic Business and IT)

For the students who have not passed Year 10/ University Entrance Examination.

Tutoring for the university entrance examination level subjects are concurrently provided

Unit number & Points	**Unit name**	Credit Points
EE201G	Mathematics	3 Pt
EE204G	Physics	3 Pt
ME 207G	Chemistry	3 Pt
EE101	DC Circuit Problems	3 Pt
EE102	Basic Electrical Fitting & Wiring /MVTC 213-PC9 Certificate in Electrical Wiring	3 Pt
EE103	Basic Electrical Drafting / MVTC 213-PC9Certificate in Electrical Wiring	3 Pt
EE105	Electrical Installation Design / MVTC 213-PC9Certificate in Electrical Wiring	3 Pt
EE110	Computer Applications	3 Pt
CE 106A	Detailed Construction & Building Construction Materials/MVTC213 PC1 Certificate in Brick Laying and Masonry	3 Pt
CE 104 A	Building Drawing/ MVTC213 PC1 Certificate in Brick Laying and Masonry	3 Pt
CE 110	Building Construction/MVTC213 PC3 Certificate in Building Construction	3 Pt
CE 107	Sanitation-and-Water-supply/MVTC213 PC2 Certificate in Plumbing	3 Pt
EE107	Electrical Equipment / MVTC 213-PC9Certificate in Electrical Wiring	3 Pt
ME103	Engineering Mechanics	3 Pt
ME 108	Principles of Engines/ PC 7-Certificate in Engine Operation & Basic Servicing	3 Pt
MVTC213 PC5	Certificate in Fitting and Machining	3 Pt
Mgt101G	Business and Management Principle	3 Pt
EE104	Electrical Equipment Safety Protection	3 Pt
Mgt207G	Business Letter Writing/ Business English	3 Pt
EE109	Electrical Control Circuits /MVTC213 PC15 Certificate in Basic Electronics	3 Pt
	Total	60 Pt

The students who complete this course can continue to the study in Advanced Diploma in Electrical/ Civil/ Mechanical Engineering Courses.

The students who do not want to do engineering can do only Mgt101G, Mgt207G and EE110 and then attend Advanced Diploma in Management (OR) Advanced Diploma in Information Technology.

Agricultural Engineering (67443321)

Professional Diploma in Agricultural Engineering
Bachelor of Agricultural Engineering

Preliminary Course

Diploma in General Engineering

(First 6 months)(Foundation Year)

FE101 Engineering Mathematics (for Mathematics 1)
FE102 Engineering Physics (For Physics 1)
FE103 Engineering Workshop
FE104 Engineering Drawing (For Technical Drawing)
FE105 Sustainability

Diploma in Agricultural Engineering

YEAR 1

6 credits/ unit x 5=30 Credits

AGRE101 Chemistry (For General Chemistry) (6 Credit)

To complete Chemistry

AGRE 102 Statistics (For Basic Statics) (6 Credit)

AGRE 103 Botanics (For Botanics) (6 Credit)

(To complete Science)

AGRE 104 Computer (For Computer) (6 Credit)

(To complete Software Design)

AGRE105 Culture Plants (for Morphology of Culture Plants 1+2) (6 Credit)

This subject consists of the following units taken from Australian Agricultural Training Package
AHCNSY306 Implement a propagation plan

AHCNSY306မျိုးပွါး ဖြန့်ဖြူးရေးအစီအစဉ်ကိုအကောင်အထည်ဖော်ပါ

V55

AHCORG403 Manage organic soil improvement

AHCORG403 အော်ဂဲနစ်မြေဆီလွှာတိုးတက်မှုကိုစီမံပါ

V56

AHCPCM301 Implement a plant nutrition program

AHCPCM301 အပင်အာဟာရအစီအစဉ်ကိုအကောင်အထည်ဖော်ပါ

V57

AHCPCM302 Provide information on plants and their culture

AHCPCM302 အပင်များနှင့်၎င်းတို့၏သဘာဝအကြောင်းသတင်းအချက်အလက်ပေးပါ

V58

AHCPCM304 Report on health and condition of trees

AHCPCM304 သစ်ပင်၏ကျန်းမာရေးနှင့်အခြေအနေ

V59

The students will need to do internet research for the activities given by teachers

Reference Textbook

The students will need to submit 20 pages study report by reading the reference book.

Advanced Diploma in Agricultural Engineering

YEAR 2

6 credits/ unit x 5=30 Credits

AGRE201 Analytical Chemistry (for Analytical Chemistry)(6 credits)

ECh11011	Engineering Chemistry I

The students will need to submit 20 pages study report by reading the reference book.

AGRE202 Organic Chemistry (for Organic Chemistry) (6 credits)

ChE 11001	Organic Chemistry

The students will need to submit 20 pages study report by reading the reference book.

AGRE203/CE115 Estimating (Civil Engineering) (6 credits)

BAE 644-Estimating

BAE 690-Mechanical Estimating

AGRE204 Meterology (6 credits)

Textbook

The students will need to submit 20 pages study report by reading the reference book.

AGRE205 General Civil Engineering for Agriculture (6 credits)

As part of Agricultural Engineering, the students are required to complete some units Diploma in Civil Engineering at Year 2

CE105 Hydraulics

CE-106 Brick Laying

CE107 Sanitation Water Supply

Professional Diploma in Agricultural Engineering Technology
Bachelor of Technology (Agricultural Engineering)

YEAR 3

6 credits/ unit x 5=30 Credits

AGRE301 Agriculture of Garden Plants (for Agriculture of Garden Plants) (6 credits)

This subject consists of the following units taken from Australian Agricultural Training Package

AHCPHT306 ဟင်းသီးဟင်းရွက်သီးနှံများစိုက်ပျိုးပါ

V63

AHCPHT307 - Prepare raw materials and compost feedstock

AHCPHT307 - ကုန်ကြမ်းများနှင့်မွေးမြူရေးပစ္စည်းများပြင်ဆင်ပါ

V64

AHCPHT310 Coordinate horticultural crop harvesting

AHCPHT310 ဟင်းသီးဟင်းရွက်သီးနှံရိတ်သိမ်းမှုညှိနှိုင်းဆောင်ရွက်သည်

V65

The students will need to do internet research for the activities given by teachers

Reference Textbook

- horti2008

from the following link

The students will need to submit 20 pages study report by reading the reference book.

AGRE302 Agriculture of Plantation Plants, Plant Feeding & Plant Protection for (Agriculture of Plantation Plants, Plant Feeding & Plant Protection) (6 credits)

This subject consists of the following units taken from Australian Agricultural Training Package

AHCPGD301 Implement a plant establishment program

AHCPGD301 စက်ရုံတည်ထောင်ခြင်းအစီအစဉ်ကိုအကောင်အထည်ဖော်ပါ

V60

AHCPHT303 Implement a post-harvest program

AHCPHT303 ရိတ်သိမ်းချိန်လွန်အစီအစဉ်ကိုအကောင်အထည်ဖော်ပါ

V61

AHCPHT305 Regulate crops

AHCPHT305 ကောက်ပဲသီးနှံများကိုထိန်းညှိပါ

V62

AHCPHT306 Establish horticultural crops

AHCPMG301 Control weeds

AHCPMG301 ထိန်းချုပ်မှုပေါင်းပင်

V66

AHCPMG302 Control plant pests, diseases and disorders

AHCPMG302 စက်ရုံပိုးမွှားများ၊ ရောဂါများနှင့်ရောဂါများကိုထိန်းချုပ်သည်

V67

AHCPMG305 Survey pests

AHCPMG305 ပိုးမွှားစစ်တမ်း

V68

AHCSS00027 Agricultural Chemical Skill Set.

AHCSS00027 စိုက်ပျိုးရေးဓာတုကျွမ်းကျင်မှုသတ်မှတ်။

V70

AHCSS00074 Agricultural Chemical Skill Set.

AHCSS00074 စိုက်ပျိုးရေးဓာတုကျွမ်းကျင်မှုအစုံ။

V71

AHCWHS301 Contribute to work health and safety processes
AHCWHS401 Maintain work health and safety processes.

AHCWHS401 အလုပ်ကျန်းမာရေးနှင့်ဘေးကင်းရေးလုပ်ငန်းစဉ်များကိုထိန်းသိမ်းပါ။

V72

The students will need to do internet research for the activities given by teachers

Reference Textbook

- AgriculturalProducts&YouPPT
- Gardening_pleasures

from the following link

The students will need to submit 20 pages study report by reading the reference book.

AGRE303 Agricultural Economy (for Agricultural Economy)

Read

- GlobalTrendsinAgriculture
- HumanNeeds&FoodProducts
- Conservation_on_private_land

from the following link

The students will need to submit 20 pages study report by reading the reference book.

AGRE303 Food Science and Technology (6 credits)

Read

- CareersinFoodSciencePPT
- HumanNeeds&FoodProducts
- Sustainable Agriculture

from the following link

Video

Read any two textbooks
from the following link

The students will need to submit 20 pages study report by reading the reference book.

AGRE304 Agricultural Ecology (6 credits)

Read

- Agriculture_and_Ecosystems-Lesson

from the following link

The students will need to submit 20 pages study report by reading the reference book.

AGRE305 Plant Physiology (6 credits)

Read

The students will need to submit 20 pages study report by reading the reference book.

Professional Diploma in Agricultural Engineering

Bachelor of Engineering (Agricultural Engineering)

YEAR 4

6 credits/ unit x 5=30 Credits

AGRE401 Agricultural Water and Drainage (6 Credits)

CPCPCM3022A Weld polyethylene and polypropylene pipes using fusion method

CPCPCM3023A Fabricate and install non-ferrous pressure piping

CPCPCM4012A Estimate and cost work

CPCPDR2021A Locate and clear blockages.

CPCPDR2022A - Install domestic treatment plants

CPCPDR2023A Maintain effluent disinfection systems

CPCPDR2024A Install stormwater and sub-soil drainage systems

CPCPDR2025A Drain work site

CPCPDR2026A Install prefabricated inspection openings and enclosures

CPCPDR3021A Plan layout of a residential sanitary drainage system

CPCPDR3022A - Install below ground sanitary drainage systems.

CPCPDR3023A - Install on-site disposal systems

CPCPFS3031A - Fabricate and install fire hydrant and hose reel systems

CPCPSN3025A Install pre-treatment facilities.

CPCPWT3020A - Connect and install storage tanks to a domestic water supply

CPCPWT3021A Set out and install water services.

CPCPWT3022A - Install and adjust water service controls and devices.

CPCPWT3023A - Install and commission water heating systems

CPCPWT3025A Install water pumpset

CPCPWT3027A Connect irrigation systems from drinking water supply

CPCPWT4011B Design and size heated and cold water services and systems.

RIICBS208D Conduct road maintenance operations

RIICBS303D - Conduct materials transfer vehicle operations

RIICCM201D - Carry out measurements and calculations

RIICCM202D – Identify, locate and protect underground services

RIICCM203D - Read and interpret plans and job specifications

RIICCM205D Carry out manual excavation

RIICCM206D - Support plant operations

RIICCM207D - Spread and compact materials manually

RIICCM208D Carry out basic levelling.

RIICCM209D Carry out concrete work.

RIICCM210D - Install trench support

RIICCM211D - Erect and dismantle temporary fencing and gates

RIICCM301D Construct and dismantle fences and gates

RIICPL301D Install water mains pipelines

RIICPL302D Install stormwater systems

RIICPL303D Install sewer pipelines

RIICRC203D Install sub-soil drainage.

RIICRC204D Install and maintain roadside fixtures.

RIICRC208D - Lay pipes

RIICRC301D Maintain drainage system

RIICRC304D Maintain sealed road

The students will need to submit 20 pages study report by viewing the reference videos

Read

- water_sampling
- Water sampling and analysis
- Surface water sampling methods and analysis

from the following link

(Note when you Unzip, some files need to be skipped)

The students will need to submit 20 pages study report by reading the reference book

AGRE402 General Zootechnics (6 Credits)

This subject consists of the following units taken from Australian Agricultural Training Package

Video

Read

- Animal Handling and Transport

from the following link

The students will need to submit 20 pages study report by reading the reference book

AGRE403 Agricultural Mechanisation

As part of this subject, the students will need to do some Mechanical Units

ME101 Applied Mechanics

ME108 Principle of Engine

ME103 Engineering Mechanics

ME104 Machine Principle

ME106 Electrical Principle

ME102+107 Engineering Thermodynamics

ME334 Airconditioning and Refrigeration

ME234 Wind Energy Conversion System

Read

- Agricultural_Process_Engineering

from the following link

The students will need to submit 20 pages study report by reading the reference book

AGRE403 Soil Knowledge (6 Credits)

AHCSOL401 Sample soils and interpret results

AHCSOL401 မြေဆီလွှာကိုနမူနာယူပြီးရလဒ်များကိုဘာသာပြန်ပါ

V69

Read

- Conservation_on_private_land

from the following link

The students will need to submit 20 pages study report by reading the reference book

AGRE404 Brand Management (6 Credits)

As part of this subject, the students will need to study some units from Diploma in Management Program

Study

- Mgt101 Management ,
- Mgr105 Quality Management

BAE608 Engineering Competency Demonstration Report (6 Credits)

The Institution of Professional Engineers Myanmar

AGTI to BE Conversion Program

AGTI

3 Years Attendance	2 Years Attendance
ENG601- Engineering Studies AGTI Certificate (60 Credits) **ENG602-Engineering Applications** Work Experience Curriculum Vitae (10 Credits) **ENG603-Engineering Practicals** Engineering Practice Report or Experience Portfolio (10 Credits) **BAE705 Engineering Competency Development** Other degree OR Appropriate Self Study Record Continuing Professional Development (10 Credits) Degree Level Study -Engineering Mathematics+Materials+Mechanic Seminars (4 days) BAE401 Engineering Mathematics BAE402 Calculus RE010 Engineering Materials BAE403 Engineering Mechanics (10 Credits) Degree Level Study -Engineering Management Seminars (2 days) BAE508 Management BAE605 Engineering Management (10 Credits) Degree Level Study -Engineering Subjects Seminars (4 days) 3 or 4 subjects at BE Final Level (10 Credits)	Enrol IQY Professional Diploma in Engineering Final Stage http://www.iqytechnicalcollege.com/enrolment.htm **THS/GTI-Equivalent /BE Bridging Program Enrolment**
Total 120 Credits	

Degree Level Study -Engineering Subjects Seminars (4 days)

Electrical Power

BAE 501 Advanced Power Systems & Power Transmission Networks

BAE 506 Power System Stability & Protection

RE013-Electrical Machines

Electronics

RE014-Electronics Control

BAE 604 Telecommunication Engineering

BAE 601 Computer Programming

Or other subjects by discussing with trainer

Civil

BAE621 Structural Engineering

BAE421 Building Construction Engineering

BAE623 Surveying & Traffic Engineering

Or other subjects by discussing with trainer

Mechanical

BAE613 Mechanical Instrumentation Process

BAE311 Plant Engineering

BAE614 Machine Design

Or other subjects by discussing with trainer

ICT

ICT 403 Professional Programming

ICT 405 Professional Practice (1) Network

BAE408 Analog & Digital Electronics

Or other subjects by discussing with trainer

Contact

Secretary -U Ye Htet Naing Phone- 09 43064330

Training Officer (Academic)-Dr Thwin Thu Lynn (IQY)- Ph-09785048872

PART (1) AUSTRALIAN ELECTRICIAN TESTING SYSTEM

Electrician Capstone unit.pdf

http://www.filefactory.com/file/c392ae1/n/Electrician_Capstone_unit.pdf

Electrician Capstone Test Old Questions

Electrician Capstone Unit Study Guide.zip

http://www.filefactory.com/file/c4bbf1b/n/Electrician_Capstone_Unit_Study_Guide.zip

Electrician Licensing Requirements.zip

SubstationEntry.zip

Construction ElectricalSafety.zip

InserviceTesting.zip

Stage 1 Part 1.zip

http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip

PART (2) AUSTRALIAN ELECTRICAL INSTALLATION STANDARDS & RULES

Wiring Rule AS3000

Wiring Rule AS3008

Wiring Rule AS3012

Wiring Rule AS3017

Wiring Rule AS3760

Wiring Rule AS3019

Electrical Practice for Construction Work

Competent person testing & tagging

PART (3) ELECTRICAL TRADE LESSONS

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEE001B Apply OHS practices in the workplace	UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip

	http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	(2) Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face session Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase
10	**UEENEEE001** OHSWorkbook.zip

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEE002B Dismantle, assemble and fabricate electrotechnology components	**UEENEEE102A Fabricate, assemble and dismantle utilities industry components**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip

	http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	(2) Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face session Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase
10	Fixing Equipments E002_E005.zip

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEE004B Solve problems in multiple path d.c. circuits	**UEENEEE104A Solve problems in d.c. circuits**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video- http://www.filefactory.com/file/cf8739b/n/E003+E004.zip
6	(2) Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase
10	DC_Circuit_E003_E004.zip

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEE005B Fix and secure equipment	**UEENEEE105A Fix and secure electrotechnology equipment**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip

	http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip **http://uploading.com/files/f213323b/Electrical%2Bworkshop.zip/**
6	(2) Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase
10	Fixing Equipments E002_E005.zip

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEE007B **Use drawings, diagrams, schedules and manuals**	**UEENEEE107A** **Use drawings, diagrams, schedules, standards, codes and specifications**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	ElectricalDrawing1.zip , ElectricalDrawing2.zip ,ElectricalDrawing3.pdf ,GeneralDrawing1.zip ,GeneralDrawing2.zip
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	ElectricalDrawing1.zip , ElectricalDrawing2.zip ,ElectricalDrawing3.pdf ,GeneralDrawing1.zip ,GeneralDrawing2.zip
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson

	2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	(2) Click HERE to download other Exercises
7	Stage_1_Electrical_workshop_practicals.pdf
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face session

	Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase
10	ElectricalDrawing1.zip , ElectricalDrawing2.zip , ElectricalDrawing3.pdf , GeneralDrawing1.zip , GeneralDrawing2.zip

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEE008B Lay wiring/cabling and terminate accessories for extra-low voltage circuits	**UEENEEE108A Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip

	http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip **http://uploading.com/files/f213323b/Electrical%2Bworkshop.zip/**
6	2) Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face session Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase
10	Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring_1Wiring_E033_E008_2Wiring_E033_E008

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEE033B Document occupational hazards and risks in electrical work	**UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip

	http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip **http://uploading.com/files/f213323b/Electrical%2Bworkshop.zip/**
6	2) Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face session Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase
10	Electrical_safe_working.zip NREL_Disconnect_Reconnect.zip

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
	UEENEEG106A Terminate cables, cords and accessories for low voltage circuits	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	
2	
3	
4	ELV_Cable_termination
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip

	http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip **http://uploading.com/files/f213323b/Electrical%2Bworkshop.zip/**
6	
7	Only practical assessment in class
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	Attend face to face class http://www.filefactory.com/file/2f8e3fph9trr/n/G106_G033_Practical_zip
10	ELV_Cable_termination Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008 ElectricalDrawing1.zip ElectricalDrawing2.zip ElectricalDrawing3.pdf

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
	UEENEEG063A Arrange circuits, control and protection for general electrical installations	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	
2	
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4	
5	**Electrical wiring + Electrical Installation requirement** G003+G004+G007 Lesson 1 Electrical installation protection.zip http://www.filefactory.com/file/c35d2f2/n/G003_G004_G007_Lesson_1_Electrical_installation_protection.zip G003+G004+G007 Lesson 2 Electrical system safety.zip

http://www.filefactory.com/file/cf937ac/n/G003_G004_G007_Lesson_2_Electrical_system_safety.zip

G003+G004+G007 Lesson 3 Heating+Cable ckt protection exercise.zip

http://www.filefactory.com/file/c0abfe8/n/G003_G004_G007_Lesson_3_Heating_Cable_ckt_protection_exercise.zip

G003+G004+G007 Lesson 4 Wiring system.zip

http://www.filefactory.com/file/cf939f0/n/G003_G004_G007_Lesson_4_Wiring_system.zip

G003+G004+G007 Lesson 5 Hazardous area electrical system.zip

http://www.filefactory.com/file/cf94af8/n/G003_G004_G007_Lesson_5_Hazardous_area_electrical_system.zip

G003+G004+G007 Lesson 6 Overload protection RCD.zip

http://www.filefactory.com/file/cf94bcf/n/G003_G004_G007_Lesson_6_Overload_protection_RCD.zip

	G003+G004+G007 Lesson 7 RCD + Metering.zip http://www.filefactory.com/file/cf94cae/n/G003_G004_G007_Lesson_7_RCD_Metering.zip G003+G004+G007 Lesson 8 Switch board installation.zip http://www.filefactory.com/file/cf94c40/n/G003_G004_G007_Lesson_8_Switch_board_installation.zip G003+G004+G007 Lesson 9 Cable selection+Maximum demand.zip http://www.filefactory.com/file/cf94dbb/n/G003_G004_G007_Lesson_9_Cable_selection_Maximum_demand.zip G003+G004+G007 Lesson 10 Electrical installation safety testing.zip http://www.filefactory.com/file/cf94123/n/G003_G004_G007_Lesson_10_Electrical_installation_safety_testing.zip
6	
7	**EE07 & EE011 units mapping for Theory study & Exercises** Only face to face class assessment
8	Only face to face class assessment
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend face to face class PRACTICAL

	Workshop 2+3 WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip **OTHER PRACTICALS** ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf
10	Construction ElectricalSafety.zip InserviceTesting.zip Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEG007A Select wiring systems and cables for low voltage general electrical installations	**UEENEEG107A Select wiring systems and cables for low voltage general electrical installations**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	AS3000-2007Overview.zip AS3000_AS3008TablesExtract.zip WiringRules.zip **Part (1) Study the following notes** _Installation_Requirement_1-A.zip Installation_Requirement_1-B.zip

	Installation_Requirement_2-A.zip Installation_Requirement_2-B.zip Stage_2_Wiring.zip
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	AS3000-2007Overview.zip AS3000_AS3008TablesExtract.zip WiringRules.zip **Part (1) Study the following notes** Installation_Requirement_1-A.zip Installation_Requirement_1-B.zip Installation_Requirement_2-A.zip Installation_Requirement_2-B.zip Stage_2_Wiring.zip
5	**G007** G007 Lesson 1 AS3000 Wiring rule overview.zip http://www.filefactory.com/file/cf94220/n/G007_Lesson_1_AS3000_Wiring_rule_overview.zip G007 Lesson 2 Maximum Demand calculation.zip

	http://www.filefactory.com/file/cf9456f/n/G007_Lesson_2_Maximum_Demand_calculation.zip G007 Lesson 3 Cable selection.zip http://www.filefactory.com/file/cf9465c/n/G007_Lesson_3_Cable_selection.zip G007 Lesson 4 Cable voltage drop calculation.zip http://www.filefactory.com/file/cf9479e/n/G007_Lesson_4_Cable_voltage_drop_calculation.zip G007 Lesson 5 Derating of cable part 1.zip http://www.filefactory.com/file/cf95acb/n/G007_Lesson_5_Derating_of_cable_part_1.zip G007 Lesson 6 Derating of cable part 2.zip http://www.filefactory.com/file/cf95a6b/n/G007_Lesson_6_Derating_of_cable_part_2.zip G007 Lesson 7 Derating of cable for HRC fuse protection.zip http://www.filefactory.com/file/cf95cd7/n/G007_Lesson_7_Derating_of_cable_for_HRC_fuse_protection.zip G007 Lesson 8 Final subcircuit fault loop impedance.zip http://www.filefactory.com/file/cf95dd1/n/G007_Lesson_8_Final_subcircuit_fault_loop_impedance.zip **Electrical Installation requirement**
6	Click HERE to download the other exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**

	Do the assignments from the following book & submit the assignment (1) Cable_Installation.zip Do the assignments from the following book & submit the assignment (2) Regulatory_Requirement.zip
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** PRACTICAL **Workshop 2+3** WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip **OTHER PRACTICALS** ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf
10	

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEG003A Install low voltage wiring and accessories	**UEENEEG103A Install low voltage wiring and accessories**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip **G103+104 Notes+Lessons** http://www.filefactory.com/file/2bg8qift6nzh/n/G103_G104_zip
4	Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008

	2Wiring_E033_E008 Fixing Equipments E002_E005.zip Lighting.zip E_trade_1.zip E_trade_2.zip E_trade_3.zip E_trade_4.zip G008_General_Notes_1.zip G008_General_Notes_2.zip Hazard_Identification.zip G003_G004_Wiring_2_Part_1.zip G003_G004_Wiring_2_Part_2.zip Cable_CktProt_E_Accessories.zip Cable_Conduit_E_Accessories.zip Elect_Installation_Protection_Method_Devices.zip Elect_Installation_Requirement_1.zip

	Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_2.zip ElectricInstallationDesign.zip ElectSystSafety1.zip ElectSystSafety2.zip FireProtHeatingTestingEarthing.zip GeneralWiring.zip HazardLightingPanel.zip PanelRCDWireSpecial_Installation.zip ProtectionMethods.zip
5	**Electrical wiring + Electrical Installation requirement** G003+G004+G007 Lesson 1 Electrical installation protection.zip http://www.filefactory.com/file/c35d2f2/n/G003_G004_G007_Lesson_1_Electrical_installation_protection.zip G003+G004+G007 Lesson 2 Electrical system safety.zip

http://www.filefactory.com/file/cf937ac/n/G003_G004_G007_Lesson_2_Electrical_system_safety.zip

G003+G004+G007 Lesson 3 Heating+Cable ckt protection exercise.zip

http://www.filefactory.com/file/c0abfe8/n/G003_G004_G007_Lesson_3_Heating_Cable_ckt_protection_exercise.zip

G003+G004+G007 Lesson 4 Wiring system.zip

http://www.filefactory.com/file/cf939f0/n/G003_G004_G007_Lesson_4_Wiring_system.zip

G003+G004+G007 Lesson 5 Hazardous area electrical system.zip

http://www.filefactory.com/file/cf94af8/n/G003_G004_G007_Lesson_5_Hazardous_area_electrical_system.zip

G003+G004+G007 Lesson 6 Overload protection RCD.zip

http://www.filefactory.com/file/cf94bcf/n/G003_G004_G007_Lesson_6_Overload_protection_RCD.zip

	G003+G004+G007 Lesson 7 RCD + Metering.zip http://www.filefactory.com/file/cf94cae/n/G003_G004_G007_Lesson_7_RCD_Metering.zip G003+G004+G007 Lesson 8 Switch board installation.zip http://www.filefactory.com/file/cf94c40/n/G003_G004_G007_Lesson_8_Switch_board_installation.zip G003+G004+G007 Lesson 9 Cable selection+Maximum demand.zip http://www.filefactory.com/file/cf94dbb/n/G003_G004_G007_Lesson_9_Cable_selection_Maximum_demand.zip G003+G004+G007 Lesson 10 Electrical installation safety testing.zip http://www.filefactory.com/file/cf94123/n/G003_G004_G007_Lesson_10_Electrical_installation_safety_testing.zip
6	Click HERE to download the other exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises** Assessment Read the above notes files and do the assignments for the following tutorial file. WiringPracticals.zip G003G004Tutorial.zip
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face class PRACTICAL http://www.filefactory.com/file/54l4d5rif1z3/n/Advanced_Wiring_Part_1_zip

	Advanced Wiring Part 1+2—G103 http://www.filefactory.com/file/1xb18xg1gaz1/n/Advanced_Wiring_Part_1_and_2_zip **Electrical Installation Safety Testing** http://www.filefactory.com/file/5mv9s6dx174h/n/Electrical_Installation_Safety_Testing_zip **Workshop 2+3** WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip **OTHER PRACTICALS** ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf
10	Power Distribution Trade Power_Distribution_Trade.zip Metering Metering.zip

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
	UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1		
2		
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip **G033** http://www.filefactory.com/file/1b2utxydvcx7/n/G033_zip	
4	Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008	

	Fixing Equipments E002_E005.zip Lighting.zip E_trade_1.zip E_trade_2.zip E_trade_3.zip E_trade_4.zip G008_General_Notes_1.zip G008_General_Notes_2.zip Hazard_Identification.zip G003_G004_Wiring_2_Part_1.zip G003_G004_Wiring_2_Part_2.zip Cable_CktProt_E_Accessories.zip Cable_Conduit_E_Accessories.zip Elect_Installation_Protection_Method_Devices.zip Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_1.zip	

	Elect_Installation_Requirement_2.zip ElectricInstallationDesign.zip ElectSystSafety1.zip ElectSystSafety2.zip FireProtHeatingTestingEarthing.zip GeneralWiring.zip HazardLightingPanel.zip PanelRCDWireSpecial_Installation.zip ProtectionMethods.zip	
5	**Electrical wiring + Electrical Installation requirement** G003+G004+G007 Lesson 1 Electrical installation protection.zip http://www.filefactory.com/file/c35d2f2/n/G003_G004_G007_Lesson_1_Electrical_installation_protection.zip G003+G004+G007 Lesson 2 Electrical system safety.zip	

http://www.filefactory.com/file/cf937ac/n/G003_G004_G007_Lesson_2_Electrical_system_safety.zip

G003+G004+G007 Lesson 3 Heating+Cable ckt protection exercise.zip

http://www.filefactory.com/file/c0abfe8/n/G003_G004_G007_Lesson_3_Heating_Cable_ckt_protection_exercise.zip

G003+G004+G007 Lesson 4 Wiring system.zip

http://www.filefactory.com/file/cf939f0/n/G003_G004_G007_Lesson_4_Wiring_system.zip

G003+G004+G007 Lesson 5 Hazardous area electrical system.zip

http://www.filefactory.com/file/cf94af8/n/G003_G004_G007_Lesson_5_Hazardous_area_electrical_system.zip

G003+G004+G007 Lesson 6 Overload protection RCD.zip

http://www.filefactory.com/file/cf94bcf/n/G003_G004_G007_Lesson_6_Overload_protection_RCD.zip

G003+G004+G007 Lesson 7 RCD + Metering.zip

	http://www.filefactory.com/file/cf94cae/n/G003_G004_G007_Lesson_7_RCD_Metering.zip G003+G004+G007 Lesson 8 Switch board installation.zip http://www.filefactory.com/file/cf94c40/n/G003_G004_G007_Lesson_8_Switch_board_installation.zip G003+G004+G007 Lesson 9 Cable selection+Maximum demand.zip http://www.filefactory.com/file/cf94dbb/n/G003_G004_G007_Lesson_9_Cable_selection_Maximum_demand.zip G003+G004+G007 Lesson 10 Electrical installation safety testing.zip http://www.filefactory.com/file/cf94123/n/G003_G004_G007_Lesson_10_Electrical_installation_safety_testing.zip **Electrical wiring + Electrical Installation requirement**	
6	Click HERE to download the other exercises	
7	**EE07 & EE011 units mapping for Theory study & Exercises** Assessment Read the above notes files and do the assignments for the following tutorial file. WiringPracticals.zip G003G004Tutorial.zip	
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf	

9	Attend the face to face class http://www.filefactory.com/file/2f8e3fph9trr/n/G106_G033_Practical_zip	
10	Power Distribution Trade Power_Distribution_Trade.zip Metering Metering.zip PRACTICAL **Workshop 2+3** WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip **OTHER PRACTICALS** ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf	

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
	UEENEEG108A Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	
2	
3	
4	G008_General_Notes_1.zip G008_General_Notes_2.zip MachineControlCkt1.zip MachineControlCkt2.zip MachineControlCkt3.zip

	MachineRepair1.zip MachineRepair2.zip MachineRepair3.zip ProcessControlCkt1.zip ProcessControlCkt2.zip ProcessControlCkt3.zip ESI_8_Insulation_1 ESI_8_Insulation_2 ESI_9.1_Protection_Relay_Construction ESI_9.2Test_Equipment ESI_33.1_Power_Quality_Concept ESI_33.2_Harmonic_in_capacitor ESI_33.3_Harmoniceffect_on_machines ESI_3.1_HV_Measurement_Cable_Test.zip ESI_3.2_Magnetic_measurement.zip ESI_3.3_Power_measurement.zip

	ESI_3.4_RLC_measurement_1.zip ESI_3.4_RLC_measurement_2.zip ESI_3.4_RLC_measurement_3.zip ESI_3.5_Digital_equipments.zip ESI_3.6_V.A.W_meter.zip ESI_3.7T_and_M.zip ESI_3.8_Thermography.zip ESI_4_11_Power_Transformer.zip ESI_5_Machinery_Installation.zip ESI_7_Drawing_Switching_Diagram.zip ESI_7_Electrical_Installation_Design.zip ESI10.1_HV_equipments.zip ESI10.2_Substation_equipments.zip ESI12_14_Harmonic.zip ESI12_14_Reactor.zip ESI12_14_Syn_Motor_Generator.zip ESI_13_Voltage_regulation_devices.zip
5	**Fault finding + Electrical control equipments G008+G009**

	G008+G009 Lesson 1 AC Machine+AC motor control.zip http://www.filefactory.com/file/c0a683c/n/G008_G009_Lesson_1_AC_Machine_AC_motor_control.zip G008+G009 Lesson 2 Synchronous machine+DC machine+Transformer.zip http://www.filefactory.com/file/c0a7ad3/n/G008+G009_Lesson_2_Synchronous_machine+DC_machine+Transformer.zip
6	
7	**EE07 & EE011 units mapping for Theory study & Exercises** Class test
8	PRACTICAL **Workshop 2+3** WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip **OTHER PRACTICALS** ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face class
10	

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
	UEENEEG109A Develop and connect electrical control circuits	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	
2	
3	
4	G009.zip G043_G045_7762AF_Notes G043_G045_Part_1_7762AF_Notes H085_66_I006_Note_1_Sensors 1 H085_66_I006_Note_2_Sensors_2 H085_66_I006_Note_3_Sensors_3 H085_66_I006_Note_4_Control_Concept1

	H085_66_I006_Note_5_Control_Concept2 H085_66_I006_Note_6_Electronics_Signal H085_66_I006_Note_8_Process_Control_1 H085_66_I006_Note_9_Process_Control_2 ProcessControlCkt1.zip ProcessControlCkt2.zip ProcessControlCkt3.zip H026_3_Ph_Power_Control_Electronics_1 H026_3_Ph_Power_Control_Electronics_2 H026_3_Ph_Power_Control_Electronics_3 H026_3_Ph_Power_Control_Electronics_4 ESI_27_1_Relay_Principle_1.zip ESI_27_1_Relay_Principle_2.zip ESI_27_1_Relay_Principle_3.zip ESI_27.2_Element_of_Relay_Protection.zip ESI12_14_Syn_Motor_Generator.zip ESI_19.1_Computer_Control.zip

	ESI_19.4_Turbine_Control.zip ESI_22.2_Voltage_surge_control.zip
5	**Fault finding + Electrical control equipments G008+G009** G008+G009 Lesson 1 AC Machine+AC motor control.zip http://www.filefactory.com/file/c0a683c/n/G008_G009_Lesson_1_AC_Machine_AC_motor_control.zip G008+G009 Lesson 2 Synchronous machine+DC machine+Transformer.zip http://www.filefactory.com/file/c0a7ad3/n/G008+G009_Lesson_2_Synchronous_machine+DC_machine+Transformer.zip
6	
7	**EE07 & EE011 units mapping for Theory study & Exercises** Concurrently assessed with G043+G045+I006 & relevant EE011 units
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend face to face session PRACTICAL **Workshop 2+3** WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip

	WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip **OTHER PRACTICALS** ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf
10	

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEG001B Solve problems in electromagnetic circuits	**UEENEEG101A Solve problems in electromagnetic devices and related circuits**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below

Study Option 1	Study Option 1	EE011 = EE07 + Additional
See 1 below	See 3 below	
Study Option 2	**Study Option 2**	
See 2 below	See 4 below	

1	http://www.filefactory.com/file/c0b6601/n/Elect_Fundamental_E029_G012_G001_G002_G060.zip
2	G001_Part_1 G001_Part_2
3	http://www.filefactory.com/file/c0b6601/n/Elect_Fundamental_E029_G012_G001_G002_G060.zip
4	G001_Part_1 G001_Part_2
5	**Electro-magnetism** http://www.filefactory.com/file/cf9b277/n/G001.zip
6	Click HERE to download the other exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Practicals Work performance and practical instruction **Work performance + Practical Instruction Back up** Click HERE to download practicals
10	

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEG002B Solve problems in low voltage a.c. circuits	**UEENEEG102A** Solve problems in low voltage a.c. circuits	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below

Study Option 1	Study Option 1	
See 1 below	See 3 below	EE011 = EE07 + Additional
Study Option 2	**Study Option 2**	
See 2 below	See 4 below	

1	http://www.filefactory.com/file/c0b6601/n/Elect_Fundamental_E029_G012_G001_G002_G060.zip
2	G002
3	http://www.filefactory.com/file/c0b6601/n/Elect_Fundamental_E029_G012_G001_G002_G060.zip
4	G002
5	G002 Lesson 1 Sine wave and it's values.zip http://www.filefactory.com/file/c0ad22c/n/G002_Lesson_1_Sine_wave_and_it_s_values.zip G002_Lesson_2_AC_RL+RC_Series_circuits.zip http://www.filefactory.com/file/c0ad67c/n/G002_Lesson_2_AC_RL+RC_Series_circuits.zip G002 Lesson 3 AC Series RLC circuits.zip http://www.filefactory.com/file/c0ad35d/n/G002_Lesson_3_AC_Series_RLC_circuits.zip G002 Lesson 4 AC Parallel circuits.zip http://www.filefactory.com/file/c0ad4f3/n/G002_Lesson_4_AC_Parallel_circuits.zip G002 Lesson 5 Three phase circuit basics.zip http://www.filefactory.com/file/c0ad468/n/G002_Lesson_5_Three_phase_circuit_basics.zip G002 Lesson 6 Balanced three phase circuit.zip http://www.filefactory.com/file/c0ad5d9/n/G002_Lesson_6_Balanced_three_phase_circuit.zip
6	Click HERE to download the other exercises

7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**E07 & EE011 units mapping for Theory study & Exercises** Practicals Work performance and practical instruction **Work performance + Practical Instruction Back up** Click HERE to download practicals
10	

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEE011C Manage risk in electrotechnology activities	**UEENEEE011C Manage risk in electrotechnology activities**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b7b84/n/Project_specification_planning_management_Risk_OHS.G069_G070_E071_E011_E017.zip
2	RiskManagement.pdf E011E017note1 E011E017note2 E011_E017Notes3.zip
3	ttp://www.filefactory.com/file/c0b7b84/n/Project_specification_planning_management_Risk_OHS.G069_G070_E071_E011_E017.zip
4	RiskManagement.pdf

	E011E017note1 E011E017note2 E011_E017Notes3.zip
5	Video- http://www.filefactory.com/file/cf8750b/n/E011+E017.zip
6	Click HERE to download the other exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises** E011_E017_Assignment
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**E07 & EE011 units mapping for Theory study & Exercises**
10	

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEE071B Write specifications for electrical engineering projects	**UEENEEE071B Write specifications for electrical engineering projects**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b7b84/n/Project_specification_planning_management_Risk_OHS.G069_G070_E071_E011_E017.zip
2	Class Teaching Notes +Flexible study Notes References for Electrical Contracting & Estimating Est Estimating1 Estimating2 Estimating3 Week 1-Overview of NSW Electrical Service Rules E071DesiE071HVOverheadConductors_Wk2-3_.zip

	E071LVOverheadConductor_Wk4-5_.zip E071Hazard_Identification_Wk6_.zip E071General_Wiring_Wk7-8_.zip E071UGCableSpecification_Wk9-10-11_.zip E071TelecomDatacom_Wk12_.zip E071Switching_Wk13_.zip E071DesignStdOHDevelopment_Wk14-16_.zip (2B) Flexible study Notes References for Specifications Service_Rule_1 Service_Rule_2 Service_Rule_3 6-ElectricalDrawing 12-Specifications 13-BSpecifications 14-Specifications
3	http://www.filefactory.com/file/c0b7b84/n/Project_specification_planning_management_Risk_OHS.G069_G070_E071_E011_E017.zip
4	As in 2

5	**Project Specifications+ Project Planning +Project Management (1)** E071+G069+G070Part1.zip http://www.filefactory.com/file/cf91ac4/n/E071_G069_G070Part1.zip **Project Specifications+ Project Planning +Project Management (2)** E071+G069+G070Part2.zip http://www.filefactory.com/file/cf91da1/n/E071+G069+G070Part2.zip **Project Specifications+ Project Planning +Project Management (1)** **http://uploading.com/files/6d26b85c/E071%252BG069%252BG070Part%2B1.zip/** **Project Specifications+ Project Planning +Project Management (2)** http://uploading.com/files/bmf8bf9f/E071%252BG069%252BG070Part%2B2.zip/
6	Click HERE to download the other exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises** E071_MEM09004_Tutorial E071_MEM09004_Tutorial_Mod.zip Propose_strategies_to_identify_client_needs_1.pdf
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises**
10	Costing_Quotation.zip

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
MEM09004B Perform electrical/electronic detail drafting	**UEENEEG179A Develop detailed electrical drawings**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

EE011 = EE07 + Additional

1	
2	ElectricalDrawing1.zip ElectricalDrawing2.zip ElectricalDrawing3.pdf GeneralDrawing1.zip GeneralDrawing2.zip ElectricInstallationDesign.zip ElectSystSafety1.zip ElectSystSafety2.zip

	FireProtHeatingTestingEarthing.zip GeneralWiring.zip HazardLightingPanel.zip PanelRCDWireSpecial_Installation.zip 6-ElectricalDrawing 12-Specifications 13-BSpecifications 14-Specifications Propose_strategies_to_identify_client_needs_1.pdf 1WiringInstallationDrawing 7MachineDriveSystems 8PowerElectronicsDevices AutoCAD_2D_3D_Lessons Symbol A Symbol B Symbol C Symbol D Symbol E

	Symbol F Symbol G
3	
4	As in 2
5	
6	E071_MEM09004_Tutorial E071_MEM09004_Tutorial_Mod.zip MEM09004-Electronics Drawing Electronics_Drawing.zip
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**E07 & EE011 units mapping for Theory study & Exercises**
10	E071DesiE071HVOverheadConductors_Wk2-3_.zip 6-ElectricalDrawing

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEI006B Solve problems in process controllers, transmitters and converters	**UEENEEI120A Provide solutions to problems in industrial control systems**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	Amplifier+Power Supply+Digital H011+H012+H013.zip http://www.filefactory.com/file/c0b64d1/n/Amplifier_Power_Supply_Digital_H011_H012_H013.zip Process control-I006+I008+I020.zip http://www.filefactory.com/file/c0b7d9d/n/Process_control-I006_I008_I020.zip
2	AnalogDigitalSignalConditioning H085_66_I006_Note_1_Sensors 1 H085_66_I006_Note_2_Sensors_2 H085_66_I006_Note_3_Sensors_3 H085_66_I006_Note_4_Control_Concept1

	H085_66_I006_Note_5_Control_Concept2 H085_66_I006_Note_6_Electronics_Signal H085_66_I006_Note_8_Process_Control_1 H085_66_I006_Note_9_Process_Control_2 PID.zip
3	**I020 Part 2** http://www.filefactory.com/file/7338x8vlddrj/n/I020_Part_2_zip
4	As 2
5	**Process Control+ Digital Electronics +Signal Processing** I006 Lesson 1 Process control Intro+Signal conditioning.zip http://www.filefactory.com/file/c0b2798/n/I006_Lesson_1_Process_control_Intro+Signal_conditioning.zip I006 Lesson 2 Op-amp in process control.zip http://www.filefactory.com/file/c0b25d5/n/I006_Lesson_2_Op-amp_in_process_control.zip I006 Lesson 3 Pnuematic.zip http://www.filefactory.com/file/c0b145a/n/I006_Lesson_3_Pnuematic.zip I006 Lesson 3+H012 Lesson 1 Digital principle+Logic gates.zip http://www.filefactory.com/file/c0b1488/n/I006_Lesson_3_H012_Lesson_1_Digital_principle_Logic_gates.zip I006 Lesson 4+H012 Lesson 2 Equivalent gate.zip http://www.filefactory.com/file/c0b16a2/n/I006_Lesson_4_H012_Lesson_2_Equivalent_gate.zip

I006 Lesson 5+H012 Lesson 3 Number system.zip

http://www.filefactory.com/file/c0b544e/n/I006_Lesson_5_H012_Lesson_3_Number_system.zip

I006 Lesson 6+H012 Lesson 4 Binary substraction.zip

http://www.filefactory.com/file/c0b55f2/n/I006_Lesson_6_H012_Lesson_4_Binary_substraction.zip

I006 Lesson 7+H012 Lesson 5 Endecoder+Decoder.zip

http://www.filefactory.com/file/c0b18c8/n/I006_Lesson_7_H012_Lesson_5_Endecoder_Decoder.zip

I006 Lesson 8+H012 Lesson 6 SR Flipflop.zip

http://www.filefactory.com/file/c27e44a/n/I006_Lesson_8_H012_Lesson_6_SR_Flipflop.zip

I006 Lesson 9+H012 Lesson 7 Shift register+Data latches.zip

http://www.filefactory.com/file/c0b1885/n/I006_Lesson_9_H012_Lesson_7_Shift_register_Data_latches.zip

I006 Lesson 10+H012 Lesson 8 Counter.zip

http://www.filefactory.com/file/c0b194c/n/I006_Lesson_10_H012_Lesson_8_Counter.zip

I006 Lesson 11+H012 Lesson 9 Display.zip

http://www.filefactory.com/file/c0b2ad0/n/I006_Lesson_11_H012_Lesson_9_Display.zip

I006 Lesson 12 Digital signal processing.zip

http://www.filefactory.com/file/c0b2b27/n/I006_Lesson_12_Digital_signal_processing.zip

I006 Lesson 13 Digital control design.zip

http://www.filefactory.com/file/c0b2cf2/n/I006_Lesson_13_Digital_control_design.zip

I006 Lesson 14 DAC.zip

http://www.filefactory.com/file/c0b2d00/n/I006_Lesson_14_DAC.zip

I006 Lesson 15 Ramp AD.zip

http://www.filefactory.com/file/c0b2d7d/n/I006_Lesson_15_Ramp_AD.zip

I006 Lesson 16 Sample and hold.zip

http://www.filefactory.com/file/c0b2548/n/I006_Lesson_16_Sample_and_hold.zip

I006 Lesson 17 Micro processor compatible DAC.zip

http://www.filefactory.com/file/c0b260b/n/I006_Lesson_17_Micro_processor_compatible_DAC.zip

I006 Lesson 18 Thermocouple.zip

http://www.filefactory.com/file/c0b2e67/n/I006_Lesson_18_Thermocouple.zip

I006 Lesson 19 Temperature measurement.zip

http://www.filefactory.com/file/c0b2fdd/n/I006_Lesson_19_Temperature_measurement.zip

I006 Lesson 20 Proportional mode.zip
http://www.filefactory.com/file/c0b2f26/n/I006_Lesson_20_Proportional_mode.zip

I006 Lesson 21 Industrial transducer.zip

http://www.filefactory.com/file/c0b2f95/n/I006_Lesson_21_Industrial_transducer.zip

I006 Lesson 22 Force measurement.zip

http://www.filefactory.com/file/c0b2673/n/I006_Lesson_22_Force_measurement.zip

I006 Lesson 23 Open loop control+Proportional control.zip

http://www.filefactory.com/file/c0b56d5/n/I006_Lesson_23_Open_loop_control_Proportional_control.zip

I006 Lesson 24 Closed loop control.zip

http://www.filefactory.com/file/c0b21e4/n/I006_Lesson_24_Closed_loop_control.zip

I006 Lesson 25 Electronics signal in process control.zip

http://www.filefactory.com/file/c0b220c/n/I006_Lesson_25_Electronics_signal_in_process_control.zip

I006 Lesson 26 PCM.zip

http://www.filefactory.com/file/c0b2255/n/I006_Lesson_26_PCM.zip

I006 Lesson 27 Control loop.zip
http://www.filefactory.com/file/c0b23bd/n/I006_Lesson_27_Control_loop.zip

I006 Lesson 28 Strain gauge+Piezo electric.zip

http://www.filefactory.com/file/c0b230b/n/I006_Lesson_28_Strain_gauge_Piezo_electric.zip

I006 Lesson 29 Light transducer.zip

http://www.filefactory.com/file/c0b237b/n/I006_Lesson_29_Light_transducer.zip

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Process Control+ Digital Electronics +Signal Processing

	PID Control I020 Part 1 http://www.filefactory.com/file/1xg2gz7knp3z/n/I020_Part_1_zip **I020 Part 2** http://www.filefactory.com/file/7338x8vlddrj/n/I020_Part_2_zip
6	Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises** I006_Tutorials.zip
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Practicals Work performance and practical instruction Click HERE to download practicals
10	PLC_Textbook1 PLC_Textbook2 PLC_Textbook3 PLC 6487E.zip PLC References User_Manuals.zip TRILOGI5-purdue SetupTL6Edu Installation Installation_Instruction F_Nano-Product_Sheets

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
	UEENEEG006A Solve problems in single and three phase low voltage machines	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	
2	
3	Elect Machine-G043+G044+G045.zip http://www.filefactory.com/file/c0b6668/n/Elect_Machine-G043_G044_G045.zip
4	G043_G045_7762AF_Notes G043_G045_Part_1_7762AF_Notes
5	
6	Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises** G015_G046_G040_G043_G045_G042Tutorials
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Practicals Work performance and practical instruction Click HERE to download practicals

10	ESI12_14_Syn_Motor_Generator.zip ESI_13_Voltage_regulation_devices.zip ESI_19.4_Turbine_Control.zip ESI_19.2_Generator_Control_Load_Flow.zip ESI_19.3_Generator_.zip Synchronous Generator **2.Un intentional islanding in distribution grids** **2.Un intentional islanding in distribution grids-Part 2** **2.Un intentional islanding in distribution grids-Part 3** **2.Distribution Network 1** **2.Distribution Network 2** **2.Distribution Network 3** **3.Prime mover characteristics** **3. Requirement of mechanical thermal plant in Co-generation** **3.Study for mechanical thermal plant**

3. Generator Paralleling

Synchronous Generator Operation (Power System Operation)

Lesson 1

Lesson 3

Power System Operation (General aspect) Reading 1

Power System Operation (General aspect) Reading 2

Power System Operation (General aspect) Reading 3

Power System Operation (General aspect) Reading 4

Power System Operation (General aspect) Reading 5

Power System Operation (General aspect) Reading

MACHINE CONTROL

MachineControlCkt1.zip

MachineControlCkt2.zip

MachineControlCkt3.zip

Motor control 2

Motor control 3

Motor control 4

Motor control 5

Motor control 6

Motor control 7

Motor control 8

Motor control 9

Motor control 10

Motor control 11

Motor control 12

Motor control 13

Motor control 14

Motor control 15

Motor control 16

8273Z Variable Speed Drives

Lesson 1-Part a Part b Part c Part d

Lesson 2 Part a Part b Part c

Lesson 3 Part a Part b

Lesson 4 Part a Part b

Lesson 5 Part a Part b

Lesson 6 Part a Part b

Lesson 7 Part a Part b

Lesson 8 Part a Part b

Lesson 9 Part a Part b

Lesson 10 Part a Part b

Lesson 11 Part a Part b

Lesson 12 Part a Part b

Lesson 13 Part a Part b

Lesson 14 Part a Part b

Lesson 15 Part a Part b

Lesson 16 Part a Part b Part c

Lesson 17 Part a Part b Part c

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEH025B Provide solutions to single phase electronic power control problems	**UEENEEI148A Solve problems in single phase electronic power control circuits**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	Power Electronics -H025+H026.zip http://www.filefactory.com/file/c0b6857/n/Power_Electronics_-H025_H026.zip
2	H025_Operational_Amplifier H026_3_Ph_Power_Control_Electronics_1 H026_3_Ph_Power_Control_Electronics_2

	H026_3_Ph_Power_Control_Electronics_3 H026_3_Ph_Power_Control_Electronics_4
3	As 1
4	As 2
5	**Operational_amplifier+ single phase power control equipments** H025_Lesson_1-Differential_Amplifier.zip http://www.filefactory.com/file/c20fef9/n/H025_Lesson_1-Differential_Amplifier.zip H025_Lesson_2-Comparator.zip http://www.filefactory.com/file/c0b072e/n/H025_Lesson_2-Comparator.zip H025 Lesson 3-Timer IC.zip http://www.filefactory.com/file/c0b077e/n/H025_Lesson_3-Timer_IC.zip H025 Lesson 4-Op Amp Circuit 1 & 2.zip http://www.filefactory.com/file/c0b08c8/n/H025_Lesson_4-Op_Amp_Circuit_1_2.zip H025 Lesson 5-Op amp characteristics+Band widthe compensation.zip http://www.filefactory.com/file/c0b09da/n/H025_Lesson_5-Op_amp_characteristics_Band_widthe_compensation.zip

H025 Lesson 6-Op amp diode characteristics.zip

http://www.filefactory.com/file/c0b09e1/n/H025_Lesson_6-Op_amp_diode_characteristics.zip

H025 Lesson 7-Sine & square wave oscillators.zip

http://www.filefactory.com/file/c0b090a/n/H025_Lesson_7-Sine_square_wave_oscillators.zip

H025 Lesson 8-Op amp ckt-Integrator+Differentiator.zip

http://www.filefactory.com/file/c0b0909/n/H025_Lesson_8-Op_amp_ckt-Integrator_Differentiator.zip

H025 Lesson 9-Active filter.zip

http://www.filefactory.com/file/c0b0916/n/H025_Lesson_9-Active_filter.zip

H025 Lesson 10-Multistage Op amp ckt.zip

http://www.filefactory.com/file/c0b0948/n/H025_Lesson_10-Multistage_Op_amp_ckt.zip

H025 Lesson 11-Transducers.zip

http://www.filefactory.com/file/c0b0978/n/H025_Lesson_11-Transducers.zip

	H025 Lesson 12-Introduction to control.zip http://www.filefactory.com/file/c0b0986/n/H025_Lesson_12-Introduction_to_control.zip **Operational_amplifier+ single phase power control equipments** **http://uploading.com/files/983aee66/H025.zip/**
6	Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises** Electronics_H025_Tutorials
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**E07 & EE011 units mapping for Theory study & Exercises** Practicals Work performance and practical instruction Click HERE to download practicals
10	

Study Guide EE07 & EE011

What to study			Which exercises to do			What practical to do	Resources
Main study		Additional study For EE07+EE011 +Video	Main exercise		Additional exercises for EE011		
EE07 Unit	EE011 Unit		Study Option (1) EE-07	Study Option (2) EE-07			
UEENEEH026B Provide solutions to polyphase electronic power control problems	**UEENEEI149A Solve problems in polyphase electronic power control circuits**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**	EE011 = EE07 + Additional					
See 1 below	See 3 below						
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	Power Electronics -H025+H026.zip http://www.filefactory.com/file/c0b6857/n/Power_Electronics_-H025_H026.zip
2	H026_3_Ph_Power_Control_Electronics_1 H026_3_Ph_Power_Control_Electronics_2 H026_3_Ph_Power_Control_Electronics_3 H026_3_Ph_Power_Control_Electronics_4
3	As 1
4	As 2
5	**Three phase power control equipments** H026 Lesson 1-Single &Three phase power control.zip

	http://www.filefactory.com/file/c0b1ac9/n/H026_Lesson_1-Single_Three_phase_power_control.zip H026 Lesson 2-Solid state switching devices.zip http://www.filefactory.com/file/c0b1af2/n/H026_Lesson_2-Solid_state_switching_devices.zip H026 Lesson 3-Inverter Converter.zip http://www.filefactory.com/file/c0b1a59/n/H026_Lesson_3-Inverter_Converter.zip H026 Lesson 4-Power Diodes.zip http://www.filefactory.com/file/c0b1a8f/n/H026_Lesson_4-Power_Diodes.zip H026 Lesson 5-AC Motor speed control.zip http://www.filefactory.com/file/c0b1ba7/n/H026_Lesson_5-AC_Motor_speed_control.zip H026 Lesson 6-Current fed inverter.zip http://www.filefactory.com/file/c0b1b0d/n/H026_Lesson_6-Current_fed_inverter.zip
6	Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Practicals Work performance and practical instruction Click HERE to download practicals
10	

NOTE

The link in the yellow shaded cell can be accessed to download the notes if the direct link is not working

Syllabus_and_Engineers_Australia_Competency.zip

Electrical diploma with electrician_licensing_program.zip

Study the following units before you study any electrical units

Electrician Licensing Requirements.zip

SubstationEntry.zip

Construction ElectricalSafety.zip

InserviceTesting.zip

RECOGNITION OF PRIOR LEARNING (RPL)

Download the following references if you want to apply for RPL

RPL Policy

Mutal Recognition/ Enrolment adjustment credit)(previous study)

108_prev_stud_1_1_.pdf

Yellow Form 102 Enrolment Adjustment Credit (Recognition of Prior Learning)

102_yellow_rpl_1_1_.pdf

Gap training & assessment record for RPL Word File PDF File

STAGE 1

E001+E002+E007+E008+E005+E033+C002+C003

UEENEEE001		Apply OHS practices in the work place
UEENEEE002		Dismantle, assemble and fabricate electrotechnology components
UEENEEE005		Fix and secure equipment
UEENEEE007		Use drawings, diagrams, schedules and manuals
UEENEEE008		Lay wiring/cabling and terminate accessories for extra-low voltage circuits
UEENEEE033		Document occupational hazards and risks in electrical work

Stage 1 Part 1.zip

http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip

E002+E005+E007+E008+E033-Wiring

Electrical safe working

1Wiring_E033_E008_

2Wiring_E033_E008_

Circuit safety

ConstructionElectricalSafety

DC_Circuit_E003_E004

E002_E005

Bachelor of Technology

Entry Requirement

- Completion of Advanced Diploma in Electro-mechanical and Construction Engineering

ADEMC201-Sustainability and Electrical Practice

ADEMC202-Engineering Practice

ADEMC203-Design and Technology

ADEMC204-General Electrical Engineering

ADEMC205-General Civil Engineering and Construction

ADEMC206-General Mechanical Engineering

ADEMC207-Mathematics,Physics and Chemistry

ADEMC208-Engineering Materials

ADEMC209-Engineering Management

ADMEC210-Workshop Practice and Safety

Completion Requirement , one of the following ways

1. Completion of BE (Special Program) Form 109 Subjects

BAE401 Engineering Mathematics
BAE402 Calculus
RE010 Engineering Materials
BAE403 Engineering Mechanics (10 Credits)

Additional Unit
BAE404 Engineering Thermodynamics

RE505- Green Building Design (3 credits)

RE016A-Design & Management (4 credits)

BAE 523A Environmental Engineering (1 credit)

RE003- Solar and Thermal Energy Systems (1 credit)

RE004- Energy Storage Systems (1 credit)

2 Selection of Examination (or) Assignment -Electrical, Civil, Mechanical, ICT based on Electrical, Civil, Mechanical, ICT subjects in Advanced Diploma in Electro-mechanical and Construction Engineering to determine the discipline of BTech degree.

3 Work experience submission to confer Bachelor of Technology (Special) degree.

4 Completion of Year 3 in BE Program for the students who completed Advanced Diploma in Electrical Engineering, Advanced Diploma in Civil Engineering, Advanced Diploma in Mechanical Engineering, Advanced Diploma in ICT Engineering,

Assignment Submission , one of the following ways

1. Messenger—to be advised
2. E mail —iqytechnicalcollege@gmail.com
3. Personal No 307(B) Thura 2 Street, 9 Ward, South Okkalapa , Yangon on Saturday, Sunday

BACHELOR OF APPLIED ENGINEERING (ELECTRICAL)

Pre-requisite

Advanced Diploma in Electrical Engineering

ASSESSMENT

The learning and assessment system involves two parts

(1) Completion of the course works- submission of the assignments (Theory/ Practical/ Calculations) for the competency units of the subject
(Grading—Complete or Incomplete)

(2) Completion of the course works- submission of the assignments Theory/ Practical/ Calculations) for the over all knowledge of the subject
(Grading—Complete or Incomplete)

(3) Sitting the final test for the subject by either online or paper based test- -Grading—In accordance with St Clements University Higher Education School-Niue Students Handbook.

The following is the list of the subjects and competency units

BACHELOR OF APPLIED ENGINEERING (ELECTRICAL)

Subjects	Points	Competency Units
BAE 401 Advanced Engineering Mathematics	9	Maths 301 Introduction to Complex Variables (1 pt) Maths 302 Elementary Linear Algebra (1 pt) Maths 401 Continuous Distributions (1 pt) Maths 402 Discrete Distributions (1 pt) Maths 403 Engineering Mathematics (1 pt) Maths 501 Introduction to Probability(1 pt) Maths 501 Linear Algebra & Matrices (1 pt) Maths 502 Finite Difference Methods for Partial Differential Equations & Mathematical Modelling (1 pt) Maths 601 Random Variables (1 pt)
BAE 402 Calculus	3	Maths 304 Integration and Differential Equations. (1 pt) Maths 403 Second Order Ordinary Differential Equations

		(1 pt) Maths 303 Engineering Mathematics (1 pt)
BAE 403 Engineering Mechanics	1	ME 301 Applied Mathematics (1 pt)
BAE 404 Engineering Materials & Thermodynamics	3	ME 334 Engineering Thermodynamics (1 pt) ME 434 Wind Turbines (1 pt) ME 634 Pneumatics (1 pt)
BAE 405 Advanced Circuit Analysis	3	EE 301 Electrical Circuits (1 pt) EE 303 Engineering Circuit Analysis (1 pt) EE 404 Electrical Measurement (1 pt)
BAE 406 Electro-mechanics	2	EE 502 Electrical Machines (1 pt) ME 301 Machine Principle (1 pt)
BAE 407 Advanced Electro-magnetics Field & Materials	1	EE 407 Electromagnetism (1 pt)
BAE 408 Analogue & Digital Electronics	5	EE 403 Introduction to Electronic Engineering (1 pt) EE 524 Power Electronics & Applied Electronics (1 pt) EE 405 Digital System (1 pt) EE 526 Digital Signal Processing (1 pt) EE 527 Digital Image Processing 1/ 2 (1 pt)
BAE 501 Advanced Power Systems & Power Transmission Networks	3	EE 512 Power System (1 pt) EE 302 Power System Technology (Optional) EE 402 Electrical Power (1 pt) EE 513 Power Transmission and Distribution Lines (1 pt)
BAE 502 Linear System	1	EE 304 Computer Mathematics (1 pt)
BAE 503 Control System	4	EE 601 Non Linear Control Applications (1 pt) EE 601 Control Engineering , Feedback and Control System , P ID_Control (1 pt) EE 624 Process Control (1 pt)

		ME 534 Numerical Control Part 1 / 2 (1 pt)
BAE 504 Power System Analysis	1	EE 614 Power System Analysis
BAE 505 Power System Optimization	1	EE 613 Power System Optimization
BAE 506 Power System Stability & Protection	**2**	EE 615 Power System Stability & Power Quality (1 pt) EE 616 Power System Protection (1 pt)
BAE 507 Electro-mechanical Energy Conversion	2	EE 602 Motor Control Electronics (1 pt) ME 434 Mechtronics & Robotics (1 pt)
BAE 508 Industrial Engineering & Industrial Management	1	Mgt 501 Basic Management & Communication Skills (1 pt)
BAE 601 Computer Programming	3	IT 401 Object Oriented Programming (1 pt) IT 402 Structured Programming (1 pt) IT 403 Visual Basic Programming (1 pt
BAE 602 Computer Network	1	ICT 202 Information Systems Principles and Networking (1 pt)
BAE 603 Software Engineering	3	ICT 106 Software Engineering (1 pt) ICT 203 Information Systems, Analysis and Design (1 pt) EE 626 Nano Technology (1 pt)
BAE 604 Telecommunication Engineering	2	EE 525 Data Communication (1 pt) EE 603 Electronics Telecommunication (1 pt)
BAE 605 Engineering Management	5	Mgt 502 Operation Management (1 pt) Mgt 503 Production & Operation Management (1 pt) Mgt 504 Project Management (1 pt) Mgt 505 Quality Management and Manufacturing Engineering (1 pt) Mgt 506 Strategic Financial Management (1 pt)

BAE 606 Building Service Electrical & Mechanical Engineering	2	EE 617 Building Electrical and Mechanical System (1 pt) ME 334 Airconditioning and Refrigeration (1 pt) CE 301 Building Construction (Optional) CE 301 Conceise Hydroulics (Optional)
BAE 607 Radio Wave Propagation & Microwave Techniques	2	EE 625 Radio Wave Propagation (1 Pt) EE 626 Microwave Technique (1pt)
Total Credit points	60	

STAGE (1)DIPLOMA IN CIVIL ENGINEERING (Each 2.5 Credits) (30 Pt)

CE 101 Mathematics

CE 102 Physics

CE 103 Basic Surveying

CE 104 Fluid Dynamics

CE 105 Hydraulic

CE 106 Hydrology

CE 107 Sanitation-and-Water-supply

CE 108 Electrical Principle

CE 109 Energy Efficient Building Design

CE 110 Building Construction

CE 111 Engineering Mechanics

ME 301 Applied Mathematics

Sequence of study

CE 101, CE 102, CE 111, CE 110, ME 301

CE 103, CE 104, CE 105, CE 106, CE 107, CE 108

CE 109

STAGE (2) BASIC MECHANICAL ENGINEERING (30 Pt) (Each unit has 1 point)

Maths 101 Engineering Mathematics (1 pt)

Maths 301 Introductory Finite Difference Methods-for-partial differential equations(1 pt)

Maths 302 Elementary-Linear-Algebra(1 pt)

Maths 403 Engineering-Mathematics(1 pt)

Maths 501 Linear Algebra (1 pt)

Maths 303 Introductory Finite Volume Methods-for- partial differential equations(1 pt)

ME 103 Engineering Mechanics (2pt)

ME 101 Applied Mathematics (1 pt)

ME 107 Heat Transfer (1 pt)

ME 306 Theory-of-waves-in-materials (1 pt)

ME 102 Engineering Thermodynamics (2pt)

ME 234 Wind Turbines (1 pt)

ME 634 Pneumatics (1 pt)

ME 105 Electrical Principle (1 pt)

ME 106 Electrical Circuits (1 pt)

ME 104 Machine Principle (2 pt)

ME 304 Introduction to Nonlinearity-in-control-systems (1 pt)

ME 203 Control Engineering (1 pt)

EE 624 Process Control (2 pt)

ME 534 Numerical Control (1 pt)

ME 434 Mechtronics-Robotics (1 pt)

Mgt 501 Basic Management (1 pt)

EE 617 Building Electrical and Mechanical System Part 1 (2 pt)

ME 334 Airconditioning and Refrigeration (2 pt)

STAGE (3) BASIC ELECTRICAL & ELECTRONICS ENGINEERING (18 Pt)

Files--Certificate in Electrical Engineering, Diploma in Electrical Engineering, Advanced Diploma in Electrical Engineering , see the following contents

EE101 DC Circuit Problems

EE102 Basic Electrical Fitting & Wiring

EE103 Basic Electrical Drafting

EE104 Electrical Equipments Safety Protection

EE105 Electrical Installation Design

EE107 Electrical Equipments

EE106 Advanced Electrical Wiring

EE108 Electrical Fault Finding

EE109 Electrical Control Circuits

EE111 Electromagnetism & Basic Electrical Machines

EE112 Alternating Current Principle

EE113 Electrical Fundamental

EE115 Basic Analogue & Digital Electronics

EE116 Process Control System

EE117 Solar Electrical System

EE119 Electrical Risk Assessment

EE120 Electrical Contracting & Specifications

EE308 Sustainability

STAGE (4 A) ADVANCED MECHANICAL ENGINEERING STUDY (6Pt)

ME 108 Principle of Engines

ME 109 Engineering Drawing

ME 201 Introduction to Fluid Mechanics

ME 204 Engineering Fluid Mechanics

ME 301 Fluid Dynamics

EE 305 Corrosion Prevention

STAGE (4B)ADVANCED ELECTRICAL & ELECTRONICS ENGINEERING STUDY

(ADVANCED DIPLOMA) (4 pt)

Files--Certificate in Electrical Engineering, Diploma in Electrical Engineering, Advanced Diploma in Electrical Engineering , see the following contents (Each 2.5 pt)

EE201 Engineering Mathematics

EE204 Engineering Physics

EE302 Advanced Engineering Mathematics

EE307 Energy Efficient Building Design

STAGE (5)BACHELOR OF APPLIED ENGINEERING (BUILDING SERVICE) DEGREE (32 pt)

Subjects	Points	Competency Units	Page
BAE 401 Advanced Engineering Mathematics	9	Maths 301 Introduction to Complex Variables (1 pt) Maths 302 Elementary Linear Algebra (1 pt) Maths 401 Continuous Distributions (1 pt) Maths 402 Discrete Distributions (1 pt) Maths 403 Engineering Mathematics (1 pt) Maths 501 Introduction to Probability(1 pt) Maths 501 Linear Algebra & Matrices (1 pt) Maths 502 Finite Difference Methods for Partial Differential Equations & Mathematical Modelling (1 pt) Maths 601 Random Variables (1 pt)	
BAE 402 Calculus	3	Maths 304 Integration and Differential Equations (1 pt) Maths 403 Second Order Differential Equations (1 pt) Maths 303 Engineering Mathematics (1 pt)	
BAE 403 Engineering Mechanics	1	ME 301 Applied Mathematics (1 pt)	
BAE 404 Engineering Materials & Thermodynamics	3	ME 334 Engineering Thermodynamics (1 pt) ME 434 Wind Turbines (1 pt)	

		ME 634 Pneumatics (1 pt)	
BAE 508 Industrial Engineering & Industrial Management	1	Mgt 501 Basic Management & Communication Skills (1 pt)	
BAE 601 Computer Programming	3	IT 401 Object Oriented Programming (1 pt) IT 402 Structured Programming (1 pt) IT 403 Visual Basic Programming (1 pt	
BAE 605 Engineering Management	5	Mgt 502 Operation Management (1 pt) Mgt 503 Production & Operation Management (1 pt) Mgt 504 Project Management (1 pt) Mgt 505 Quality Management and Manufacturing Engineering (1 pt) Mgt 506 Strategic Financial Management (1 pt)	
BAE 606 Building Service Electrical & Mechanical Engineering	2	EE 617 Building Electrical and Mechanical System (1 pt) ME 334 Airconditioning and Refrigeration (1 pt) CE 301 Building Construction (Optional) CE 301 Conceise Hydroulics (Optional)	
BAE 609 Design Project	5		
Total Credit points	32Pt		

Stage	**Points**
Stage 1—Diploma in Civil Engineering	30
Stage 2	30
Stage 3	18
Stage 4A	6
Stage 4B	4
Stage 5	32

Total (Bachelor of Applied Engineering-Mechtronics)	**120**

STAGE (1)DIPLOMA IN MECHANICAL ENGINEERING (30 Pt) (Each unit has 1 point)

Maths 101 Engineering Mathematics (1 pt)

Maths 301 Introductory Finite Difference Methods-for-partial differential equations(1 pt)

Maths 302 Elementary-Linear-Algebra(1 pt)

Maths 403 Engineering-Mathematics(1 pt)

Maths 501 Linear Algebra (1 pt)

Maths 303 Introductory Finite Volume Methods-for- partial differential equations(1 pt)

ME 103 Engineering Mechanics (2pt)

ME 101 Applied Mathematics (1 pt)

ME 107 Heat Transfer (1 pt)

ME 306 Theory-of-waves-in-materials (1 pt)

ME 102 Engineering Thermodynamics (2pt)

ME 234 Wind Turbines (1 pt)

ME 634 Pneumatics (1 pt)

ME 105 Electrical Principle (1 pt)

ME 106 Electrical Circuits (1 pt)

ME 104 Machine Principle (2 pt)

ME 304 Introduction to Nonlinearity-in-control-systems (1 pt)

ME 203 Control Engineering (1 pt)

EE 624 Process Control (2 pt)

ME 534 Numerical Control (1 pt)

ME 434 Mechtronics-Robotics (1 pt)

Mgt 501 Basic Management (1 pt)

EE 617 Building Electrical and Mechanical System Part 1 (2 pt)

ME 334 Airconditioning and Refrigeration (2 pt)

STAGE (2)BASIC ELECTRICAL & ELECTRONICS ENGINEERING (17 Pt)

Files--Certificate in Electrical Engineering, Diploma in Electrical Engineering, Advanced Diploma in Electrical Engineering , see the following contents

EE101 DC Circuit Problems

EE102 Basic Electrical Fitting & Wiring

EE103 Basic Electrical Drafting

EE104 Electrical Equipments Safety Protection

EE105 Electrical Installation Design

EE107 Electrical Equipments

EE106 Advanced Electrical Wiring

EE108 Electrical Fault Finding

EE109 Electrical Control Circuits

EE111 Electromagnetism & Basic Electrical Machines

EE112 Alternating Current Principle

EE113 Electrical Fundamental

EE115 Basic Analogue & Digital Electronics

EE116 Process Control System

EE117 Solar Electrical System

EE119 Electrical Risk Assessment

EE120 Electrical Contracting & Specifications

STAGE (3) ADVANCED MECHANICAL ENGINEERING STUDY (13 Pt)

GROUP (1) (7 pt)

ME 108 Principle of Engines

ME 109 Engineering Drawing

ME 201 Introduction to Fluid Mechanics

ME 202 Introduction to Aero Dynamics

ME 204 Engineering Fluid Mechanics

ME 206 Introduction to Turbo Machinery

ME 301 Fluid Dynamics

GROUP (2) (4 pt)

ME 205 Manufacturing Processes-and-Materials

ME 302 Automation-and-Robotics

ME 303 Computer Aided Design and Manufacturing

ME 305 Corrosion Prevention

GROUP (3) (2 pt)

ME 207 Chemical Thermodynamics

ME 208 Hydrocarbons

STAGE (4) ADVANCED ELECTRICAL & ELECTRONICS ENGINEERING STUDY

(ADVANCED DIPLOMA) (10 pt)

Files--Certificate in Electrical Engineering, Diploma in Electrical Engineering, Advanced Diploma in Electrical Engineering , see the following contents

EE121 Electronics Power Control Devices

EE201 Engineering Mathematics

EE202 Electrical Circuits

EE203 Three Phase Power Circuits

EE204 Engineering Physics

EE206 AC Machines

EE207 DC Machines

EE208 Operational Amplifiers

EE209 Analogue Electronics

EE301 Advanced Electrical Drafting

EE302 Advanced Engineering Mathematics (Optional)

STAGE (5)BACHELOR OF APPLIED ENGINEERING (MECHTRONICS) DEGREE

Subjects	Points	Competency Units	Page
BAE 401 Advanced Engineering Mathematics	9	Maths 301 Introduction to Complex Variables (1 pt) Maths 302 Elementary Linear Algebra (1 pt) Maths 401 Continuous Distributions (1 pt) Maths 402 Discrete Distributions (1 pt) Maths 403 Engineering Mathematics (1 pt) Maths 501 Introduction to Probability(1 pt) Maths 501 Linear Algebra & Matrices (1 pt) Maths 502 Finite Difference Methods for Partial Differential Equations & Mathematical Modelling (1 pt) Maths 601 Random Variables (1 pt)	
BAE 402 Calculus	3	Maths 304 Integration and Differential Equations (1 pt) Maths 403 Second Order Differential Equations (1 pt) Maths 303 Engineering Mathematics (1 pt)	
BAE 403 Engineering Mechanics	1	ME 301 Applied Mathematics (1 pt)	
BAE 404 Engineering Materials & Thermodynamics	3	ME 334 Engineering Thermodynamics (1 pt) ME 434 Wind Turbines (1 pt) ME 634 Pneumatics (1 pt)	
BAE 405 Advanced Circuit Analysis	3	EE 301 Electrical Circuits (1 pt) EE 303 Engineering Circuit Analysis (1 pt) EE 404 Electrical Measurement (1 pt)	
BAE 406 Electro-mechanics	2	EE 502 Electrical Machines (1 pt) ME 301 Machine Principle (1 pt)	
Subjects	**Points**	**Competency Units**	**Page**

BAE 408 Analogue & Digital Electronics	5	EE 403 Introduction to Electronic Engineering (1 pt) EE 524 Power Electronics & Applied Electronics (1 pt) EE 405 Digital System (1 pt) EE 526 Digital Signal Processing (1 pt) EE 527 Digital Image Processing 1/ 2 (1 pt)	
BAE 502 Linear System	1	EE 304 Computer Mathematics (1 pt)	
BAE 503 Control System	4	EE 601 Non Linear Control Applications (1 pt) EE 601 Control Engineering , Feedback and Control System , PID_Control (1 pt) EE 624 Process Control (1 pt) ME 534 Numerical Control Part 1 / 2 (1 pt)	
BAE 507 Electro-mechanical Energy Conversion	2	EE 602 Motor Control Electronics (1 pt) ME 434 Mechtronics & Robotics (1 pt)	
BAE 508 Industrial Engineering & Industrial Management	1	Mgt 501 Basic Management & Communication Skills (1 pt)	
BAE 601 Computer Programming	3	IT 401 Object Oriented Programming (1 pt) IT 402 Structured Programming (1 pt) IT 403 Visual Basic Programming (1 pt	
BAE 602 Computer Network	1	ICT 202 Information Systems Principles and Networking (1 pt)	
BAE 603 Software Engineering	3	ICT 106 Software Engineering (1 pt) ICT 203 Information Systems, Analysis and Design (1 pt) EE 626 Nano Technology (1 pt)	
BAE 604 Telecommunication Engineering	2	EE 525 Data Communication (1 pt)	
BAE 605 Engineering Management	5	Mgt 502 Operation Management (1 pt)	

		Mgt 503 Production & Operation Management (1 pt) Mgt 504 Project Management (1 pt) Mgt 505 Quality Management and Manufacturing Engineering (1 pt) Mgt 506 Strategic Financial Management (1 pt)	
BAE 606 Building Service Electrical & Mechanical Engineering	2	EE 617 Building Electrical and Mechanical System (1 pt) ME 334 Airconditioning and Refrigeration (1 pt) CE 301 Building Construction (Optional) CE 301 Conceise Hydroulics (Optional)	
Total Credit points	50 Pt		

Stage	**Points**
Stage 1—Diploma in Mechanical Engineering	30
Stage 2	17
Stage 3	13
Stage 4	10
Stage 5	50
Total (Bachelor of Applied Engineering-Mechtronics)	**120**

Bachelor of Applied Engineering (Electrical+Electronics) with Certificate IV in Electrical & Electronics Trade Studies

www.electricaldiploma2013.zoomshare.com/files/BAppEngElectricalElectronics.htm

Course Development Ideas, Brief Description of the subjects & Resources Links

This is a course that combines the trade skills, para-professional and professional competencies in electrical and electronics engineering.

Today industry demands the multi-skilled professionals. Especially in electro-technology industry, the graduates need to be equipped with multiple skills.

This course combines the Electrical & Electronics Trade Skills, Engineering Associate Competencies & Engineering Technologists Competencies.

Bachelor of Applied Engineering is designed to be equivalent to Engineering Technologist Degree.

The program consists of three level of electrical & electronics engineering competencies

Stage 1-- Year 1 is composed of Electrical & Electronics Trade Units.

The relevant electro-technology training package units are combined up to the stage of pre-capstone assessment level in electrical trades as well as theoretical part of telecommunication cabler competencies. The award after the Year 1 is Certificate IV in Electrical & Electronic Trade Studies.

Stage 2-Year 2 is composed of Advanced Diploma level Electrical & Electronic Training Package units. It is designed to train the students with both electrical and electronic engineering skills and knowledge at engineering associates level.

After the Year 2, the students can be graduated with Advanced Diploma in Applied Engineering (Electrical & Electronics)

Stage 3- Year 3 & 4 is composed of the degree level electrical and electronic engineering units. The study is a combined studies of electrical power, electronics, computer programming, computer networking , control system, building services engineering and renewable energy.

At the Advanced Diploma level, electro-technology training package units are referred as detailed contents. But the packaging is based on the study areas.

For example, the unit GE2 Electrical Machine is composed of several electro-technology training package units at trades & technician level related to electric machineries.

Program Objectives

Certificate IV in Electrical & Electronics Trade Studies

One year Certificate IV in Electrical & Electronics Trade Studies is designed to train the students to work as Engineering Trades Persons (Electrical/Electronics) in wide ranges of electrical & electronic industries

It is designed to provide the following competencies.

- Breadth, depth and complexity of knowledge and competencies would cover selecting, adapting and transferring skills and knowledge to Australian environments and providing technical advice and some leadership in resolution of specified problems. This would be applied across a range of roles in a variety of contexts with some complexity in the extent and choice of options available.
- Performance of a defined range of skilled operations, usually within a range of broader related activities involving known routines, methods and procedures, where some discretion and judgement is required in the section of equipment, services or contingency measures and within known time constraints.
- Applications may involve some responsibility for others. Participation in teams including group or team coordination may be involved.
- Distinguishing Features of Learning Outcomes
- Do the competencies enable an individual with this qualification to:
- demonstrate some relevant theoretical knowledge
- apply a range of well-developed skills
- apply known solutions to a variety of predictable problems
- perform processes that require a range of well-developed skills where some discretion and judgement is required
- interpret available information, using discretion and judgement
- take responsibility for own outputs in work and learning
- take limited responsibility for the output of others
- Breadth, depth and complexity of knowledge and competencies would cover a broad range of varied activities or application in a wider variety of contexts most of which are complex and non-routine. Leadership and guidance are involved when organising activities of self and others as well as contributing to technical solutions of a non-routine or contingency nature.
- Performance of a broad range of skilled applications including the requirement to evaluate and analyse current practices,

develop Australian criteria and procedures for performing current practices and provision of some leadership and guidance to others in the application and planning of the skills.

- Applications involve responsibility for, and limited organisation of, others.
- Distinguishing Features of Learning Outcomes
- Do the competencies enable an individual with this qualification to:
- demonstrate understanding of a broad knowledge base incorporating some theoretical concepts
- apply solutions to a defined range of unpredictable problems
- identify and apply skill and knowledge areas to a wide variety of contexts, with depth in some areas
- identify, analyse and evaluate information from a variety of sources
- take responsibility for own outputs in relation to specified quality standards
- take limited responsibility for the quantity and quality of the output of others.

Diploma/ Advanced Diploma in Applied Engineering (Electrical+ Electronics)

Two years Advanced Diploma in Applied Engineering (Electrical & Electronics) is designed to train the students to work as Engineering Associates Technicians in wide ranges of electrical & electronic industries to perform a wide range of functions within engineering enterprises and engineering teams.

It is designed to provide the following competencies.

- To be closely familiar with standards and codes of practice, and to become expert in their interpretation and application to a wide variety of situations.
- To develop very extensive experience of practical installations, and may well be more knowledgeable than Professional Engineers or Engineering Technologists on detailed aspects of plant and equipment that can contribute very greatly to safety, cost or effectiveness in operation.
- To develop high levels of expertise in aspects of design and development processes. These might include, for example, the use of advanced software to perform detailed design of structures, mechanical components and systems, manufacturing or process plant, electrical and electronic equipment, information and communications systems, and so on.
- To do the construction of experimental or prototype equipment.
- To develop detailed practical knowledge and experience complementing the broader or more theoretical knowledge of others.

Bachelor Applied Engineering (Electrical+ Electronics)

Four years Bachelor of Applied Engineering (Electrical & Electronics) is designed to train the students to work as Engineering Technologists in wide ranges of industries.

The training is designed to provide expertise to the students which may be at a high level, and fully equivalent to that of a Professional Engineer. That is designed

- to exercise the same breadth of perspective as Professional Engineers, or carry the same wide-ranging responsibilities for stakeholder interactions, for system integration, and for synthesising overall approaches to complex situations and complex engineering problems.
- to possess for a strong understanding of practical situations and applications, with the intellectual challenge of keeping abreast of leading-edge developments as a specialist in a technology domain and how these relate to established practice. For this purpose Engineering Technologists need a strong understanding of scientific and engineering principles and a well-developed capacity for analysis.
- to apply current and emerging technologies, often in new contexts; or with the application of established principles in the development of new practice.
- To contribute to the advancement of technology.
- to take responsibility for engineering projects, services, functions and facilities within a technology domain, for specific interactions with other aspects of an overall operating context and for managing
- to contribute the specialist work to a broader engineering system or solution. In these roles, Engineering
- to focus on sustainable solutions and practices which optimise technical, social, environmental and economic outcomes within the technology domain and over a whole systems life cycle.
- to have an intimate understanding of the standards and codes of practice that underpin the technology domain and ensure that technology outcomes comply with statutory requirements. Engineering Technologists are required to interact effectively with Professional Engineers and Engineering Associates, with other professionals, tradespersons, clients, stakeholders and society in general, to ensure that technology outcomes and developments fully integrate with the overall system and context.
- to ensure that all aspects of a technological product, or operation are soundly based in theory and fundamental principle.
- to understand how new developments relate to their specific field of expertise.
- to interpret technological possibilities, to investigate interfaces, limitations, consequences, costs and risks.

Credit Points

To be relevant to International Standard Credit Points system, the credit points for the studies are arranged as follows

Stage	Year	Course	Credit Points
1	1	Certificate IV in Electrical & Electronics Trade Studies	30
2	2	Diploma/ Advanced Diploma in Applied Engineering (Electrical+ Electronics)	30

		Total points after Advanced Diploma	60
3	3	Bachelor Applied Engineering (Electrical+ Electronics) Part 1	30
3	4	Bachelor Applied Engineering (Electrical+ Electronics) Part 2	30
		Total points after Bachelor of Applied Engineering	120

Time allocations & detailed credit arrangement for each unit at degree level

More detailed developments are required.

Structures of the units

GE-General Engineering IE-Intermediate Engineering

BAE-Bachelor of Applied Engineering

Year 1 Certificate IV in Electrical & Electronics Trades

Semester 1

IE6	Principle of Electricity
IE13	Workshop
GE14	Fitting & Machining
GE16	Engineering Drawing I
GE1	Electrical Wiring (EE) Part 1
GE27	Machine Principle(ME)
IE3	Material Science
GE6	Occupational Health & Safety

Semester 2

GE1	Electrical Wiring Part 2
IE23	Industrial Computer System
GE13	Principle of Engine
IE31	Introduction to Renewable Energy Technology
GE18	Air-conditioning & Refrigeration (ME)
GE2	Electrical Machine (EE)
GE8	Electronics (EE)
IE32	Telecommunication Cabling & Installation

Year 2- Diploma/Advanced Diploma in Applied Engineering -(Electrical & Electronics)

Semester 1-

Diploma in Engineering Technology-(Electrical & Electronics)

IE1	Engineering Mathematics
IE2	Engineering Physics
IE7+ IE8	Electrical Circuit (EE)
GE10	Industrial Electronics (EE)
GE3	Electrical Distribution (EE)
GE9	Process Control (EE/ME)
GE11	Programmable Logic Controller (EE/ME)
IE15	Advanced Engineering Design & Project Work
IE27	Control Concept

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Semester 2-

Advanced Diploma in Engineering Technology-(Electrical & Electronics)

IE4	Advanced Engineering Mathematics
GE34	Engineering Business Management
GE4	Power System Operation (EE)
GE5	Power System Protection
GE20	Computer Networking (EE)

GE26	Energy Efficient Building Design
IE10	Transmission Line (EE)
GE7	Project Management (EE/CE/ME)

Year 3 - Bachelor of Applied Engineering -(Electrical & Electronics) Part 1

Semester 1-

BAE 401	Higher Engineering Mathematics
BAE 402	Calculus
GE12	Photovoltaic Solar Electrical System
GE24	Manufacturing Management (ME)
IE24	Microprocessor
IE28	Electronic Signal & System
IE29	Electrical Estimating

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Semester 2-

IE34	Electricity Supply Industrial Skills
IE16	Power System Analysis-Fault Calculation
GE19	Computer Programming (EE/CE/ME)
IE26	Electrical Communication Fundamental
BAE 405	**Advanced Circuit Analysis**
BAE 406	**Electro-mechanics**
BAE 407	**Advanced Electro-magnetics Field & Materials**
BAE 408	**Analogue & Digital Electronics**

Year 4 - Bachelor of Applied Engineering -(Electrical & Electronics) Part 2

Semester 1-

- Professional Studies (Part 1)

IE33	Hybrid Energy System
IE18	Building services
BAE 502	**Linear System**
BAE 503	**Control System**
BAE 504	**Power System Analysis**
BAE 505	**Power System Optimization**
BAE 507	**Electro-mechanical Energy Conversion**

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Semester 2-

- Professional Studies (Part 2)

BAE 508	**Industrial Engineering & Industrial Management**
BAE 603	**Software Engineering**
BAE 607	**Radio Wave Propagation & Microwave Techniques**

	PLUS Other elective BAE units at level 5 & 6
	Design Project

Learning Resources

- **Certificate to Advanced Diploma _Curriculum & Resources Download Link**
- **Bachelor of Applied Engineering (Electrical & Electronics) Curriculum & Detailed Contents**
- **Bachelor Degree Resources Download Link**

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BMgt+BAppSC (IT)

Year 1+2

Advanced Diploma in Management (60 cp)+
Diploma in Information Technology(30 cp)

Year 3+4

Bachelor of Applied Science (Computer Science & Computer Technology)

Year (3)

Unit	Topics	Reference	Points
ICT 301	General Electrical Knowledge	EE101	3
ICT 302	Digital Electronics	EE209/H012	3
ICT 303	Amplifier	EE208/H013	3
ICT 304	Material Science	E081	3
EE204	Physics	E046	3
EE201	Mathematics 1	E050	3
EE202	Mathematics 2	E026	3
EE306	Basic Control	I008	3
BAE605	Management		3
BAE408	Analog & Digital Electronics		3
	Mgt 301 Electronics Business Mgt 302 Information Security Mgt 303 Management Information System		3 3 4
		TOTAL	40

Year (4)

Unit	Topics	Reference	Points
ICT 401	Advanced Mathematics 1	BAE401	3
ICT 402	Advanced Mathematics 2	BAE402	3
BAE604	Telecommunication System		3
BAE508	Project Management		3
ICT 305	Professional Programming (1) C++		3
ICT 403	Professional Programming (2) Object Oriented		3
ICT 404	Professional Programming (3) Java		3
ICT 405	Professional Practice (1) Network		3
ICT 406	Professional Practice (2) Website		3
ICT 407	Artificial Intelligence		3
	Mgt 304 Electronics Commerce Mgt 305 Quantitative Methods for Management Mgt 306 Human Resources Management Mgt 307 Marketing Management		3 3 3 3
		TOTAL	42

Total credit points Year 1+2= 90+ Yr3+4=82 = 172

IQY Technical College သည် Bachelor of Engineering (Rural Development) Engineering (online) Course အသစ်ကို Year 10/ THS/ITC အောင်များ အတွက်ထပ်မံဖွင့်မည်။ စိုက်ပျိုးရေး၊မွေးမြူရေး၊ဆောက်လုပ်ရေး၊လျှပ်စစ်၊ ကျေးလက်ရေဖြန့်ဖြူးရေး၊နေစွမ်းအင်မှလျှပ်စစ်ထုတ်လုပ်ရေး၊နေစွမ်းအင်သုံးရေခဲ စက်ဘာသာများပါဝင်သည်။

MVTC601-Professional Diploma of Rural Development Engineering

(Bachelor of Engineering-Rural Development Engineering)

BE(RDE)

(STC Technological University)

Advanced Diploma of Rural Development Engineering

Objective of the course

This course aims to provide the necessary skills required for people in rural areas to perform the followings

- Agricultural Foods Production and Animal Handling
- Building Construction, Drawing, Water Supply, Road and Bridge Construction, Irrigation
- Electrical Supply & Solar Electrical Supply System
- Hydraulics
- Machine Repair, Welding and Machining
- Water Chemical Treatment
- Transportation & Logistics

Course Structure

The course consists of Civil, Electrical and Mechanical Engineering principle together with Transportation, Logistics and Agricultural Foods Production.

Outcome of the course

After having completed this course, the attenders can perform rural developmental engineering basic works in their regions.

Detailed Structure of the course

Credit Points- 60 points to complete Advanced Diploma of Rural Development. Diploma and Certificate in Rural Development can be awarded upon completion of the specific units.

List of Subjects

Year 1

Advanced Certificate in Rural Development Engineering (16 Credits)

(MVTC Level (3) (Course Number MVTC301)

CE106 Brick Laying, Sprouting and Gutter Construction (4 Points)

CE104 Construction Drawing (4 Points)

CE110 Building Construction (4 Points)

CE107 Water Supply (4 Points)

Diploma in Rural Development (32 Credits)

(MVTC Level (4) (Course Number MVTC401)

All units in Certificate in Rural Development (16 Credits)

CE111 Road Bridge and Irrigation System Construction (4 Points)

MVTC13PC9 Electrical Wiring (4 Points)

MVTC201Agriculture+MVTC202Animal Handling(4 Points)

MVTC204 Water Chemical Treatment (4 Points)

Year 2

Advanced Diploma in Rural Development (60Credits)

(MVTC Level (5) (Course Number MVTC501)

All units in Diploma in Rural Development

RE002 Grid Connected Power System (4 Points) together with EE101 DC Circuits+EE112 AC Circuits

EE118 Electrical Supply System (4 Points)

ME108 Principle of Engine+MVTC13PC7 Engine Repairs (4 Points)

ME201 Hydraulics (4 Points)

MVTC13PC6 Welding+MVTC13PC5FittingMachining (4 Points)

MVTC209 Transport Logistics (4 Points)

Mgt101 Management Studies (4 Points)

(Bachelor of Engineering-Rural Development Engineering)

BE(RDE)

(STC Technological University)

TOTAL 21 Units at 60 Credit points

Entry requirement AGTI/ City & Guild Diploma

YEAR 3

Professional Diploma in Engineering (Year 3)

www.iqytechnicalcollege.com/profdipengg.htm

1 BAE 401 Advanced Engineering Mathematics (3 pt)

2 BAE 402 Calculus (3 pt)

3 BAE 403 Engineering Mechanics (3 pt)

4 BAE 404 Engineering Materials & Thermodynamics (3 pt)

5.BAE421 Building Construction Engineering (3 pt)

6. BAE422 Estimating (3 pt)

7. BAE423 Fluid Mechanics (3 pt)

8. BAE424 Reinforced Concrete (3 pt)

9. BAE 523A Environmental Engineering (3 pt)

10.BAE621 Structural Engineering (3 pt)

11 RE012a-Electrical Engineering Part 1(2 pt)

12RE016-Design& Management (3 pt)

Professional Diploma/BE (Rural Development)

(Total 12 units) (Each 2 Credit points)

Year 4

13.RE013-Electrical Machines (3 pt)

14.BAE 501 Advanced Power Systems & Power Transmission Networks

Rural Electrical Power Supply System (3 pt)

1 5 RE001- Foundation Studies in Renewable Energy and Sustainability (2 pt)

16.RE003- Solar and Thermal Energy Systems (3 pt)

17.RE004- Energy Storage Systems(3 pt)

18 RE010-Engineering Materials(3 pt)

19.BAE 604 Telecommunication Engineering (3 pt)

Rural Telecommunication System

20.BAE511 Air-conditioning & Refrigeration (3 pt)
Solar Powered Refrigeration for Rural Area

Engineering Competency Demonstration Report

21.BAE608 Engineering Competency Demonstration Report (2 credit points)

Engineering Handbook Applications

DIPLOMA IN CIVIL ENGINEERING

Pre-requisite

Trade Certificate or Certificate in Civil Engineering/ Building / Brick Laying/ Carpentry /Surveying etc or work experience.

ASSESSMENT (DIPLOMA)

Completion of the course works- submission of the assignments Theory/ Practical/ Calculations) for the over all knowledge of the subject
(Grading—Complete or Incomplete)

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BACHELOR OF APPLIED ENGINEERING (BUILDING SERVICE)

Pre-requisite

Diploma in Civil Engineering

ASSESSMENT

The learning and assessment system involves two parts

(1) **Part (1)**

Completion of the course works- submission of the assignments Theory/ Practical/ Calculations) for the over all knowledge of the subject
(Grading—Complete or Incomplete)

(2) Completion of the course works- submission of the assignments (Theory/ Practical/ Calculations) for the competency units of the subject
(Grading—Complete or Incomplete)

(3) **Part (2)**

Sitting the final test for the subject by either online or paper based test- -Grading—In accordance with St Clements University Higher Education School-Niue Students Handbook.

STAGE (1)DIPLOMA IN CIVIL ENGINEERING (Each 2.5 Credits) (30 Pt)

Certificate in Construction Studies

CE 106A Detailed Construction & Building Construction Materials

CE 104 A Building Drawing

CE 101 Mathematics

CE 102 Physics

CE 108 Electrical Principle

DIPLOMA IN CIVIL ENGINEERING

CE 104 Fluid Dynamics

CE 105 Hydraulic

CE 106 Hydrology

CE 107 Sanitation-and-Water-supply

CE 109 Energy Efficient Building Design

CE 110 Building Construction

EE102 Basic Electrical Fitting & Wiring

Year (2) Advanced Diploma in Civil Engineering Program(30 pt) (Each 2.5 pt)

YEAR (2) SEMESTER (1)

CE103-Surveying

CE111A-Road+Bridges

CE113 Structure 1

CE114 Structure 2

CE115 Estimating & Specification

YEAR (2) SEMESTER (2)

EE104 Electrical Equipments Safety Protection

EE105 Electrical Installation Design

ME 102 Engineering Thermodynamics

ME 334 Airconditioning and Refrigeration

EE106 Advanced Electrical Wiring

CE 111 Engineering Mechanics+ ME 301 Applied Mathematics

EE308 Sustainability

Year (3) Part 1 ADVANCED GENERAL CIVIL ENGINEERING DEGREE LEVEL

Subjects	Points	Competency Units	Page
BAE 401 Advanced Engineering Mathematics	9	Maths 301 Introduction to Complex Variables (1 pt) Maths 302 Elementary Linear Algebra (1 pt) Maths 401 Continuous Distributions (1 pt) Maths 402 Discrete Distributions (1 pt) Maths 403 Engineering Mathematics (1 pt) Maths 501 Introduction to Probability(1 pt) Maths 501 Linear Algebra & Matrices (1 pt) Maths 502 Finite Difference Methods for Partial Differential Equations & Mathematical Modelling (1 pt) Maths 601 Random Variables (1 pt)	
BAE 402 Calculus	3	Maths 304 Integration and Differential Equations (1 pt) Maths 403 Second Order Differential Equations (1 pt) Maths 303 Engineering Mathematics (1 pt)	
BAE 403 Engineering Mechanics	1	ME 301 Applied Mathematics (1 pt)	
BAE 404 Engineering Materials & Thermodynamics	3	ME 334 Engineering Thermodynamics (1 pt) ME 434 Wind Turbines (1 pt) ME 634 Pneumatics (1 pt)	
BAE 508 Industrial Engineering & Industrial Management	1	Mgt 501 Basic Management & Communication Skills (1 pt)	
Total Credit points in this group	17 pt		

Year (3) Part 2 ADVANCED GENERAL CIVIL ENGINEERING DEGREE LEVEL (18 Pt)

BAE421 Building Construction Engineering (4 pt)

BAE422 Estimating (2 pt)

BAE423 Fluid Mechanics (2 pt)

BAE424 Reinforced Concrete (2 pt)

BAE425 Timber Engineering (2 pt)

BAE521 Road & Bridge (2 pt)

BAE522 Rock Mechanics (2 pt)

BAE523 Soil Mechanics (2 pt)

TOTAL 35 Pt

Year (4) Part 1

BAE 601 Computer Programming	3	IT 401 Object Oriented Programming (1 pt) IT 402 Structured Programming (1 pt) IT 403 Visual Basic Programming (1 pt
BAE 605 Engineering Management	5	Mgt 502 Operation Management (1 pt) Mgt 503 Production & Operation Management (1 pt) Mgt 504 Project Management (1 pt) Mgt 505 Quality Management and Manufacturing Engineering (1 pt) Mgt 506 Strategic Financial Management (1 pt)
BAE 606 Building Service Electrical & Mechanical Engineering	2	EE 617 Building Electrical and Mechanical System (1 pt) ME 334 Airconditioning and Refrigeration (1 pt) CE 301 Building Construction (Optional) CE 301 Conceise Hydroulics (Optional)
BAE 609 Design Project	3	
Total Credit points in this group	13 Pt	

Year (4) Part 1

(12 Pt)

BAE621 Structural Engineering (3 pt)

BAE623 Surveying & Traffic Engineering (2 pt)

BAE624 Water Supply , Sanitation & Finishing (2 pt)

BAE 608 Engineering Competency Demonstration Report Writing (2pt)

SELF STUDY

BAE622 Architecture (3 pt)

TOTAL 25 pt

DIPLOMA IN MECHANICAL ENGINEERING

Pre-requisite

Trade Certificate or Certificate in Mechanical Engineering/ Fitting /Machining/Welding/Auto Mechanic etc or work experience.

ASSESSMENT (DIPLOMA)

Completion of the course works- submission of the assignments Theory/ Practical/ Calculations) for the over all knowledge of the subject
(Grading—Complete or Incomplete)

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BACHELOR OF ENGINEERING (MECHANICAL)

Pre-requisite

Diploma in MechanicalEngineering

ASSESSMENT

The learning and assessment system involves two parts

(1) **Part (1)**

Completion of the course works- submission of the assignments Theory/ Practical/ Calculations) for the over all knowledge of the subject
(Grading—Complete or Incomplete)

(2) Completion of the course works- submission of the assignments (Theory/ Practical/ Calculations) for the competency units of the subject
(Grading—Complete or Incomplete)

(3) **Part (2)**

Sitting the final test for the subject by either online or paper based test- -Grading—In accordance with St Clements University Higher Education School-Niue Students Handbook.

Year (1)

Certificate in Mechanical Engineering (Each 1.5 Credits) (15 Pt)

Unit Number	Unit Name	Credit Points
Maths 101	Engineering Mathematics	1.5
ME 101	Applied Mathematics	1.5
ME 102	Engineering Thermodynamics	1.5
ME 103	Engineering Mechanics	1.5
ME 104	Machine Principle	1.5
ME 105	Electrical Principle	1.5
ME 106	Electrical Circuits	1.5
ME 107	Heat Transfer	1.5
ME 108	Principle of Engines	1.5
ME201	Introduction to Fluid Mechanics	1.5
	Total	15

Diploma in Mechanical Engineering (Each 1.5 Credits) (15 Pt)

ME 202 Introduction to Aero Dynamics

ME 203 Control Engineering

ME 204 Engineering Fluid Mechanics

ME 205 Manufacturing Processes-and-Materials

ME 206 Introduction to Turbo Machinery

ME 207 Chemical Thermodynamics

ME 208 Hydrocarbons

ME 209 Introduction-to-polymer-science-and-technology

ME 234 Wind Turbines

Mgt 501 Basic Management

Year (2)

Advanced Diploma in Mechanical Engineering (Each 1.5 Credits) (30 Pt)

Mathematics

Maths 403 Engineering-Mathematics

Maths 301 Introductory Finite Difference Methods-for-pdes

Maths 302 Elementary-Linear-Algebra

Maths 303 Introductory Finite Volume Methods-for-pdes

Maths 501 Linear Algebra-c-1

Mechanical Engineering

ME 301 Fluid Dynamics

ME 302 Automation-and-Robotics

ME 303 Computer Aided Design and Manufacturing

ME 304 Introduction to Nonlinearity-in-control-systems

ME 305 Corrosion Prevention

ME 306 Theory-of-waves-in-materials

ME 334 Airconditioning and Refrigeration

ME 434 Mechtronics-Robotics

ME 534 Numerical Control Part 1

ME 634 Pneumatics

EE 617 Building Electrical and Mechanical System Part 1

EE 624 Process Control

Mgt 503 Production & Operation Management

Mgt 505 Quality Management and Manufacturing Engineering

Year (3)

GENERAL APPLIED ENGINEERING (MECHANICAL) DEGREE

Subjects	Points	Competency Units	Page
BAE 401 Advanced Engineering Mathematics	9	Maths 301 Introduction to Complex Variables (1 pt) Maths 302 Elementary Linear Algebra (1 pt) Maths 401 Continuous Distributions (1 pt) Maths 402 Discrete Distributions (1 pt) Maths 403 Engineering Mathematics (1 pt) Maths 501 Introduction to Probability(1 pt) Maths 501 Linear Algebra & Matrices (1 pt) Maths 502 Finite Difference Methods for Partial Differential Equations & Mathematical Modelling (1 pt) Maths 601 Random Variables (1 pt)	
BAE 402 Calculus	3	Maths 304 Integration and Differential Equations (1 pt) Maths 403 Second Order Differential Equations (1 pt) Maths 303 Engineering Mathematics (1 pt)	
BAE 403 Engineering Mechanics	1	ME 301 Applied Mathematics (1 pt)	

BAE 404 Engineering Materials & Thermodynamics	3	ME 334 Engineering Thermodynamics (1 pt) ME 434 Wind Turbines (1 pt) ME 634 Pneumatics (1 pt)	
BAE 507 Electro-mechanical Energy Conversion	2	EE 602 Motor Control Electronics (1 pt) ME 434 Mechtronics & Robotics (1 pt)	
BAE 508 Industrial Engineering & Industrial Management	1	Mgt 501 Basic Management & Communication Skills (1 pt)	
BAE511 Air-conditioning & Refrigeration	2 pt	ME511 Air-conditioning & Refrigeration	
BAE613 Mechanical Instrumentation Process	2 pt	ME 613 Mechanical Instrumentation & Process	
BAE614 Machine Design	2 pt	ME 614 Machine Design Part 1 Part 2 Part 3	
BAE512 Building Service Water Supply System	2 pt	ME512 Building Service Water Supply System	
BAE511 Air-conditioning & Refrigeration	2 pt	ME511 Air-conditioning & Refrigeration	
BAE613 Mechanical Instrumentation Process	2 pt	ME 613 Mechanical Instrumentation & Process	
	31 pt		

Year (4) Part 1 BE (Mechanical + General Related Subjects)

BAE 601 Computer Programming	3	IT 401 Object Oriented Programming (1 pt) IT 402 Structured Programming (1 pt) IT 403 Visual Basic Programming (1 pt	
BAE 602 Computer Network	1	ICT 202 Information Systems Principles and Networking (1 pt)	
BAE 603 Software Engineering	3	ICT 106 Software Engineering (1 pt) ICT 203 Information Systems, Analysis and Design (1 pt) EE 626 Nano Technology (1 pt)	
BAE 605 Engineering Management	5	Mgt 502 Operation Management (1 pt) Mgt 503 Production & Operation Management (1 pt)	

		Mgt 504 Project Management (1 pt) Mgt 505 Quality Management and Manufacturing Engineering (1 pt) Mgt 506 Strategic Financial Management (1 pt)	
BAE 606 Building Service Electrical & Mechanical Engineering	2	EE 617 Building Electrical and Mechanical System (1 pt) ME 334 Airconditioning and Refrigeration (1 pt) CE 301 Building Construction (Optional) CE 301 Conceise Hydroulics (Optional)	
Total Credit points	14 Pt		

Year (4) Part 2

Bachelor of Engineering (Mechanical) Specialization (13 pt)

BAE311 Plant Engineering (2 pt)

BAE312 Design Engineering (2 pt)

BAE313 Environmental Control (2 pt)

BAE314 Mechanical Power Generation (2 pt)

BAE315 Materials Engineering (2 pt) Part 1 Part 2

BAE 608 Engineering Competency Demonstration Report Writing (3 pt)

Elective (2 pt)

Subjects	Points	Units
BAE513 Production Technology	2 pt	ME513 Production Technology
BAE611 Maintenance Engineering	2 pt	ME 611 Maintenance Engineering
BAE612 Engineering Metallurgy	2 pt	ME 612 Metallurgy

DIPLOMA OF AUTOMOTIVE ENGINEERING

PART (1) RELATED BASIC KNOWLEDGE (13 pt) (Each 1 pt)

Maths 101+302+403 (EE201) Engineering Mathematics

Maths 301+501+303 (EE302) Advanced Engineering Mathematics

ME103 Engineering Mechanics(EE204 Engineering Physics)

Mgt 501 Basic Management (EE309 Project Management)

EE101 DC Circuit Problems

EE102 Basic Electrical Fitting & Wiring

EE103 Basic Electrical Drafting

EE104 Electrical Equipments Safety Protection

EE111 Electromagnetism & Basic Electrical Machines

EE112 Alternating Current Principle

EE113 Electrical Fundamental

EE208 Operational Amplifiers

EE209 Analogue Electronics

PART (2) BASIC MECHANICAL (6 pt) (Each 2 pt)

Refer www.highlightcomputer.com/advdipmechengg.htm
and do the following units

ME108 Principle of Engine

ME 101 Applied Mathematics+ ME 103 Engineering Mechanics

ME 102 Engineering Thermodynamics

PART (3) SPECIALIZED AUTOMOTIVE ENGINEERING (10 pt) (Each 2 pt)
AE 101 Auto Diesel+ Auto Electrics

AE 102 Auto General Engine+ Fuel System+ Transmission

AE 103 Engine Assembly +Electrical +Electronics

AE 104 Brake & Steering System

AE 105 Automotive Mechanic

PROFESSIONAL DIPLOMA IN AUTOMOTIVE ENGINEERING

Year 3

Unit number	Unit name
BAE 401	Advanced Engineering Mathematics
BAE 402	Calculus
BAE 403	Engineering Mechanics
BAE 404	Engineering Materials & Thermodynamics
AE301	Automotive Engineering
AE302	Auto Vehicle Safety

RE004	Energy Storage Systems (2 pt)
RE005	Renewable Energy Resource Analysis (2 pt)
AE303	Automotive Chasis(2 pt)
RE010	Engineering Materials (2 pt)
AE304	AE304 Engine Testing(2pt)
RE016	Design & Management (BAE508) (2 pt)

.

Year 4

Subject	
BAE681	Welding Engineering
BAE684	Computerised Engine Control
BAE685	Electric Vehicle Technology
AE401	Automotive Mechatronics
BAE314	Mechanical Power Generation
BAE315	Materials Engineering
BAE511	Air-conditioning & Refrigeration
BAE690	Mechanical Estimating
BAE613	Mechanical Instrumentation Process
BAE614	Machine Design
RE007	Energy System Efficiency
AE402	Diesel Engine Repair
Graduating Unit	
BAE 605	Engineering Management
BAE 608	Engineering Competency Demonstration Report

BE+BAppSCIT

Year 1+2

Adv Dip in Engineering (60cp)+Dip IT (30 cp)

Year 3+4

Bachelor of Engineering (Electrical)

YEAR 3 +4

Subjects		
BAE 401 Advanced Engineering Mathematics		
BAE 402 Calculus		
BAE 403 Engineering Mechanics		
BAE 404 Engineering Materials & Thermodynamics		
BAE 405 Advanced Circuit Analysis		
BAE 406 Electro-mechanics		
BAE 407 Advanced Electro-magnetics Field & Materials		
BAE 408 Analogue & Digital Electronics		
ICT 302	Digital Electronics	3
ICT 303	Amplifier	3
ICT 304	Material Science	3
BAE 501 Advanced Power Systems & Power Transmission Networks		
BAE 502 Linear System		
BAE 503 Control System		
BAE 504 Power System Analysis		
BAE 505 Power System Optimization		

BAE 506 Power System Stability & Protection
BAE 507 Electro-mechanical Energy Conversion
BAE 508 Industrial Engineering & Industrial Management
BAE 601 Computer Programming
BAE 602 Computer Network
BAE 603 Software Engineering
BAE 604 Telecommunication Engineering
BAE 605 Engineering Management
BAE 606 Building Service Electrical & Mechanical Engineering
BAE 607 Radio Wave Propagation & Microwave Techniques
BAE 608 Professional Engineer Competency Demonstration Report
ICT 401Advanced Mathematics 1
ICT 402Advanced Mathematics 2
ICT 305Professional Programming (1) C++

Engineering 72 CP+ ICT =12 CP= 84 CP

Year 5

ICT 403	Professional Programming (2) Object Oriented	3
ICT 404	Professional Programming (3) Java	3
ICT 405	Professional Practice (1) Network	3
ICT 406	Professional Practice (2) Website	3
ICT 407	Artificial Intelligence	3

Year 5= Engineering =24 CP+ICT 15 CP= 39 CP\

Total= Yr 1+2 90CP+ Yr 3+4=84CP+ Yr 5= 39 CP=Total 213 CP

Bachelor of Engineering (Civil)

Year (3) Part 1 ADVANCED GENERAL CIVIL ENGINEERING DEGREE LEVEL

Subjects
BAE 401 Advanced Engineering Mathematics

BAE 402 Calculus
BAE 403 Engineering Mechanics
BAE 404 Engineering Materials & Thermodynamics

	General Electrical Knowledge	3
ICT 302	Digital Electronics	3
ICT 303	Amplifier	3
ICT 304	Material Science	

BAE 508 Industrial Engineering & Industrial Management

Year (3) Part 2 ADVANCED GENERAL CIVIL ENGINEERING DEGREE LEVEL (18 Pt)

BAE421 Building Construction Engineering (4 pt)

BAE422 Estimating (2 pt)

BAE423 Fluid Mechanics (2 pt)

BAE424 Reinforced Concrete (2 pt)

BAE425 Timber Engineering (2 pt)

BAE521 Road & Bridge (2 pt)

BAE522 Rock Mechanics (2 pt)

BAE523 Soil Mechanics (2 pt)

BAE 523A Environmental Engineering

TOTAL 35 Pt

Year (4) Part 1

BAE 601 Computer Programming
BAE 605 Engineering Management
BAE 606 Building Service Electrical & Mechanical Engineering
ICT 401Advanced Mathematics 1

ICT 402Advanced Mathematics 2
ICT 305Professional Programming (1) C++

Year (4) Part 1

(12 Pt)

BAE621 Structural Engineering (3 pt)

BAE623 Surveying& Traffic Engineering (2 pt)

BAE624 Water Supply , Sanitation & Finishing (2 pt)

BAE 608 Engineering Competency Demonstration Report Writing (2pt)

SELF STUDY

BAE622 Architecture (3 pt)

Engineering 72 CP+ ICT =12 CP= 84 CP

Year 5

ICT 403	Professional Programming (2) Object Oriented	3
ICT 404	Professional Programming (3) Java	3
ICT 405	Professional Practice (1) Network	3
ICT 406	Professional Practice (2) Website	3
ICT 407	Artificial Intelligence	3

Year 5= Engineering =24 CP+ICT 15 CP= 39 CP\

Total= Yr 1+2 90CP+ Yr 3+4=84CP+ Yr 5= 39 CP=Total 213 CP

Bachelor of Engineering (Mechanical)

Year (3)

GENERAL APPLIED ENGINEERING (MECHANICAL) DEGREE

Subjects
BAE 401 Advanced Engineering Mathematics
BAE 402 Calculus
BAE 403 Engineering Mechanics
BAE 404 Engineering Materials & Thermodynamics

	General Electrical Knowledge	3
ICT 302	Digital Electronics	3
ICT 303	Amplifier	3
ICT 304	Material Science	

BAE 507 Electro-mechanical Energy Conversion
BAE 508 Industrial Engineering & Industrial Management
BAE511 Air-conditioning & Refrigeration Part 1
BAE613 Mechanical Instrumentation Process
BAE614 Machine Design
BAE512 Building Service Water Supply System
BAE511 Air-conditioning & Refrigeration Part 2
BAE613 Mechanical Instrumentation Process
ICT 401Advanced Mathematics 1
ICT 402Advanced Mathematics 2
ICT 305Professional Programming (1) C++

Year (4) Part 1 BE (Mechanical + General Related Subjects)

BAE 601 Computer Programming
BAE 602 Computer Network
BAE 603 Software Engineering
BAE 605 Engineering Management
BAE 606 Building Service Electrical & Mechanical Engineering

Year (4) Part 2

Bachelor of Engineering (Mechanical) Specialization (13 pt)

BAE311 Plant Engineering (2 pt)

BAE312 Design Engineering (2 pt)

BAE313 Environmental Control (2 pt)

BAE314 Mechanical Power Generation (2 pt)

BAE315 Materials Engineering (2 pt) Part 1 Part 2

BAE 608 Engineering Competency Demonstration Report Writing (3 pt)

Elective (2 pt)

Subjects
BAE513 Production Technology
BAE611 Maintenance Engineering
BAE612 Engineering Metallurgy

Engineering 72 CP+ ICT =12 CP= 84 CP

Year 5

ICT 403	Professional Programming (2) Object Oriented	3
ICT 404	Professional Programming (3) Java	3
ICT 405	Professional Practice (1) Network	3
ICT 406	Professional Practice (2) Website	3
ICT 407	Artificial Intelligence	3

Year 5= Engineering =24 CP+ICT 15 CP= 39 CP\

Total= Yr 1+2 90CP+ Yr 3+4=84CP+ Yr 5= 39 CP=Total 213 CP

BE+BMgt

Year 1+2

Advanced Diploma in Engineering 60 credit+
Diploma in Management 30 credits concurrent study

Year 3+4

Bachelor of Engineering (Electrical)

YEAR 3 +4

Subjects
BAE 401 Advanced Engineering Mathematics
BAE 402 Calculus
BAE 403 Engineering Mechanics
BAE 404 Engineering Materials & Thermodynamics
BAE 405 Advanced Circuit Analysis
BAE 406 Electro-mechanics
BAE 407 Advanced Electro-magnetics Field & Materials
BAE 408 Analogue & Digital Electronics **MANAGEMENT** Mgt 301 Electronics Business Mgt 302 Information Security

BAE 501 Advanced Power Systems & Power Transmission Networks
BAE 502 Linear System
BAE 503 Control System
BAE 504 Power System Analysis
BAE 505 Power System Optimization
BAE 506 Power System Stability & Protection
BAE 507 Electro-mechanical Energy Conversion
BAE 508 Industrial Engineering & Industrial Management **MANAGEMENT** Mgt 303 Management Information System Mgt 304 Electronics Commerce Mgt 305 Quantitative Methods for Management
BAE 601 Computer Programming
BAE 602 Computer Network
BAE 603 Software Engineering
BAE 604 Telecommunication Engineering
BAE 605 Engineering Management
BAE 606 Building Service Electrical & Mechanical Engineering
BAE 607 Radio Wave Propagation & Microwave Techniques
BAE 608 Professional Engineer Competency Demonstration Report

MANAGEMENT

Mgt 306 Human Resources Management

Mgt 307 Marketing Management

Mgt 308 Artificial Intelligence

Yr 3+4Total Engineering = 72 CP+ Management=24 cp= 96 cp

Total Credit points= 90cp (Yr 1+2)+ 96 cp (Yr 3+4+5)= 186 cp

Bachelor of Engineering (Civil)

Year (3) Part 1 ADVANCED GENERAL CIVIL ENGINEERING DEGREE LEVEL

Subjects
BAE 401 Advanced Engineering Mathematics
BAE 402 Calculus
BAE 403 Engineering Mechanics
BAE 404 Engineering Materials & Thermodynamics
BAE 508 Industrial Engineering & Industrial Management # MANAGEMENT Mgt 301 Electronics Business Mgt 302 Information Security

Year (3) Part 2 ADVANCED GENERAL CIVIL ENGINEERING DEGREE LEVEL (18 Pt)

BAE421 Building Construction Engineering (4 pt)

BAE422 Estimating (2 pt)

BAE423 Fluid Mechanics (2 pt)

BAE424 Reinforced Concrete (2 pt)

BAE425 Timber Engineering (2 pt)

BAE521 Road & Bridge (2 pt)

BAE522 Rock Mechanics (2 pt)

BAE523 Soil Mechanics (2 pt)

BAE 523A Environmental Engineering

MANAGEMENT

Mgt 303 Management Information System

Mgt 304 Electronics Commerce

Mgt 305 Quantitative Methods for Management

TOTAL 35 Pt

Year (4) Part 1

BAE 601 Computer Programming
BAE 605 Engineering Management
BAE 606 Building Service Electrical & Mechanical Engineering
BAE 609 Design Project
Total Credit points in this group

Year (4) Part 1

(12 Pt)

BAE621 Structural Engineering (3 pt)

BAE623 Surveying& Traffic Engineering (2 pt)

BAE624 Water Supply , Sanitation & Finishing (2 pt)

BAE 608 Engineering Competency Demonstration Report Writing (2pt)

SELF STUDY

BAE622 Architecture (3 pt)

MANAGEMENT

Mgt 306 Human Resources Management

Mgt 307 Marketing Management

Mgt 308 Artificial Intelligence

Yr 3+4Total Engineering = 72 CP+ Management=24 cp= 96 cp

Total Credit points= 90cp (Yr 1+2)+ 96 cp (Yr 3+4+5)= 186 cp

Bachelor of Engineering (Mechanical)

Year (3)

GENERAL APPLIED ENGINEERING (MECHANICAL) DEGREE

Subjects
BAE 401 Advanced Engineering Mathematics
BAE 402 Calculus
BAE 403 Engineering Mechanics
BAE 404 Engineering Materials & Thermodynamics
BAE 507 Electro-mechanical Energy Conversion
BAE 508 Industrial Engineering & Industrial Management
BAE511 Air-conditioning & Refrigeration Part 1
BAE613 Mechanical Instrumentation Process
BAE614 Machine Design
BAE512 Building Service Water Supply System
BAE511 Air-conditioning & Refrigeration Part 2
BAE613 Mechanical Instrumentation Process
MANAGEMENT Mgt 301 Electronics Business Mgt 302 Information Security

Year (4) Part 1 BE (Mechanical + General Related Subjects)

BAE 601 Computer Programming

BAE 602 Computer Network
BAE 603 Software Engineering
BAE 605 Engineering Management
BAE 606 Building Service Electrical & Mechanical Engineering

MANAGEMENT

Mgt 303 Management Information System

Mgt 304 Electronics Commerce

Mgt 305 Quantitative Methods for Management

Year (4) Part 2

Bachelor of Engineering (Mechanical) Specialization (13 pt)

BAE311 Plant Engineering (2 pt)

BAE312 Design Engineering (2 pt)

BAE313 Environmental Control (2 pt)

BAE314 Mechanical Power Generation (2 pt)

BAE315 Materials Engineering (2 pt) Part 1 Part 2

BAE 608 Engineering Competency Demonstration Report Writing (3 pt)

Elective (2 pt)

Subjects
BAE513 Production Technology
BAE611 Maintenance Engineering
BAE612 Engineering Metallurgy

MANAGEMENT

Mgt 306 Human Resources Management

Mgt 307 Marketing Management

Mgt 308 Artificial Intelligence

Yr 3+4Total Engineering = 72 CP+ Management=24 cp= 96 cp

Total Credit points= 90cp (Yr 1+2)+ 96 cp (Yr 3+4+5)= 186 cp

PROFESSIONAL DIPLOMA IN SCHOOL & VOCATIONAL EDUCATION)

(BACHELOR OF EDUCATION (SCHOOL & VOCATIONAL EDUCATION)

www.highlightcomputer.com/bedschoolvet.htm

This course aims to provide the teacher education theories and practical applications in school and vocational education classes.

Principles of teaching , learning , training and assessment are combined with instruction design methodologies and knowledge related to learning environment.

Modern learning technologies and technology in classroom contexts are added..

Teachers who are working in voluntary schools can be provided with necessary teaching and training knowledge to work as qualified teachers by attending this course.

Pre-requisite

Degree Holders	Non Degree Holders
• Bachelor Degree & Teaching Experiences	• Completion of Year 11+12 (Certificate in General & Vocational Education Level 4) PLUS • Completion of Diploma level qualification in Engineering, IT & Management courses of IQY Technical College & other vocational colleges/schools

Course structure

This course integrates Diploma in Teaching Practice , Teaching Practicum and Advanced study in Education to achieve 120 credit points required to get Professional Diploma in School & Vocational Education .awarded by IQY Technical College (Authorized Training Centre of Singapore Institute of Engineering Technologists, Member of ASEAN Federation of Engineering Organizations)

The universities (STC Technological University & St Clements University) affiliated to IQY Technical College award Bachelor of Education (School & Vocational Education) to holders of Professional Diploma in School & Vocational Education.

Year 1/2

Diploma in Teaching Practice (60 credits)

jointly taught by (STC Technological University/ St Clements University)

Singapore Institute of Engineering Technologists/ IQY Technical College)

ENROLMENT LINK

Click the following link & fill the form.

http://www.emailmeform.com/builder/form/tq48xQ6acb

List of Subjects for Teaching Practice

ED101P Teaching Support (5 Credits)
ED102P Application of Information Technology in School Education (5 Credits)
ED103P Classroom Management (5 Credits)
ED104P Teaching Portfolio (5 Credits)
ED105P Inclusive Teaching (5 Credits)
ED106P Subject Area Knowledge (5 Credits)

ED107 Theory of Education, Educational Technology & Teaching Practice

(15 Credits)

ED107A-Theory of Education (ED101) (Slide 1 to 60 Principle of Learning)
ED107B-Education Technology (ED102) (Slide 61 to 100)
ED107C-Teaching Practice (ED103 Classroom Management) (Slide 101 to 140)
ED107D-Lesson Planning (ED104 Teaching Portfolio)(Slide 241 to 300)
ED107E-Teaching& Learning (Slide 141 to 160+ Slide 200 to 240)
ED107F-Inclusive Teaching (ED105 Inclusive Teaching Slide 161 to 200)
ED107G-Evaluation& Assessment (Slide 301 to 320)

ED108 Curriculum Study , Teaching & Learning (15- Credits)
Interpreting Curriculums

Study Sequence for Graduates

ED106 Subject Area Knowledge (Present Degree)

Part (1) Theory Training & Assignment (Certificate in Teaching Practice)

ED107 Theory of Education, Educational Technology & Teaching Practice (15 Credits)
ED108 Curriculum Study , Teaching & Learning (15 Credits)

Part (2) Teaching Practice Portfolio Presentation (Diploma in Teaching Practice)

ED101P Teaching Support (5 Credits)
ED102P Application of Information Technology in School Education (5 Credits)
ED103P Classroom Management (5 Credits)
ED104P Teaching Portfolio (5 Credits)
ED105P Inclusive Teaching (5 Credits)

Study Sequence for Experienced Teachers

ED106 Subject Area Knowledge (Present Degree)

Part (1) Theory Training & Assignment (Certificate in Teaching Practice)

ED107 Theory of Education, Educational Technology & Teaching Practice (15 Credits)
ED108 Curriculum Study , Teaching & Learning (15 Credits)

Part (2) Teaching Practice Portfolio Presentation (Diploma in Teaching Practice)

The following subjects can be exempted by presenting the reference letter from the school.

ED101 Teaching Support (5 Credits)
ED103 Classroom Management (5 Credits)
ED105 Inclusive Teaching (5 Credits)

The following subject needs to be studied

ED102 Application of Information Technology in School Education (5 Credits)

Teaching portfolio needs to be presented for the following subject

ED104 Teaching Portfolio(5 Credits)

REFERENCE EDUCATION THEORIES

ED 101 Theory of Education (5 Credits)
ED 102 Education Technology (5 Credits)
ED 103 Teaching Practice (5 Credits)
ED 104 Lesson Planning (5 Credits)
ED 105 Principle of Learning (5 Credits)
ED 106 Interpreting Curriculums (5 Credits)

VIDEOS

IQY Teacher Training 1

https://youtu.be/CHqmQ1Ifwa4

IQY Teacher Training 2

https://youtu.be/i-VpgngRumw

IQY Teacher Training 3

https://youtu.be/eYujIkvdPYw

IQY Teacher Training 4

https://youtu.be/n9y49b5qO8g

TEACHER TRAINING- IQY-AUDIO Download Links

VN860195.zip (96.74MB)
http://www.filefactory.com/file/6s4a0e57kz25/n/VN860195.zip

VN860197.zip (98.04MB)
http://www.filefactory.com/file/19yvgu2vqrdl/n/VN860197.zip

VN860196.zip (39.01MB)
http://www.filefactory.com/file/5ukezf8qmmb3/n/VN860196.zip

VN860136 (147MB)

http://www.filefactory.com/file/3wbq5wqon6zn/VN860136.zip

STUDY GUIDES & LESSONS

ED101 to ED106

www.highlightcomputer.com/ED101106.pdf

ED107 Lessons

ED107 Exercises
www.highlightcomputer.com/ED107Exercises.pdf
ED107 Part 1 (Slide 1 to 20) ED107A-Theory of Education (ED101) (Slide 1 to 60 Principle of Learning)
www.highlightcomputer.com/ED1071.pdf

ED107 Part 2 (Slide 21 to 40) ED107A-Theory of Education (ED101) (Slide 1 to 60 Principle of Learning)

www.highlightcomputer.com/ED1072.pdf

ED107 Part 3 (Slide 41 to 60) ED107A-Theory of Education (ED101) (Slide 1 to 60 Principle of Learning)

www.highlightcomputer.com/ED1073.pdf

ED107 Part 4 (Slide 61 to 80) ED107B-Education Technology (ED102) (Slide 61 to 100)

www.highlightcomputer.com/ED1074.pdf

ED107 Part 5 (Slide 81 to 120) ED107B-Education Technology (ED102) (Slide 61 to 100)+ ED107C-Teaching Practice (ED103 Classroom Management) (Slide 101 to 140)

www.highlightcomputer.com/ED1075.pdf

ED107 Part 6 (Slide 121 to 140) ED107C-Teaching Practice (ED103 Classroom Management) (Slide 101 to 140)

www.highlightcomputer.com/ED1076.pdf

ED107 Part 7 (Slide 141 to 160) ED107E-Teaching& Learning (Slide 141 to 160)

www.highlightcomputer.com/ED1077.pdf

ED107 Part 8 (Slide 161 to 180) (ED105 Inclusive Teaching Slide 161 to 200)

www.highlightcomputer.com/ED1078.pdf

ED107 Part 9 (Slide 181 to 200) (ED105 Inclusive Teaching Slide 161 to 200)

www.highlightcomputer.com/ED1079.pdf

ED107 Part 10 (Slide 201 to 220) (ED107E-Teaching & Learning Slide 200 to 240)

www.highlightcomputer.com/ED10710.pdf

ED107 Part 11 (Slide 221 to 240) (ED107E-Teaching& Learning Slide 200 to 240)

www.highlightcomputer.com/ED10711.pdf

ED107 Part 12 (Slide 241 to 260) ED107D-Lesson Planning (ED104 Teaching Portfolio)(Slide 241 to 300)

www.highlightcomputer.com/ED10712.pdf

ED107 Part 13 (Slide 261 to 280) - ED107D Lesson Planning (ED104 Teaching Portfolio)(Slide 241 to

300)

www.highlightcomputer.com/ED10713.pdf

ED107 Part 14 (Slide 261 to 300) - ED107D Lesson Planning (ED104 Teaching Portfolio)(Slide 241 to 300)

www.highlightcomputer.com/ED10714.pdf

ED107 Part 15 (Slide 301 to 320)- ED107G-Evaluation& Assessment (Slide 301 to 320)

www.highlightcomputer.com/ED10715.pdf

ED108 Lessons

ED108 Exercises
www.highlightcomputer.com/ED108Exercises.pdf

ED108 Part 1 (Slide 1 to 20)
www.highlightcomputer.com/ED1081.pdf

ED108 Part 2 (Slide 21 to 40)
www.highlightcomputer.com/ED1082.pdf

ED108 Part 3 (Slide 41 to 60)
www.highlightcomputer.com/ED1083.pdf

ED108 Part 4 (Slide 61 to 80)
www.highlightcomputer.com/ED1084.pdf

ED108 Part 5 (Slide 81 to 100)
www.highlightcomputer.com/ED1085.pdf

ED108 Part 6 (Slide 101 to 120)
www.highlightcomputer.com/ED1086.pdf

ED108 Part 7 (Slide 121 to 140)
www.highlightcomputer.com/ED1087.pdf

ED108 Part 8 (Slide 141 to 160)
www.highlightcomputer.com/ED1088.pdf

OPTIONAL
(Certificate in Vocational Education& Training-Engineering Technology Teaching)

Online training & assignment

http://www.highlightcomputer.com/gtc.htm

ADDITIONAL REFERENCES FOR ED107 LESSONS

ED 101 Theory of Education

www.highlightcomputer.com/ED101.ppt

ED 102 Education Technology

www.highlightcomputer.com/ED102.ppt

Integration of Learning Technology in Teaching & Learning Part 1

http://youtu.be/bV_CJdY7fs0

Technology in Classroom

http://youtu.be/rzLQq6D6-OU

ED 103 Teaching Practice

www.highlightcomputer.com/ED103Part1.ppt

www.highlightcomputer.com/ED103Part2.ppt

ED 104 Lesson Planning

www.highlightcomputer.com/ED104.ppt

ED 105 Principle of Learning

www.highlightcomputer.com/ED105.ppt

ED 106 Interpreting Curriculums

www.highlightcomputer.com/ED106.ppt

ED101 to ED106 ASSIGNMENTS

www.highlightcomputer.com/ED101106.pdf

Year 3 / 4

Professional Diploma in School & Vocational Education

60 credits in the following subjects

ED437 Teaching Skills (5 Credits)

ED438 Assessment & Feedback (5 Credits)

ED439 Fostering Students' Learning (5 Credits)

ED 402AEducational Leadership & Change Management in School Education

(10 Credits)

ED407A Learning Environment in School Education(10 Credits)

ED440Science Teaching (5 Credits)
ED441 Mathematics Teaching (5 Credits)
ED442 Technology Teaching (5 Credits)
ED443 TVET Teaching (10 Credits)

GROUP (1) CURRICULUM SUBJECTS

ED437 Teaching Skills (5 Credit Points)

- **ED431-Critical Thinking**

www.highlightcomputer.com/ED431CriticalThinking.pptx

VIDEOS

https://youtu.be/Cekuc04E2xM

Assessment

Assignment

Refer your textbooks, select one chapter and write the followings

- the main purpose, the key question, the most important information, the main references or conclusions, the key idea, the main assumptions of the material, the implications, and the main point of view.
- Prepare one assessment requiring critical thinking by the students.
- Do internet research by using www.google.com and type Socratic questioning then submit the examples of Socratic questions.

- **ED431-Reflection& Evaluation (Day 2)**

www.highlightcomputer.com/ED431ReflectionEvaluation.pptx

VIDEO

https://youtu.be/Ezre_83QIfE

Assessment

Assignment

Write the lesson plan on howwill you provide Problem Based Learning & Self Reflection for a group of students

Write one significant event in your class teaching and write down your own plan how to improve your teaching.

- **ED431-Teaching and learning strategies (Day 3)**

www.highlightcomputer.com/ED431Teachinglearningstrategies.pptx

VIDEO

https://youtu.be/gMJi_3CSDq0

Assessment

Assignment

- Outline 3 teaching strategies that you prefer to apply in your teaching and discuss the good points and bad points. Also write how to improve them for best teaching and learning

ED438 Assessment & Feedback (5 Credit Points)

ED432A-assessment principles+ED432B-constructive feedback+

Lessons

Down load and study the following power point slides and answer the questions

www.highlightcomputer.com/ED432ABC.pptx

VIDEO

https://youtu.be/CIi1k4NECoQ

Assessment

Assignment

ED432A-assessment principles

Provide three assessment evidences that you use in teaching.

ED432B-constructive feedback

Provide three assessment feedbacks that you provide to your students

ED439 Fostering Students' Learning (5 Credit Points)

ED433H-consequences for student learning+ED433I-improving students learning+ED433J-different ways of thinking about university teaching+ED433K-identify problems and issues

Lessons

Down load and study the following power point slides and answer the questions

www.highlightcomputer.com/ED433HIJK.pptx

VIDEO

https://youtu.be/F2gUlg4qBho

Assessment

Assignment

Provide one task that you want your students to do critical thinking.

Write one learning outcome of the lesson that you are teaching & provide your plan how to teach, facilitate & assess the students to reach that outcome

ED434H-reflect critically on and evaluate own teaching+ED434J-reflecting on learning from formal learning programs

Lessons

Down load and study the following power point slides and answer the questions

www.highlightcomputer.com/ED434HIJK.pptx

VIDEO

https://youtu.be/wIbNCUXxlMI

Assessment

Assignment

Write a plan how will you maximize the effectiveness of teaching & learning for your students

ED 402A Educational Leadership & Change Management for School Education (10 CP)

Video

· Day 10 Session 2-Change Management

http://youtu.be/ynkcUcKr8tQ

· Powerpoint+Audio
POWER POINT

· Day10Session2+3.ppt (0.57MB)
http://www.mongroupsydney1.com/Day10Session23.ppt

· AUDIO

http://yourlisten.com/Kyaw.Naing/day-10-session-23

ASSIGNMENT

Down load the following file

www.highlightcomputer.com/MgtAdvDip.zip

Read the contents in" Mgt 211 " and answer the followings.
Q1.How does leadership relate to management?
Q2.Explain Instructional leadership
Q3.Explain Transformational leadership
Q4.Explain Moral leadership
Q5.Explain Participative leadership
Q6.Explain Managerial leadership
Q7.Explain Contingent leadership
Q8.Explain New Model of Leadership
Q9.Compare manager and leader.
Q10.What are the competencies of a leader?
Q11.What type of leadership is preferred by you and provide the reason. ·

-

ED407A Learning Environment in Schools (10 CP)

· POWER POINT
Day10Session1.ppt (11.78MB)

http://www.mongroupsydney1.com/Day10Session1.ppt

AUDIO
http://yourlisten.com/Kyaw.Naing/day-10-session-1

ASSIGNMENT

Based on your classroom experience, write the factors important for class room environment.

Project

Prepare a project plan how to develop a school that will provides the education for needy students.

GROUP (2) TEACHING PRACTICE SUBJECTS

ED440Science Teaching (5 credits)

Review the Science Teaching Videos in the following links
http://www.highlightcomputer.com/y712lessons.htm#A
http://www.highlightcomputer.com/y910.htm
Then develop your own teaching plan which combines e-Learning strategies. Your plan should contain

- Written notes to be given to students
- The lessons to be explained to the students
- Exercises to be given to the students
- Time frame and detailed teaching plan

ED441 Mathematics Teaching (5 credits)

Review the Mathematics Teaching Videos in the following links
http://www.highlightcomputer.com/y712lessons.htm#A
http://www.highlightcomputer.com/y910.htm
Then develop your own teaching plan which combines e-Learning strategies. Your plan should contain

- Written notes to be given to students
- The lessons to be explained to the students
- Exercises to be given to the students
- Time frame and detailed teaching plan

ED442 Technology Teaching (5 credits)

Review the Technology Teaching Videos in the following links
http://www.highlightcomputer.com/y712lessons.htm#A
http://www.highlightcomputer.com/y910.htm
Then develop your own teachingplan which combines e-Learning strategies. Your plan should contain

- Written notes to be given to students
- The lessons to be explained to the students
- Exercises to be given to the students
- Time frame and detailed teaching plan

GROUP (3) TVET TEACHING SUBJECTS

ED443 TVET Teaching (10 Credits)

Lesson Video

NNER Conference Presentation by Myanmar Vocational Training Collaboration Youtube

https://youtu.be/2ZYnsJWSZU4

(1) Select any two Vocational Education Subjects from the following link
http://www.mongroupsydney.com/mvtclessons.htm

(2)Teach the students
(3) Provide evidence of their works

GROUP (4) SELF DEVELOPMENT SUBJECTS

www.highlightcomputer.com/selfdevelopmentsubjects.htm

Download from above link

ED 308 Computer Supported Learning & Distance Education.zip (44.37MB)

ED 408 Middle & High School Teaching.zip (3.63MB)

ED 403 School Culture.zip (14.7MB)

ED 305 Science Teaching.zip (14.87MB)

ED 306 Technology Teaching.zip (4.63MB)

ED 304 Maths Teaching.zip (10.03MB)

ED 204 School & Vocational Education.zip (26.56MB)

ED 208 Inclusive Teaching.zip (5.38MB)

ED 207 Teacher Education.zip (9.65MB)

ED 205 Teaching & Measuring.zip (3.79MB)

ED 203 K-12 Education.zip (3.17MB)

BE Industrial Engineering

First year

Teaching period	Subject title	Credit points
ICT103	Programming for Engineers and Scientists	15
FE101	Number Systems and Linear Algebra	15
FE102	Principles of Physics A	15
ADMEC203	Engineering Design and Problem Solving	15
ME303	Computer Aided Design	15
EE201/EE302	Calculus and Differential Equations	15
EE101/113/202	Introduction to Electrical and Electronic Engineering	15
ME101	Mechanics of Solids	15

Second year

Teaching period	Subject title	Credit points
BAE401	Vector Calculus	15
ADMEC203	Ideas to Innovation	15
RE010	Engineering Materials	15
ME201	Fluid Mechanics	15
BAE312	Systems Modelling	15
RE001/RE005	Sustainability and Renewable Energy Design	15

Teaching period	Subject title	Credit points
BAE508	Engineering Enterprise	15
BAE402	Engineering Probability and Statistics	15

Third year

Teaching period	Subject title	Credit points
BAE503	Control Systems	15
BAE408	Digital Electronics and Controllers	15
EE306/EE624	Measurement and Instrumentation	15
BAE614	Mechanical Component Design	15
BAE672-ME-EE Course	Systems Engineering	15
BAE404/ME102/ ME107	Thermodynamics	15
BAE608	Engineering Design Project	30

Fourth year

Teaching period	Subject title	Credit points
BAE605	Engineering Project	30
Elective EE/CE/ME		

Teaching period	Subject title	Credit points
BAE608	Engineering Major Project	60
internship	Work Integrated Learning	60
BAE606	Integrated Building Design	15
Mgt307	Commercialising Innovation	15
BAE682 (ME Mech)	Design for Manufacture	15
BAE691 (ME Mech)	Robotic Systems Design	15

Bachelor of Engineering Management

To complete Bachelor of Engineering Managements, the following units are required to complete. Total Credit points= 120

	Units	Credit Points
Part 1	**General Management**	
	Mgt 101 Management	5
	Mgt 102 Performance Management	5
	Mgt 104 Project Management	5
	Mgt 105 Quality Management	5
	Mgt 106 Financial Management	5
	Mgt107 Industrial Risk & Safety Management	5
Part 2	**Leadership & Management**	
	Mgt 202 Change Management	5
	Mgt 203 Inventory & Budget Management	5
	Mgt 204 Continuous Improvement Management	5
	Mgt 208 Safety Management	5
	Mgt 209 Risk Management	5
	Mgt 211 Leadership	5
	Mgt 213 Conflict Management	5
Part 3	**Engineering & Information Management**	
	Mgt 210 Professional Development Management	5
	Mgt 303 Management Information System	5
	Mgt 305 Quantitative Methods for Management	5
	Mgt 306 Human Resources Management	5
	BAE606 Building Service Engineering Project	5

	RE007 Energy Efficiency Management	5
	RE016/BAE 508-Design& Management	5
Part 4	**Engineering Topics**	
	E071 Contract Management	5
	K041 Energy Efficient Building Management	5
	ME 205 Manufacturing Processes-and-Materials	5
	ME 303 Computer Aided Design and Manufacturing	5

Professional Diploma/ BE (Special Program) for Experienced Site Engineers

This course is designed to provide formal engineering degree qualification for experienced engineers with relevant engineering diploma by combining their engineering experience and relevant BE level higher education studies.

It has total 120 credit points in which 60 credits points is awarded for engineering diploma and the remaining points are to be assessed on work experience, training and higher education studies.

Pre-requisite

- AGTI (3 Years) with minimum 7 Years experience
- Other engineering diplomas/ certificates with non engineering degrees such as BSc/BA/BEcon /BSc(IT) etc and minimum 10 years experience
- Matured age engineers/ technicians
- Marine Engineers (MOT Second Class)

Arrangement of study

B Tech- Completion of Part 2 + 3 Stream 1 or Stream 2—for Experienced +Non Experience Engineers

B E- Completion of Part 1+2+3 Stream 1 or Stream 2-for Only Experienced Engineers

PART (1)- Entry Qualification and Experience Assessment

ENG601- Engineering Studies
AGTI Certificate / Relevant Engineering Diplomas(60 Credits)

ENG602-Engineering Applications
Work Experience Curriculum Vitae (10 Credits)

ENG603-Engineering Practicals
Engineering Practice Report or Experience Portfolio (10 Credits)

BAE705 Engineering Competency Development
Other degree OR Appropriate Self Study Record
Continuing Professional Development
(10 Credits)

PART (2)- Degree Level Studies in General Engineering and Management

Degree Level Study Part 1-Engineering Mathematics+Materials+Mechanic Seminars (4 days)
BAE401 Engineering Mathematics
BAE402 Calculus
RE010 Engineering Materials
BAE403 Engineering Mechanics (10 Credits)

Study Record

http://www.iqytechnicalcollege.com/studyrecordmyanmar.pdf

Degree Level Study Part 2 -Engineering Management Seminars (2 days)

BAE508 Management
BAE605 Engineering Management (10 Credits)

Study Record

http://www.iqytechnicalcollege.com/studyrecordmyanmar.pdf

PART (3)- Degree Level Studies in Higher Engineering

Stream 1-Combined Studies
(To be supported by Live Online Lectures)

Stream 2-Discipline Studies-
(Personal Attendance or Self study Online)

Stream (1)- Combined studies-

- Professional Diploma/BE (Electrical and Renewable Energy Engineering)
- Professional Diploma/BE (Civil and Renewable Energy Engineering)
- Professional Diploma/BE (Mechanical and Renewable Energy Engineering)
  Which will depend on the discipline of AGTI/ Engineering Diploma

Degree Level Study Part 3 -Engineering Subjects Seminars (4 days)
5 subjects at BE Final Level (10 Credits)

- RE505- Green Building Design (3 credits)
- RE016A-Design & Management (4 credits)

- BAE 523A Environmental Engineering (1 credit)
- RE003- Solar and Thermal Energy Systems (1 credit)
- RE004- Energy Storage Systems (1 credit)

Stream (2)- Discipline studies

- Professional Diploma/BE (Electrical)
- Professional Diploma/BE (Civil)
- Professional Diploma/BE (Mechanical)
  Which will depend on the discipline of AGTI/ Engineering Diploma

Degree Level Study -Engineering Subjects Seminars (4 days)

3 or 4 subjects at BE Final Level (10 Credits)

Civil

BAE621 Structural Engineering

BAE421 Building Construction Engineering

BAE623 Surveying & Traffic Engineering

Study Record

http://www.iqytechnicalcollege.com/studyrecordmyanmar.pdf

Mechanical

Mechanical
BAE613 Mechanical Instrumentation Process
BAE311 Plant Engineering
BAE614 Machine Design

Study Record

http://www.iqytechnicalcollege.com/studyrecordmyanmar.pdf

Electrical

Electrical Power

BAE 501 Advanced Power Systems& Power Transmission Networks

BAE 506 Power System Stability& Protection

RE013-Electrical Machines

Electronics

RE014-Electronics Control

BAE 604 Telecommunication Engineering

BAE 601 Computer Programming

Or other subjects by discussing with trainer Study Record

Professional Diploma/ BE (Special Program) for Experienced Site Engineers

This course is designed to provide formal engineering degree qualification for experienced engineers with relevant engineering diploma by combining their engineering experience and relevant BE level higher education studies.

It has total 120 credit points in which 60 credits points is awarded for engineering diploma and the remaining points are to be assessed on work experience, training and higher education studies.

Pre-requisite

- AGTI (3 Years) with minimum 7 Years experience
- Other engineering diplomas/ certificates with non engineering degrees such as BSc/BA/BEcon /BSc(IT) etc and minimum 10 years experience
- Matured age engineers/ technicians
- Marine Engineers (MOT Second Class)

Arrangement of study

B Tech- Completion of Part 2 + 3 Stream 1 or Stream 2—for Experienced +Non Experience Engineers

B E- Completion of Part 1+2+3 Stream 1 or Stream 2-for Only Experienced Engineers

PART (1)- Entry Qualification and Experience Assessment

ENG601- Engineering Studies
AGTI Certificate / Relevant Engineering Diplomas(60 Credits)

ENG602-Engineering Applications
Work Experience Curriculum Vitae (10 Credits)

ENG603-Engineering Practicals
Engineering Practice Report or Experience Portfolio (10 Credits)

BAE705 Engineering Competency Development
Other degree OR Appropriate Self Study Record
Continuing Professional Development
(10 Credits)

PART (2)- Degree Level Studies in General Engineering and Management

Degree Level Study Part 1-Engineering Mathematics+Materials+Mechanic Seminars (4 days)
BAE401 Engineering Mathematics
BAE402 Calculus
RE010 Engineering Materials
BAE403 Engineering Mechanics (10 Credits)

Study Record

http://www.iqytechnicalcollege.com/studyrecordmyanmar.pdf

Degree Level Study Part 2 -Engineering Management Seminars (2 days)

BAE508 Management
BAE605 Engineering Management (10 Credits)

Study Record

http://www.iqytechnicalcollege.com/studyrecordmyanmar.pdf

PART (3)- Degree Level Studies in Higher Engineering

Stream 1-Combined Studies
(To be supported by Live Online Lectures)

Stream 2-Discipline Studies-
(Personal Attendance or Self study Online)

Stream (1)- Combined studies-

- Professional Diploma/BE (Electrical and Renewable Energy Engineering)
- Professional Diploma/BE (Civil and Renewable Energy Engineering)
- Professional Diploma/BE (Mechanical and Renewable Energy Engineering)
  Which will depend on the discipline of AGTI/ Engineering Diploma

Degree Level Study Part 3 -Engineering Subjects Seminars (4 days)
5 subjects at BE Final Level (10 Credits)

- RE505- Green Building Design (3 credits)
- RE016A-Design & Management (4 credits)

- BAE 523A Environmental Engineering (1 credit)
- RE003- Solar and Thermal Energy Systems (1 credit)
- RE004- Energy Storage Systems (1 credit)

Stream (2)- Discipline studies

- Professional Diploma/BE (Electrical)
- Professional Diploma/BE (Civil)
- Professional Diploma/BE (Mechanical)
  Which will depend on the discipline of AGTI/ Engineering Diploma

Degree Level Study -Engineering Subjects Seminars (4 days)

3 or 4 subjects at BE Final Level (10 Credits)

Civil

BAE621 Structural Engineering

BAE421 Building Construction Engineering

BAE623 Surveying & Traffic Engineering

Study Record

http://www.iqytechnicalcollege.com/studyrecordmyanmar.pdf

Mechanical

Mechanical
BAE613 Mechanical Instrumentation Process
BAE311 Plant Engineering
BAE614 Machine Design

Study Record

http://www.iqytechnicalcollege.com/studyrecordmyanmar.pdf

Electrical

Electrical Power

BAE 501 Advanced Power Systems& Power Transmission Networks

BAE 506 Power System Stability& Protection

RE013-Electrical Machines

Electronics

RE014-Electronics Control

BAE 604 Telecommunication Engineering

BAE 601 Computer Programming

Or other subjects by discussing with trainer Study Record

BE (Electrical/Civil/Mechanical with Renewable Energy) Programs

Pre-requisite= Advanced Diploma in Engineering (Electrical/Machnaical/Civil)

Total Credit points= 60

BE (Electrical/Mechanical/Civil with Renewable Energy) (Total 12 units)

YEAR 3 (24 credit points / 2 points per unit)

1 BAE 401 Advanced Engineering Mathematics

2 BAE 402 Calculus

3 BAE 403 Engineering Mechanics

4 BAE 404 Engineering Materials & Thermodynamics

5 RE001- Foundation Studies in Renewable Energy and Sustainability

6.RE003- Solar and Thermal Energy Systems

7.RE004- Energy Storage Systems

8 RE005- Renewable Energy Resource Analysis

9.RE006- Wind Energy Conversion Systems

10 RE010-Engineering Materials

11 RE012a-Electrical Engineering Part 1

12RE016/ BAE508-Design & Project Management

BE (Electrical with Renewable Energy)

YEAR 4 (36 credit points / 3 points per unit)

1 BAE 601 Computer Programming

2 BAE 602 Computer Network

3 BAE 603 Software Engineering

4 RE012b-Electrical Engineering Part 2

5 RE002- Grid Connected Photovoltaic Power Systems

6 RE013-Electrical Machines

7 RE014-Electronics Control
8 RE015-Electrical Project/ Practice

9 BAE 501 Advanced Power Systems & Power Transmission Networks

10 BAE 506 Power System Stability & Protection

11 BAE 604 Telecommunication Engineering

12.RE007- Energy System Efficiency

13 BAE 608 Professional Engineer Engineering Competency Demonstration Report & BAE 605 Engineering Management (Completion Certification with no credit points)

BE (Civil with Renewable Energy)

YEAR 4 (36 credit points / 3 points per unit)

1 RE011a-Civil & Mechanical Engineering Part 1

2 RE011b-Civil & Mechanical Engineering Part 2a

3 BAE 606 Building Service Electrical & Mechanical Engineering

4BAE421 Building Construction Engineering

5 BAE422 Estimating

6 BAE423 Fluid Mechanics

7 BAE424 Reinforced Concrete

8 BAE522 Rock Mechanics

9 BAE 523A Environmental Engineering

10BAE621 Structural Engineering

11BAE623 Surveying & Traffic Engineering

12BAE624 Water Supply , Sanitation & Finishing

13 BAE 608 Professional Engineer Engineering Competency Demonstration Report & BAE 605 Engineering Management (Completion Certification with no credit points)

BE (Mechanical with Renewable Energy)

YEAR 4 (36 credit points / 3 points per unit)

1 RE011a-Civil & Mechanical Engineering Part 1

2 RE011b-Civil & Mechanical Engineering Part 2a

3BAE 606 Building Service Electrical & Mechanical Engineering

4 BAE311 Plant Engineering
5 BAE314 Mechanical Power Generation
6 BAE315 Materials Engineering

7 BAE511 Air-conditioning & Refrigeration

8 BAE512 Building Service Water Supply System
9 BAE613 Mechanical Instrumentation Process

10 BAE614 Machine Design
11.RE007- Energy System Efficiency
12 BAE 601 Computer Programming

13 BAE 608 Professional Engineer Engineering Competency Demonstration Report & BAE 605 Engineering Management (Completion Certification with no credit points)

BE (Electrical/Civil/Mechanical with Renewable Energy) Programs

Pre-requisite= Advanced Diploma in Engineering (Electrical/Machnaical/Civil)

Total Credit points= 60

BE (Electrical/Mechanical/Civil with Renewable Energy) (Total 12 units)

YEAR 3 (24 credit points / 2 points per unit)

1 BAE 401 Advanced Engineering Mathematics

2 BAE 402 Calculus

3 BAE 403 Engineering Mechanics

4 BAE 404 Engineering Materials & Thermodynamics

5 RE001- Foundation Studies in Renewable Energy and Sustainability

6.RE003- Solar and Thermal Energy Systems

7.RE004- Energy Storage Systems

8 RE005- Renewable Energy Resource Analysis

9.RE006- Wind Energy Conversion Systems

10 RE010-Engineering Materials

11 RE012a-Electrical Engineering Part 1

12RE016/ BAE508-Design & Project Management

BE (Electrical with Renewable Energy)

YEAR 4 (36 credit points / 3 points per unit)

1 BAE 601 Computer Programming

2 BAE 602 Computer Network

3 BAE 603 Software Engineering

4 RE012b-Electrical Engineering Part 2

5 RE002- Grid Connected Photovoltaic Power Systems

6 RE013-Electrical Machines

7 RE014-Electronics Control
8 RE015-Electrical Project/ Practice

9 BAE 501 Advanced Power Systems & Power Transmission Networks

10 BAE 506 Power System Stability & Protection

11 BAE 604 Telecommunication Engineering

12.RE007- Energy System Efficiency

13 BAE 608 Professional Engineer Engineering Competency Demonstration Report & BAE 605 Engineering Management (Completion Certification with no credit points)

BE (Civil with Renewable Energy)

YEAR 4 (36 credit points / 3 points per unit)

1 RE011a-Civil & Mechanical Engineering Part 1

2 RE011b-Civil & Mechanical Engineering Part 2a

3 BAE 606 Building Service Electrical & Mechanical Engineering

4BAE421 Building Construction Engineering

5 BAE422 Estimating

6 BAE423 Fluid Mechanics

7 BAE424 Reinforced Concrete

8 BAE522 Rock Mechanics

9 BAE 523A Environmental Engineering

10BAE621 Structural Engineering

11BAE623 Surveying & Traffic Engineering

12BAE624 Water Supply , Sanitation & Finishing

13 BAE 608 Professional Engineer Engineering Competency Demonstration Report & BAE 605 Engineering Management (Completion Certification with no credit points)

BE (Mechanical with Renewable Energy)

YEAR 4 (36 credit points / 3 points per unit)

1 RE011a-Civil & Mechanical Engineering Part 1

2 RE011b-Civil & Mechanical Engineering Part 2a

3BAE 606 Building Service Electrical & Mechanical Engineering

4 BAE311 Plant Engineering
5 BAE314 Mechanical Power Generation
6 BAE315 Materials Engineering

7 BAE511 Air-conditioning & Refrigeration

8 BAE512 Building Service Water Supply System
9 BAE613 Mechanical Instrumentation Process

10 BAE614 Machine Design
11.RE007- Energy System Efficiency
12 BAE 601 Computer Programming

13 BAE 608 Professional Engineer Engineering Competency Demonstration Report & BAE 605 Engineering Management (Completion Certification with no credit points)

Bachelor of Engineering (Computer Aided Engineering)

BE (Civil with CAE)

BE (Electrical with CAE)

BE (Mechanical with CAE)

BE (CAE)

BTech (CAE) (BE Year 3 CAE)

Year 1

Diploma/ Advanced Diploma in Electro-mechanical and Construction Engineering

Year 2

Civil ETAB+REVIT

Mechanical and Electrical 181 M & E Software

Mechanical CAM/CNC/Master CAM

BTech (CAE) (BE Year 3 CAE)

Year 3

1 BAE 401 Advanced Engineering Mathematics
2 BAE 402 Calculus
3 BAE 403 Engineering Mechanics
4 BAE 404 Engineering Materials & Thermodynamics
5 RE001- Foundation Studies in Renewable Energy and Sustainability
6.RE003- Solar and Thermal Energy Systems
7.RE004- Energy Storage Systems

8 RE005- Renewable Energy Resource Analysis
9.RE006- Wind Energy Conversion Systems
10 RE010-Engineering Materials
11 RE012a-Electrical Engineering Part 1
12RE016/ BAE508-Design & Project Management

1 BAE 401 Advanced Engineering Mathematics
2 BAE 402 Calculus

Mathcad

3 BAE 403 Engineering Mechanics

Gear Box Design

MESYS Shaft System Calculation - Interface with TBK Gear Calculation

1/TBK 2014 CAD PugIn for SOLIDWORKS: pinion shaft run out

2/TBK 2014 CAD-PlugIn for SOLIDWORKS: Bidirectional connection for CAD and calculation

3/TBK 2014 CAD-PlugIn for SOLIDWORKS: Create bevel gears in SOLIDWORKS

4/TBK 2014 CAD-PlugIn for SOLIDWORKS: Cylindrical gear with involute spline hub (DIN5480)

5/TBK 2014 CAD-PlugIn for SOLIDWORKS: save eAssistant password
6/TBK 2014 CAD-PlugIn for SOLIDWORKS: Insert gear manufacturing data

7/TBK 2014 CAD-PlugIn for SOLIDWORKS: pinion shaft with involute spline (DIN 5480)

BAE 403 MESYS-Axial-Radial-Rollerbearings

BAE403 Ball Screw ReportExample_BallScrew

BAE403 DIN743_CalculationBasis

BAE403 ExampleSlewingRing

BAE403 FlyerRollingBearingAnalysis

BAE403 FlyerShaftCalculation

BAE403 FlyerTrackRoller

BAE403 MESYS_Manual

BAE403 Tutorial_Angular_Contact

BAE403 Tutorial_Cylindrical_Roller

BAE403 TutorialShaft

BAE403 TutorialShaftSystems

BAE403 TutorialShiftGearTransmission

Software

BAE403 Calcula-3.5

BAE403 Engg Power To0ls eptool20

BAE403 Engg Power Tool eptool19

BAE403 Shaft Calculation Tutorial_SolutionFiles

BAE 404 Engineering Materials & Thermodynamics

Engineering Materials

Materials Database Online Software

Engineering Thermodynamics

Videos

1/Steam

2/Solid Liquid Equilibria using Excel
3/Residue Curves for Benzene(x1) + Ethanol(x2) + Methanol(x3)
4/Sillen Basics
5/Z vs. Pr Plot using Matlab
6/Using Preos.xlsx to plot an isotherm
7/LLE Excel Macro
8/PrMix Spreadsheet
9/Publishing from Matlab to html to Microsoft Word
10/Fitting Pxy data using Excel

5 RE001- Foundation Studies in Renewable Energy and Sustainability
6.RE003- Solar and Thermal Energy Systems

RE001+003 Charge Controller V1.95-Windows

RE001+003 eLOG-Windows

RE001+003 Inverter(SHI&STI)V1.1-Windows

RE001+003 Inverter(TP)V1.1-Windows

RE001+003 Inverter(UPower)V1.2-Windows

RE001+003 SPP-02(Sealed)V4.0-Windows

RE001+003 SunDATForSketchUp-V3-9-0-B12

RE001+003-SPP Tools(Li)V3.0

Wire Calculator- Online

Sundata

7.RE004- Energy Storage Systems

The ESWare™ Suite

ES/Analyzer

ES/Optimizer

S/Pilot

9.RE006- Wind Energy Conversion Systems

WAsP Bundle

Wind farm production

Wake Effect Model

Micro siting

Wind Power Potential

Wind Resource Mapping

Wind Climate Estimate

Wind Atlas Generation

10 RE010-Engineering Materials

Materials Database Online Software

11 RE012a-Electrical Engineering Part 1

Circuit Draw

RE012 CLStudent_Setup
RE012 edraw-max_setup_full5371
RE012 gnucap-master

RE012 LTspiceXVII

RE012 ngspice-31_64

RE012 pecs

RE012 solveelec25ensetup

1/Spice

2/Analog Circuit Simulator

3/SIM Plus

4/Circuit Logix

5/SPICE

6/Multi SIM

7/PSPICE

8/LSPICE

9/SIMULATOR

10/Android Circuit Simulation’

NgSpice –**GnuCap** –.

EasyEDA –**CircuitLogix** –**LTSpice**

TopSpice –**Circuit Simulator 1.5j** **MacSpice** **SimScale** –**5Spice** ~~**Beige Bag**~~ **Micro-Cap 10** **PECS** –

12RE016/ BAE508-Design & Project Management

RE016-user-manual-seavus-project-viewer

Year 4

BE (Civil with CAE)

BE (Electrical with CAE)

BE (Mechanical with CAE)

BE (CAE)

Specialized Professional Software Applications- Open Studies

Diploma in Work Studies/ Advanced Diploma in Work Studies/ Bachelor of Work Studies

This course is structured as linking Skulls Recognition and Bridging of work experiences and training in vocational practice other than engineering to academic qualifications at Diploma/ Advanced Diploma and Bachelors degree levels.

This course is prepared and taught by IQY Technical College/ Myanmar Vocational Training Collaboration/ STC Technological University and St Clements University Myanmar College.

အင်ဂျင်နီယာလုပ်ငန်းမဟုတ်သောအခြားအသက်မွေးဝမ်းကျောင်းအလုပ်အတွေ့ အကြုံနှင့်လေ့ကျင့်သင်ကြားမှုများကိုအထက်တန်းပညာရေးနှင့်တက္ကသိုလ်ပညာရေးပူးပေါင်းပြီး Diploma/ Advanced Diploma/ Bachelors ဘွဲ့ များရရှိစေရန် IQY Technical College/ Myanmar Vocational Training Collaboration/ STC Technological University/ St Clements University Myanmar College တို့ က စီစဉ်သင်ကြားသည်။

Diploma in Work Studies (30 credits)

Outcome

On completion of this course, the candidates will be able to effectively provide vocational work services to the customers.

ဤသင်တန်းပြီးပါကစားသုံးသူတို့ ကိုလိုအပ်သောအလုပ်များလုပ်ပေးနိုင်မည်။

Course Structure (သင်ရိုးဖွဲ့ စည်းပုံ)

It consists of compulsory work-based unit and elective units

WS101 Vocational Studies (10 credits)

- Vocational Experience and/ or completion of Vocational Training and studies at other schools and training centres

WS102 Safety Training (5 credits)

WS103 English (5 credits)

WS104 Myanmar Vocational Training Certificate (10 credits)

Optional

WS105 Myanmar

Advanced Diploma in Work Studies (30 credits)

Outcome

On completion of this course, the candidates will be able to effectively organize and manage the services needed by the customers.

ဤသင်တန်းပြီးပါကစားသုံးသူတို့ ကိုလိုအပ်သောအလုပ်များလုပ်ပေးသောလုပ်ငန်းကိုထိရောက်စွာ စီမံခန့် ခွဲနိုင်မည်။

Course Structure

It consists of credit transfer from Diploma in Work Studies, compulsory work-based unit and compulsory theory studies units.

Credit Transfer Completion of Diploma in Work Studies (30 Credit Points)

Mgt 101 Management (5 Credit points)

Mgt 201 Customer Service Management (5 Credit points)

Mgt 203 Inventory & Budget Management (5 Credit points)

Mgt 208 Safety Management (5 Credit points)

Mgt 211 Leadership in Humanitarian Works (5 Credit points)

WS 201 Business Plan and Work Record (5 Credit points)

Total Credits = 60 (5 Credit points)

Bachelor of Work Studies (60 credits)

Outcome

On completion of this course, the candidates will be able to effectively set up the strategic tasks and judge the nature of humanities services needed by the customers

ဤသင်တန်းပြီးပါကစားသုံးသူတို့ ကိုလိုအပ်သောအလုပ်များလုပ်ပေးသောလုပ်ငန်းကိုထိရောက်စွာ စီမံခန့် ခွဲနိုင်မည်သာမကလုပ်ငန်းမဟာဗျူဟာချမှတ်ရန်ခြင့်ချိန်ကြံဆစွမ်းရည်လဲရရှိမည်။

Course Structure

It consists of credit transfer from Advanced Diploma in work Studies, compulsory self study unit compulsory theory studies units and a Work based project

Credit transfer

Completion of Diploma in Work Studies (60 Credit Points)

Subjects

(English Notes+ Myanmar Explanation)

ED 431-Critical Thinking (10 Credits)

Mgt 303 Management Information System (10 Credits)

Mgt 306 Human Resources Management (10 Credits)

Mgt302 Information Security (10 Credits)

Mgt 307 Marketing Management (10 Credits)

(English)

BWS 401 Advanced Work Studies (Individualized Unit) (10 Credits)

Total Credits 120

Sample Structure (သင်ရိုးဖွဲ့စည်းပုံနမူနာ)

Garment Factory Worker (အထည်ချုပ်လုပ်ငန်းအလုပ်သမားသို့ မဟုတ်အထည်ချုပ်သင်တန်းဆင်းသူ)

WS101 Vocational Studies (10 credits)

By submitting work experience or Certificate issued by other training school, WS101 will be given credits

အလုပ်အတွေ့အကြုံတင်ပြခြင်းသို့ မဟုတ်အခြားသင်တန်းဆင်းလက်မှတ်တင်ပြခြင်းဖြင့်

WS101 Vocational Studies (10 credits)ရရှိမည်။

Study at IQY (အောက်ပါတို့ကို IQY တွင်တက်ရန်

WS102 Safety Training (5 credits), WS103 English (5 credits)

WS104 Myanmar Vocational Training Certificate (10 credits)

ပြီးစီးပါက Diploma in Work Studies (Garment) ရရှိပြီး Advanced Diploma/ Bachelors Degree ဆက်တက်နိုင်မည်။ When completed, Diploma in Work Studies (Garment) will

be awarded and then can proceed to Advanced Diploma in Work Studies (Garment) and Bachelor of Work Studies (Garment).

WS104 Myanmar Vocational Training Certificate (10 credits)

CERTIFICATE IN AGRICULTURE FOOD PRODUCTION (MVTC201)

CERTIFICATE IN ANIMALS HANDLING (MVTC202)

CERTIFICATE IN BUSINESS (MVTC203)

CERTIFICATE IN LABORATORY WATER OPERATIONS (MVTC204)

CERTIFICTE IN COMMUNITY SERVICE (MVTC205)

CERTIFICATE IN PROPERTIES SERVICES (MVTC206)

CERTIFICATE IN PERFORMING (MVTC207)

CERTIFICATE IN PUBLIC SAFETY (MVTC208)

CERTIFICATE IN LOGISTICS (MVTC209)

As Myanmar Vocational Training Certificate is designed with the study resources for the above vocational areas, the workers who are working in other vocational areas can study ADEMC203-Design and Technology (Year 12 Level) Subjects as tertiary preparation.

မြန်မာ့အသက်မွေးဝမ်းကျောင်းပညာလေ့ကျင့်ရေးလက်မှတ်ကိုအထက်ပါလုပ်ငန်းများအတွက်စီစဉ်ထားသည်၊အဆိုပါဘာသာများသည်အလုပ်နှင့်မသက်ဆိုင်ပါက ADEMC203-Design and Technology (Year 12 Level) ကိုအထက်တန်းပညာရေးပေါင်းကူးအဖြစ်သင်နိုင်သည်။

BWS/BSc-Engg /Prof Dip Engg Sc (Course 5066689)

THS/ITC/ Year 10 မှဝင်သူများသည်အောက်ပါအစီအစဉ်အတိုင်းတက်ရမည်။

Year 1

Diploma in General Engineering and Certificate in Tertiary Preparation (First 6 months)

Diploma in Electrical/Mechanical/Civil Engineering (Myanmar Version) (Second 6 months)

Associate Degree in Work Studies-Engineering

Year 2

Advanced Diploma in Electrical/Mechanical/Civil Engineering Part 1+Associate Degree of Work Studies in Engineering (Course 332256)

Year 3

BTech/BE ဆက်မတက်နိုင်ပါက Bachelor of Work Studies-Engineering /Professional Diploma in Work Studies-Engineering ကို Year 3 တွင်အခမဲ့တက်ကာဘွဲ့ရယူနိုင်မည်။

အလုပ်အတွေ့အကြုံတစ်နှစ်ရှိပါက Bachelor of Work Studies-Engineering ကို Bachelor of Science-Engineering (Professional Diploma in Engineering Science) သို့ CV (Curriculum Vitae) တင်ပြပြီးအဆင့်မြှင့်နိုင်သည်။

IQY ကျောင်းသားအားလုံး IQY Technical College website www.iqytechnicalcollege.com

သင်ရိုးများ http://www.iqytechnicalcollege.com/offeredcourses.htm

စာရင်းသွင်းခြင်း http://www.iqytechnicalcollege.com/enrolment.htm

သင်တန်းကြေးပြန်အမ်းမူပေါ်လစီ www.highlightcomputer.com/iqyrefundpolicy.pdf

ကိုမလွဲမသွေဖတ်ရှုသိရှိရမည်။

Career Conversion System

- BE graduates can convert their specialist field by attending final year semester 2 of Professional Diploma in Engineering (Electrical/Civil/Mechanical/Building Services/ Mechatronics/Telecommunication/ICT).

- B Tech graduates can convert their specialist field by attending final year of Professional Diploma in Engineering (Electrical/Civil/Mechanical/Building Services/ Mechatronics/Telecommunication/ICT).

Fees
6.3 Lakhs Kyats (Face to Face)
4 Lakhs (Online)

Fees
(Singapore Institute of Engineering Technologist Membership Application Fee and ASEAN Engineering Technologist/ Engineering Technician/ associate Technologist/ Associate Technician Registration fees are extra)

- AGTI graduates can attend Year 3 & 4 of Professional Diploma in Engineering (Electrical/Civil/Mechanical/Building Services/ Mechatronics/Telecommunication/ICT).

Fees
6.3 Lakhs Kyats (Face to Face)
4 Lakhs (Online)

Fees
(Singapore Institute of Engineering Technologist Membership Application Fee and ASEAN Engineering Technologist/ Engineering Technician/ associate Technologist/ Associate Technician Registration fees are extra)

AGTI with over 10 years experience or with other degrees,

Please see the following link
http://www.iqytechnicalcollege.com/IPEM%20AGTI%20to%20BE%20Conversion%20Mod.pdf

AND
http://www.iqytechnicalcollege.com/IPEM%20AGTI%20to%20BE%20Conversion%20Mod.pdf

Enrolment

http://www.emailmeform.com/builder/form/T34dj3Wg8DNweJf04

Certificate in Information Technology (Introductory Course)

	St Clements+Highlight IT Course	Australian ICA20105_R1 Training Package Certificate 2 in IT
	COMPULSORY UNITS	CORE UNITS
ICT 101	Information Technology Fundamentals + Workplace Evidences	ICAU2005B Operate computer hardware ICAU2231B Use computer operating system ICAW2001B Work effectively in an IT environment
ICT 102	Computer Applications and Operations + workplace evidences	BSBCMN106A Follow workplace safety procedures ICAD2012B Design organisational documents using computing packages ICAU2006B Operate computing packages ICAU2013B Integrate commercial computing packages ICAW2002B Communicate in the workplace
	Technical Report Presentation The candidate to provide customer interaction record at the workplace. It may include log book, work record etc The candidate will need to provide the report on which programs he or she installed at workplace & clients & highlight the significant things The candidate communicate with teacher via e-mail & browse the reference sites as directed by the teacher & retrieve the information	**Elective Units** ICAS2009B Interact with clients ICAS2016B Record client support requirements ICAI2015B Install software applications ICAS2008B Maintain inventories for equipment, software and documentation ICPMM263B Access and use the internet ICPMM32B Capture a digital image

Certificate in Financial Management

Financial Management is an important aspect in Business Management. This course does not train the students to become accountants but it trains the students to understand the financial statements of the company & to assess the financial situation of the company & will be able to perform the financial management.

By doing this course, the students will be able to

- Explain how accounting information assists in making decisions.
- Describe the components of the balance sheet.
- Analyze business transactions and relate them to changes in the balance sheet.
- Compare features of proprietorships, partnerships, and corporations
- Explain how income is measured using both the accrual basis and cash basis accounting methods.
- Use the concepts of recognition, matching, and cost recovery to record revenues and expenses.
- Prepare an income statement and show how it is related to the balance sheet.
- Prepare a statement of cash flows and show how it differs from an income statement.
- Use double-entry accounting.
- Analyze and journalize transactions.
- Post journal entries to the ledgers.
- Prepare and use a trial balance.
- Correct erroneous journal entries and describe how errors affect accounts.
- Use T-accounts to analyze accounting relationships.
- Explain how computers have transformed processing of accounting data
- Explain the concept of the statement of cash flows.
- Classify activities affecting cash as operating, investing, or financing activities.
- Use the direct method to measure cash flow.
- Determine cash flows from income statement and balance sheet accounts.
- Use the indirect method to calculate cash flows from operations.
- Relate depreciation to cash flows provided by operating activities.
- Reconcile net income to cash provided by operating activities.
- Adjust for gains and losses from fixed asset sales and debt extinguishments in the statement of cash flows.
- Use the T-account approach to prepare the statement of cash flows.

Completion of this course can be given the credit in Mgt 106 Financial Management subject in Diploma in Management Course.

Learning Resources

Mgt106-Financial Management.ppt

Mgt106-Financial Management.ppt with audio explanation

Mgt106-Financial Management References.pdf

Mgt 106 Financial Management Questions.pdf

Certificate in Occupational Health and Safety (12128)

This course aims to provide the general safety knowledge for workers in all workplace.

Credit points 15

Contents

- OHS101 Workplace Safety (10 Credits)
- OHS102 Workplace Safety Risk Assessment (5 Credits)

Contents

- Safety Responsibilities
- Work Environment
- Materials Handling
- Chemical and Fire Safety
- Working at Height Safety
- Confined Space Area Safety
- General Physical and Psychological Impacts
- Electrical Safety
- CPR
- Risk Assessment

IQY Technical College

Diploma in Tourism Management

Course 214467

List of subjects (3 creditsx 10= 30 credits)

- TMGT101Tourism Management
- TMGT102TourGuiding
- TMGT103 Airline Ticketing
- TMGT104 Advertising in Tourism Management
- TMGT105 Cultural awareness in Hospitality and Tourism
- TMGT106 Tourist Safety and Security
- TMGT107 Code of Ethics of Tour Operators
- TMGT108 Global Code of Ethics for Tourism
- TMGT109 Dispute Resolution in Tourism Management
- TMGT110 Destination Attractiveness
- TMGT110 Example
- Work as Tour guide

DIPLOMA OF AUTOMOTIVE ENGINEERING

PART (1) RELATED BASIC KNOWLEDGE (13 pt) (Each 1 pt)

Maths 101+302+403 (EE201) Engineering Mathematics

Maths 301+501+303 (EE302) Advanced Engineering Mathematics

ME103 Engineering Mechanics(EE204 Engineering Physics)

Mgt 501 Basic Management (EE309 Project Management)

EE101 DC Circuit Problems

EE102 Basic Electrical Fitting & Wiring

EE103 Basic Electrical Drafting

EE104 Electrical Equipments Safety Protection

EE111 Electromagnetism & Basic Electrical Machines

EE112 Alternating Current Principle

EE113 Electrical Fundamental

EE208 Operational Amplifiers

EE209 Analogue Electronics

PART (2) BASIC MECHANICAL (6 pt) (Each 2 pt)

ME108 Principle of Engine

ME 101 Applied Mathematics+ ME 103 Engineering Mechanics

ME 102 Engineering Thermodynamics

PART (3) SPECIALIZED AUTOMOTIVE ENGINEERING (10 pt) (Each 2 pt)

AE 101 Auto Diesel+ Auto Electrics

AE 102 Auto General Engine+ Fuel System+ Transmission

AE 103 Engine Assembly +Electrical +Electronics

AE 104 Brake & Steering System

AE 105 Automotive Mechanic

DIPLOMA OF MARINE ENGINEERING

Mar E 101 Mathematics

Mar E 102 Applied Mechanics

Mar E 103 Heat & Heat Engine

Mar E 104 Engineering Drawing

Mar E 105 Workshop Technology

Mar E 106 General Seamanship

Mar E 107 Marine Electrical Practice

Mar E 108 Automation and Power Electronics

Mar E 109 Computerized Control

Mar E 110 General Engineering Knowledge

Mar E 111 Motor Engineering Knowledge

Mar E 112 General Mechanical Engineering

Mar E 113 Ship Construction

Mar E 114 Marine Engine Room Watch-keeping

Mar E 115 Electro-technology

YEAR (1)

Diploma of Management

Mgt 101 Management
Mgt 102 Performance Management
Mgt 103 Operation Management
Mgt 105 Quality Management
Mgt 106 Financial Managemment
Mgt 108 Computer Application in Management

Mgt 107 Industrial Risk & Safety Assessment
Mgt 104 Project Management

YEAR (2)

Advanced Diploma of Information Technology Management

Study the following units

ICT 103 Applied Programming

ICT 105 Systems Analysis and Programs

ICT 106 Software Engineering

ICT 202 Information Systems Principles and Networking

ICT 203 Information Systems, Analysis and Design

ICT 204 Advanced Programming

ICT 104 Program Projects

Mgt 501 Communication Skills & Management Leadership

Study BAE 508 Industrial Engineering & Industrial Management . You need to read the books in English.

(Focus on Mgt 501 Communication Skills & Mgt 501 Basic Management)

& do the exercises assigned by teacher.

YEAR (3)

Bachelor of Business (E-Business & Management)

The learning system will be based on self study. Read the given references study materials and prepare the project work. You need to read the books in English.

The following units common to MBA course are to be studied.

Mgt 301 Electronics Business
Mgt 302 Information Security
Mgt 303 Management Information System
Mgt 304 Electronics Commerce
Mgt 305 Quantitative Methods for Management
Mgt 306 Human Resources Management
Mgt 307 Marketing Management
Mgt 308 Artificial Intelligence

To assess Level 3, you need to write the report of 10 pages each on what you have learnt in the unit.

YEAR (4)

Mgt 401 Management Project

Mgt 402 Electronics Business Project

Two reports one for Management for (Mgt 303+Mgt 305+Mgt 306) & another for Electronics Business + Marketing (Mgt 301+Mgt 302+Mgt 304+Mgt 307+Mgt 308) subjects are required to be presented.

Each should contain 4000 to 6000 words of how you pursue the study in Management,, Marketing, Electronics Business subjects should be described.

The project should contain management plans, business plan & performance, task, job procedures IT integration etc of the topics of your choices.

Certificate/ Diploma in Computer Aided Engineering

Dip CAE

Topics

- ETAB
- REVIT
- Auto CAD
- Smart Plant
- Staad
- CAD WROX
- ELECTRICAL CAD
- TEKLA
- CNC
- Master CAM
- CAM

Online Training

Advanced Diploma in Engineering Design

www.highlightcomputer.com/dipenggdesign.pdf

This course trains the students to work as Engineering Design Drafters in Electrical, Civil & Mechanical Engineering Design and Construction.

The graduates of the courses satisfy the academic requirement for Associate Membership (Engineering Technician) of Singapore Institute of Engineering Technologists

The students can follow three strands

- Mechanical
- Civil
- Electrical

to complete the program

Pre-requisite

Completion of

Diploma in Engineering (Design & Drafting) or other diploma level relevant qualifications

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Course 31115 Advanced Diploma in Mechanical Engineering Design

Total 30 Credit points. Each unit has 3 credit points. Total 10 units (Accumulated credit 60 points with Diploma in Engineering (Design & Drafting)

- ME 205 Manufacturing Processes-and-Materials & ME 303 Computer Aided Design and Manufacturing
- ME101 Applied Mathematics & CE113 Structure 1
- ME102 Engineering Thermodynamics
- ME201 Fluid Mechanics
- ME104 Machine Principle
- ME 234 Wind Turbines
- ME 334 Airconditioning and Refrigeration
- ME109 Engineering Drawing
- ME110 Mechanical Engineering Design Software Applications

Note-

The students who have completed Computer Aided Design training related to Mechanical design at affiliated educational establishment will be given advanced standing for the following units

- ME109 Engineering Drawing
- ME110 Mechanical Engineering Design Software Applications

Further Course-

The graduates of this course can continue Advanced Diploma in Mechanical Engineering which is recognized by Singapore Institute of Engineering Technologists as satisfying the academic requirement for Member /Fellow (Engineering Technologists)

Course 31015 Advanced Diploma in Civil Engineering Design

Total 30 Credit points. Each unit has 3 credit points. Total 10 units (Accumulated credit 60 points with Diploma in Engineering (Design & Drafting)

- CE111A-Road+Bridges
- ME101 Applied Mathematics & CE113 Structure 1
- ME201 Fluid Mechanics
- CE 109 Energy Efficient Building Design
- CE106A (Part 1) Detailed Construction & Building Construction Materials
- CE106A (Part 2) Brick Laying & Sprouting & Guttering
- CE115 Estimating & Specification
- ME 334 Airconditioning and Refrigeration
- CE104B Building Drawing Advanced
- CE120 Civil Engineering Design Software Applications

Note-

The students who have completed Computer Aided Design training related to Civil design at affiliated educational establishment will be given advanced standing for the following units

- CE104B Building Drawing Advanced
- CE120 Civil Engineering Design Software Applications

Further Course-

The graduates of this course can continue Professional Diploma in Civil Engineering which is recognized by Singapore Institute of Engineering Technologists as satisfying the academic requirement for Member /Fellow (Engineering Technologists).

Course 30915 Advanced Diploma in Electrical Engineering Design

- Total 30 Credit points. Each unit has 3 credit points. Total 10 units (Accumulated credit 60 points with Diploma in Engineering (Design & Drafting)

- CE 109/EE307 Energy Efficient Building Design & ME 334 Airconditioning and Refrigeration
- ME101 Applied Mathematics & CE113 Structure 1
- EE117 Solar Electrical System
- EE103B Advanced Electrical Drafting
- EEE306 Electro-mechanical Control & EE121 Electronic Power Control Devices
- EE202 Electrical Circuits & EE112 Alternating Current Principle
- EE118 Electrical Energy Supply System
- EE111 Electro-magnetism & Basic Electrical Machines
- EE110 Computer Applications in Electrical Design

Note-

The students who have completed Computer Aided Design training related to Electrical design at affiliated educational establishment will be given advanced standing for the following units

- EE103B Advanced Electrical Drafting
- EE110 Computer Applications in Electrical Design

Further Course-

The graduates of this course can continue Professional Diploma in Electrical Engineering which is recognized by Singapore Institute of Engineering Technologists as satisfying the academic requirement for Member /Fellow (Engineering Technologists).

Diploma in Vocational Education & Training, Diploma in Technical Teaching (Training, Assessment & Learning Management)
Diploma in Engineering Education (YTU)

www.highlightcomputer.com/ProfDipTechTchg.pdf

Objective of the course

This Diploma in Engineering Education/Professional Diploma in Technical Teaching (Training, Assessment & Learning Management) is designed as Teachers Education Professional Development for teachers in Government Technical Colleges , Technological Universities and other Vocational Education and Training Institutions in Myanmar to upgrade their skills and knowledge in training and assessment, curriculum design and development, management of technical training institutions, adult and vocational education and training ,assessment validation and current accreditation rules and requirements of Myanmar Engineering Council as well as current training and assessment practices of overseas industrialized countries.

Learning Outcomes

After completion of the levels of the training programs, the students should be able to

- Understand adult learning principles in technical education and training contexts
- Apply the skills in training, assessment, course development, curriculum development, learning management and management of technical training institutions.
- Understand the accreditation requirements of Myanmar Engineering Council in accredited engineer, technologist and technician education & prepare for the compliance processes.
- Understand the technology, science and mathematics teaching & educational pedagogies principles of outcome based education and effectively utilize them in the workplace
- Provide effective work-based learning & career development for the working people in industries and apply the various ways of assessing the competences

Components of the course

- Educational theories ,educational technology, teaching and learning, teaching and measuring.
- Lesson planning, interpreting curriculums, class room management, instruction and assessment design, training principle, competency based training and assessment integrated the competencies of Australian Training and Assessment (TAE40110) course
- Management of educational establishment in line with the accreditation requirements of Myanmar Engineering Council by customizing the competencies in Australian Vocational Education and Training Diploma (TAE50111) to be relevant to the requirements of Myanmar Vocational Education and Training .
- Postgraduate level educational knowledge related to Learning Technology, Technology in classrooms, educational leadership, leadership and change management , computer supported learning and distance education,
- Teaching practicum preparation at different levels of training

Level	Course	Abbreviation	Pre-requisite	Target Group
1	Diploma in Vocational Education & Training (Certificate in Vocational Education & Training for completion of certain subjects)	Dip VET	Degree/Diploma /Certificate In relevant professional/ vocational areas	Vocational Education Teachers in various training courses
2	Diploma in Technical Teaching	Dip Tech Tchg	Diploma in Vocational Education & Training	Government Technical College Teachers
3	Diploma in Engineering Education	Dip Engg Ed	Diploma in Technical Teaching	Technological University Teachers
4	Diploma in Engineering Education (Specialist Discipline)	Dip Engg Ed (Specialist Area)	Diploma in Engineering Education	Technological University Teachers with specialized teaching in specific area of study.

Training & Assessment System Overview

Level	Course	2 weeks workshop (Assessment based on participation in workshop sessions)	Teaching Experience Assessment +Teaching Portfolio Assessment (Individual Assessment- During/After two weeks workshop) (The candidates can submit their portfolios)	Self study & Assignment Assessment (Individual Assessment)
1	Diploma in Vocational Education & Training (Certificate in Vocational Education & Training for completion of certain subjects)	ED120-Part (2A) Basic Teaching Practicum Preparation ED121-Part (2B) Training & Assessment Practice (Day 1 to 6 Session 3 s)	ED 103 Teaching Practice ED 104 Lesson Planning ED 106 Interpreting Curriculums ED 107 Teaching & Learning ED 201 Class Room Management & Teaching	ED 101 Theory of Education ED 102 Education Technology

Level	Course	2 weeks workshop (Assessment based on participation in workshop sessions)	Teaching Experience Assessment +Teaching Portfolio Assessment (Individual Assessment- During/After two weeks workshop)	Self study & Assignment Assessment (Individual Assessment)
2	Diploma in Technical Teaching	ED 202 Curriculum & Design ED 405 Training Principle ED220-Part (2) Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111) **(All session 3s)**	ED 206 Designing Instructions & Assessment	ED 401 Adult Learning Technology ED 205 Teaching & Measuring ED411-Engineering Education (1)
3	Diploma in Engineering Education	ED 301 Educational Policy (Myanmar Engineering Council Accreditation Requirements) ED309 Educational Communication ED311 Outcome based Education ED320-Part (2) Myanmar Engineering Council's Accreditation Compliance Practice **(All Sessions 1/2/3)**	ED301P- Curriculum design for accreditation compliance ED302P-Overall accreditation and compliance practice	ED 402 Educational Leadership ED 308 Change Management ED 407 Learning Environment ED412 Engineering Education (2)

Level	Course	2 weeks workshop (Assessment based on participation in workshop sessions)	Teaching Experience Assessment +Teaching Portfolio Assessment (Individual Assessment- During/After two weeks workshop)	Self study & Assignment Assessment (Individual Assessment)
4	Diploma in Engineering Education (Specialist Discipline)		ED 308 Computer Supported Learning & Distance Education ED310 Learning Technology I & II ED312 Technology in Classrooms	ED 304 Maths Teaching ED 305 Science Teaching ED 306 Technology Teaching ED 404 Educational Research (Part 2) ED413 Engineering Education (3)

Study Areas & Levels of Training

Level 1-Educational Theories , Teaching Pedagogies & Training and Assessment Practice

Part (1) Educational Theoretical Subjects

- ED 101 Theory of Education
- ED 102 Education Technology
- ED 103 Teaching Practice
- ED 104 Lesson Planning
- ED 105 Principle of Learning
- ED 106 Interpreting Curriculums
- ED 107 Teaching & Learning
- ED 201 Class Room Management & Teaching

ED120-Part (2A) Basic Teaching Practicum Preparation

ED101P-Teaching Support

ED102P- Application of Information Technology in School /Vocational Education

ED103P- Classroom Management

ED104P- Teaching Portfolio

ED105P- Inclusive Teaching

ED106P- Subject Area Knowledge

ED107P- Theory of Education, Educational Technology & Teaching Practice

ED107PA-Theory of Education

ED107PB-Education Technology

ED107PC-Teaching Practice

ED107PD-Lesson Planning

ED108P- Curriculum Study , Teaching & Learning

ED108PA-Principle of Learning

ED108PB-Interpreting Curriculums

ED108PC-Teaching & Learning

ED121-Part (2B) Training &Assessment Practice (Certificate IV in Training & Assessment TAE40110)

- ED111P Learning Program Design & Development Practice

  (TAEDES401A Design and develop learning programs)

- ED112P Assessing the needs of trainees

  (TAEDES402A Use training packages and accredited courses to meet client needs Delivery)

- ED113P Group based learning

  (TAEDEL401A Plan, organise and deliver group-based learning)

- ED114P Workplace Assessment

  (TAEDEL402A Plan, organise and facilitate learning in the workplace Assessment)

- ED115P Assessment Planning

  (TAEASS401B Plan assessment activities and processes)

- ED116P Competency Assessment

  (TAEASS402B Assess competence)

- ED117P Assessment Validation

  (TAEASS403B Participate in assessment validation)

- ED118P Work skills Instruction

  (TAEDEL301A Provide work skill instruction)

- ED119P Educational Presentation

  (BSBCMM401A Make a presentation)(TAEASS301B Contribute to assessment

Level 2-Adult Vocational Education

Part (1) Adult Vocational Education Theoretical Subjects

- ED 401 Adult Learning Technology
- ED 202 Curriculum & Design
- ED 205 Teaching & Measuring
- ED 206 Designing Instructions & Assessment
- ED 405 Training Principle
- ED411-Engineering Education (1)

ED220-Part (2) Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111)

- ED201P-Advanced Assessment Practice
  (TAEASS501A: Provide advanced assessment practice)
- ED202P-Assessment Development
  (TAEASS502B: Design and develop assessment tools)
- ED203P-Training Facilitation

  (TAEDEL502A: Provide advanced facilitation practice)
- ED204P-Learning Strategies

  (TAEDES501A: Design and develop learning strategies)
- ED205P- Language Literacy & Numeracy

  (TAELLN401A: Address adult language, literacy and numeracy skills)
- ED206P-Continuing Professional Development
  (TAEPDD501A: Maintain and enhance professional practice)
- ED207P Learning Resources Design & Development

  (TAEDES502A: Design and develop learning resources)
- ED208P Organizational Training Needs Analysis

  (TAETAS501B: Undertake organisational training needs analysis)
- ED 404 Educational Research (Part 1)

  (TAERES501A: Apply research to training and assessment practice)
- ED209P- Training Program Evaluation

  (TAEDES505A: Evaluate a training program)

Level 3-Training Authorities Accreditation Compliance

Part (1) Educational Leadership Subjects

- ED 402 Educational Leadership
- ED 301 Educational Policy (Myanmar Engineering Council Accreditation Requirements)
- ED 308 Change Management
- ED309 Educational Communication
- ED 407 Learning Environment
- ED311 Outcome based Education
- ED412 Engineering Education (2)

ED320-Part (2) Myanmar Engineering Council's Accreditation Compliance Practice

- ED301P- Curriculum design for accreditation compliance
- ED302P-Overall accreditation and compliance practice

Level 4-Specialized Teaching Areas

- ED 308 Computer Supported Learning & Distance Education
- ED 304 Maths Teaching
- ED 305 Science Teaching
- ED 306 Technology Teaching
- ED 404 Educational Research (Part 2)
- ED310 Learning Technology I & II
- ED312 Technology in Classrooms
- ED413 Engineering Education (3)

Diploma in Engineering Education

The following units can be added to Diploma in Technical Teaching to award Diploma in Engineering Education

ED411-Engineering Education Part 1

ED412-Engineering Education Part 2

ED413-Engineering Education Part 3

CURRICULUM

Level 1-Educational Theories , Teaching Pedagogies & Training and Assessment Practice

ED101 Theory of Education

Objective-

This unit provided the concept of education to enable the learners to understand the complex system of education by developing an understanding at different levels, inner workings of the individual learner, thinking processes and motivation & apply in practical teaching

Outcomes

- to understand all the different levels of education at the same time,
- to see personal learning and national legislation
- to build an understanding of education at all of these different levels.

Contents

Education theory, Modelling, Classroom Management, Equality of opportunity, Learning & Teaching, Quality Assurance, Theory into practice.

Instruction Reference Textbook-

Theory of Education.pdf by David A Turner + Lecture slides

Assessment

Assignments = 100% (4 assignments with 25% each)

ED 102 Education Technology

Objective-

This unit provide the knowledge to include reference to the use of technology for instruction, training, learning, or teaching. In practice, definitions serve to focus the interest of associations of individuals by emphasizing a particular scope of interest.

Outcomes

- To design, development, utilization, management, and evaluation
- To provide instructional technology," "instructional systems design," and "instructional media
- To do the design and development of instruction and instructional resources using education technologies

Contents

Active Learning, Alternative Assessment, Adult Learners, Analysis, Assistive Technology, Cognitive Apprenticeship, Computer-Assisted Instruction

Instruction Reference Textbook-

Education Technology - An Encyclopedia Edited by Ann Kovalchick and Kara Dawson+ Lecture slides

Assessment

Assignments = 100% (7 assignments)

ED 103 Teaching Practice

Objective-

To use developmental process for reflecting on and improving one's teaching; and as an evaluative product for personnel decisions such as tenure, promotion, or a teaching

Outcomes

- To provide different sources of evidence of teaching performance.
- To contribute important information about teaching performance
- To collect variety of sources of information related to teaching
- To reflect more of teaching's intellectual substance and complexity.
- To make teaching more visible through their demonstration of a variety of teaching-related activities.
- To place the initiative for reflecting on and evaluating teaching in the hands of faculty.
- To give the individual an opportunity to think about own teaching —
- To change priorities or teaching strategies as needed, and to reflect about future

Contents

Meaning of Teaching Portfolio, Why Prepare a Teaching Portfolio? ,How Does One Develop a Teaching Portfolio? ,Preparing Portfolio ,Shaping the Final Portfolio ,Keeping Your Portfolio Up to Date ,Assembling an Electronic Portfolio ,Portfolio evaluation.

Instruction Reference Textbook-

Lecture slides

Teaching-portfolio (University of South Australia

Reference- Preparing a Teaching Portfolio by Fran Mues and Mary Deane Sorcinelli The Center for Teaching University of Massachusetts Amherst

Assessment

Assignments = 100% Portfolio Assessment

ED 104 Lesson Planning

Objective-

This unit provides the methods to apply thought-stimulating examples teaching & learning techniques to be applied in training design and delivery to applv the various techniques and strategies in training design and presentation, that will stick! Specific strategies.

Outcomes

- To create trainings that are fun and memorable.
- To write learner-based trainings that guarantee success for each learner performance.
- To develop learning activities that match the need, learning style, and level of understanding of the participants.
- To use learning strategies that encourage learners to build on their experiences.
- To plan ongoing training activities that evaluate learner mastery during the entire learning event.
- To design blended and accelerated learning strategies that strengthen learning transfer back on the job.
- To identify methods that accurately measure training results.

Contents

Introducing planning, Needs, aims and objectives ANALYSIS OF NEEDS ,THE RATIONALE OF OBJECTIVES ,WRITING YOUR LEARNING OBJECTIVES ,SETTING A VARIETY OF OBJECTIVES , Learning, SKILLS, TECHNIQUES AND METHODS ,JUDGEMENT AND DECISION-MAKING,THE PLACE OF EMOTIONAL EDUCATION,PLANNING FOR THEORETICAL LEARNING,PLANNING FOR LEARNING FROM THE CONCRETE,PLANNING FOR REFLECTIVE LEARNING,PLANNING FOR ACTIVE LEARNING,PLANNING PROGRESSION FROM PRIOR LEARNING,PLANNING FUTURE PROGRESSION,CROSS-CURRICULAR LINKS,DIFFERENTIATION,PLANNING LISTENING ACTIVITIES,PLANNING SPEAKING ACTIVITIES,PLANNING WHOLE CLASS DISCUSSION,PLANNING READING,PLANNING TO DEVELOP COMPREHENSION,TEACHING PUPILS TO LEARN FROM WHOLE BOOKS,PLANNING WRITING,TEACHING ABOUT SUBJECT DISCOURSE ,Pedagogy, TASK ANALYSIS ,A SUCCESSFUL LESSON STRUCTURE ,PLANNING PRACTICE SESSIONS

Instruction Reference Textbook-

Lecture slides

Instructional Design for Action Learning By GERI M C ARDLE

100 Ideas for Lesson Planning – By Anthony Haynes

Read the above textbooks and prepare three lesson plans

Assessment

Assignments = 100% (Assessment of three lesson plans)

ED 105 Principle of Learning

Objective-

To understand the memory concept & apply it in effective teaching and learning.

Outcomes

- To demonstrate the principle of learning
- To understand the principle of control memory
- To understand the principle of Inhibition
- To apply the Principle of Adaptive Specialization as It Applies to Learning and Memory

Contents

FORMATION OF MEMORIES, ORGANIZA TION OF MEMORIES, CONSOLIDA TION OF MEMORIES, CONTROL OF MEMORIES, ADAPTIVE SPECIALIZATION OF MEMORIES

Instruction Reference Textbook-

Lecture slides

Principle of learning & memory Edited by Rainer H. Kluwe, Gerd Liier and Frank R ă s l e r

Assessment

Assignments = 100% (5 Assignments of 20% each)

ED 106 Interpreting Curriculums

Objective-

To interpret the curriculum & develop the detailed lesson plans in teaching process.

Outcomes

- To interpret the curriculum presented to teachers;
- To adopt the curriculum;

- To understand the curriculum assimilated by learners; and
- To evaluate curriculum.

Contents

KINDS OF CURRICULUM, ORIENTATIONS TO CURRICULUM, ORIENTATIONS TO CURRICULUM, TYPES OF CURRICULUM, Competency Curriculum, LEVELS OF CURRICULUM, STAGES OF THE PROCESS, CURRICULUM PLANNING, CURRICULUM DESIGN, CURRICULUM DEVELOPMENT- PHASES, CURRICULUM DEVELOPMENT. IMPLEMENTATION OF THE CURRICULUM, CURRICULUM EVALUATION, CURRICULAR CHANGES

Instruction Reference Textbook-

Lecture slides

CURRICULUM DESIGN AND DEVELOPMENT-1.pdf

THE CURRICULUM by Cecilia Braslavsky 1

Assessment

Assessment = 100% (Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED 107 Teaching & Learning

Objective-

This unit provides new and experienced faculty in all disciplines with practical, tested strategies for addressing all major aspects of college and university teaching, from planning a course through assigning final grades. Graduate student instructors and teaching assistants will also benefit from the foundational knowledge and research findings described in this unit.

Outcomes

- To addresses planning: designing a new course or revising an existing one, creating a syllabus, preparing for the class, and managing classroom conduct and decorum.
- To respond to a Changing Student Body,
- To do " Discussion Strategies, " provides ideas for leading a productive discussion, framing challenging questions, and encouraging student participation, both in class and online.
- To explore aspects of the lecture in the Large-Enrolment Course, " method: preparing and delivering effective lectures, engaging students and providing for student participation, and maintaining instructional quality with limited resources.
- To find the Alternatives and Supplements to Lectures and Discussion,
- To Enhance Students ' Learning and Motivation, " provides research -based approaches to helping students become more confident, independent, and self - motivated learners. Informal ways to assess learning and the use of mobile

- To Strengthen Students ’ Writing and Problem-Solving Skills, ”

Contents

RESPONDING TO A CHANGING STUDENT BODY ,DISCUSSION STRATEGIES ,THE LARGE-ENROLLMENT COURSE ,Maintaining Instructional Quality with Limited Resources ,ENHANCING STUDENTS’ LEARNING AND MOTIVATION ,STRENGTHENING STUDENTS’ WRITING AND,PROBLEM-SOLVING SKILLS ,TESTING AND GRADING,PRESENTATION TECHNOLOGIES ,EVALUATION TO IMPROVE TEACHING,TEACHING OUTSIDE THE CLASSROOM ,FINISHING UP

Instruction Reference Textbook-

Lecture slides

Tools for teaching by Barbara Gross Davis

Assessment

Experience Assessment = 100% (Assessed on Formal Teaching experience record for the teachers being employed by Government Technical Colleges & Technological Universities)

Separate assessment system is applied for pre-service teacher trainees.

ED 201 Class Room Management & Teaching

Objective-

To define classroom management, explain the relationship between classroom management and

discipline, and describe the concept of “culturally responsive classroom management”

Outcomes

1. To describe the characteristics of an effective teacher

2. To explain why reflection on teaching is so important for teacher growth

3. To describe the reflective decision making model of teaching

4. To identify important factors that affect instructional decision making

5.To contrast the characteristics of authoritative, authoritarian, and permissive teachers

6.To identify the ongoing tasks involved in classroom management and to explain how each contributes to a well-functioning learning environment

Contents

Instruction Reference Textbook-

Lecture slides

Classroom Teaching Skills by James M. Cooper

Other Reference

Classroom Management by Deborah Diffily & Charlotte Sassman

Assessment

Experience Assessment = 100% (Assessed on Formal Teaching experience record for the teachers being employed by Government Technical Colleges & Technological Universities)

Separate assessment system is applied for pre-service teacher trainees.

Level 2-Adult Vocational Education

ED 401 Adult Learning Technology

Objective-

This unit provides and skills and the roles of training developers and instructional designers who are responsible for analysing training needs and designing training solutions and products to meet workplace capability requirements, and evaluating the effectiveness of adult training programs.

Outcomes

To provide the guidance and advice to trainers and assessors, promoting innovative practices, e.g. e-learning, and in researching and incorporating best practice in training and assessment into training programs and products.

Contents

- Learner-Centered Teaching and the Use of Technology
- Effective Teaching with Technology in Adult Education
- Adult Learners and Their Development in the Information Society
- Supporting Lifelong Learning and Flexicurity Policies
- Adult Learning Principles as the Foundation for Innovative Technology Applications in Business and Higher Education Venues
- The Role of Learning Styles and Technology
- Innovative Instructional Strategies with the Use of Technology for Adult Learners
- Integrating Adult Learning and Technology for Effective Education:
- Strategic Approaches
- Comparing the Principles of Adult Learning with Traditional Pedagogical Teaching in Relation to the Use of Technology:

- Provide Training through instruction and demonstration of work skills
- Facilitate work-based learning
- Group based delivery
- Design and develop learning programs
- Foster and promote an inclusive learning culture
- Ensure a safe and healthy learning environment
- Individual learning
- Language Literacy & Numeracy

Instruction Reference Textbook-

Lecture Slides

Adult Learning Technology by Victor C.X. Wang

Assessment

Participation in Educational Support Workshop sessions=100%

(Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED 202 Curriculum & Design

Objective-

To provide theoretical consideration for the twenty-first century curriculum, & technological and pedagogical innovations influencing curriculum renewal together with sustainable practice in technology-rich environments.

Outcomes

- To address theoretical foundations for the development of curricula.
- To explore the pedagogical options available to higher education instructors
- To explore new ways of accessing and connecting content to multimodal forms
- To examine how curriculum design needs to be influenced by the effective development of virtual collaborative learning environments
- To devise more adaptive, educationally focused teaching and learning

Contents

Curriculum Design for the Twenty-First Century, Online Collaboration: Coordinating Technology, Strategies for Collaborative Learning, Designing a Virtual Collaborative Learning Environment, Curriculum Design as Applied to Virtual Collaborative, Course Evaluation, Creating Curriculum Within the Context of an Enterprise, Teaching Instructional Design, Online education examples.

Instruction Reference Textbook-

Lecture Slides

Curriculum Models for the 21st Century Using Learning Technologies in Higher Education

Assessment

Participation in Educational Support Workshop sessions=100%

(Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED 205 Teaching & Measuring

Objective-

To apply adaptive expertise, creative thinking, metacognition, and teamwork in teaching and measuring task

Outcomes

To apply Adaptability, Adaptive expertise, Adaptive problem solving, Communication, Creative thinking , Decision making , Metacognition, Situation awareness & Teamwork

Contents

Cognitive Readiness, A Model for Instruction and Assessment of Cognitive Readiness, The Development and Assessment of Cognitive Readiness: Lessons Learned from K-12 Education, Cognitive Readiness for Solving Equations . Cognitive Readiness Applications, Creative Thinking Abilities: Measures for Various Domains, Using Analogies as a Basis for Teaching Cognitive Readiness . Simulation Assessment of Cognitive Readiness . Assessing Cognitive Readiness in a Simulation- Based Training Environment, Software Support for Teaching and Measuring Cognitive Readiness, Cognitive Readiness for Complex Team Performance, Impact of Individual Game-Based Training on Team Cognitive Readiness

Instruction Reference Textbook-

Teaching and Measuring Cognitive Readiness by Harold F. O'Neil • Ray S. Perez • Eva L. Baker

Assessment

Participation in Educational Support Workshop sessions=100%

(Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED 206 Designing Instructions & Assessment

Objective-

To deconstruct the broad-sweeping goals of the standards and transform them into unit plan objectives (more specific) and daily instructional objectives

Outcomes

To entails a logical progression from (1) content area standards to (2) modified standards to

(3) unit plan objectives to (4) daily instructional objectives in an understandable sequence of increasing specificity

Contents

Deconstructing the Standards ,Writing Unit and Daily Instructional Objectives , Writing True–False and Completion, Items and Matching Exercises ,Writing Multiple-Choice Items ,Writing Short-Answer and Essay Items .Performance-Based Assessment ,Portfolios

Instruction Reference Textbook-

Lecture Slides

Designing Elementary Instructions & Assessments

By John L. Badgett Edwin P . Christmann

Assessment

Participation in Educational Support Workshop sessions=100%

(Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED 405 Training Principle

Objective-

To provide numerous techniques, designs, case examples, and tips for designing and facilitating training that is participant centred, brain-friendly, and experiential

Outcomes

- To explore all aspects of training.
- To promote an active approach to training
- To provide a practical handbook of techniques

Contents

INTRODUCING ACTIVE TRAINING, DESIGNING AN ACTIVE TRAINING PROGRAM, Assessing Training Needs, Developing Active Training Objectives, Creating Opening Exercises, Preparing Brain-Friendly Lectures, Using

Experiential Learning Approach, Designing Active Training Activities, Sequencing Active Training Activities, Planning Active Training Programs, Blending Technology into Active Training, CONDUCTING AN ACTIVE TRAINING PROGRAM, Beginning an Active Training Program, Gaining Leadership of the Training Group, Giving Presentations and Leading Discussions, facilitating Structured Activities and Promoting Team Learning, Concluding an Active Training Program, EXTENDING THE VALUE OF AN ACTIVE TRAINING PROGRAM, Evaluating an Active Training Program

Instruction Reference Textbook-

Lecture Slides

Active Training by Mel Silberman

Assessment

Participation in Educational Support Workshop sessions=100%

(Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED411-Engineering Education (1)

Objective-

To design the engineering educational programs and teaching programs by applying multi disciplinary approaches by combining technological aspects

Outcomes

- To attain the strategies to promote the engineering education
- To apply technological concepts in engineering teaching support system
- To develop the quality work-based learning system
- To write Sociological Rationale of a design curriculum
- To find the strategies to improve the communication skills of engineers
- To design the computer server for engineering education program

Contents

- Pre-university Outreach: Encouraging Students to Consider Engineering Careers
- The ASTutE Tutorial Assistant: Efficient, Accessible and Interactive
- Learning at Work within the Ford Motor Company
- Using Rubrics to Assess the Development of CDIO
- Syllabus Personal and Professional Skills and Attributes at the 2.x.x Level*
- Quality Assurance Issues Relating to the Delivery of Work Based Learning Programmes*

- The Role of Work-Based Learning Methodologies in the 21 st Century
- Development of Life-Long Engineering Education in the 21 st Century
- Traits Analysis and Influences on High Performing Students in Mechanical Education
- The Construction of an Instructional Quality System for Industrial Technology Education
- Design Hegemony: an Exploration of Hegemony in the Curriculum and Instruction of Industrial Design Education
- The Engineering Mechanics Interactive Lecture Series: Oligomedia Resources for Computer-Based Learning
- The Sociological Rationale of the Industrial Design Curriculum
- Achieving Advances and New Developments in Engineering and Technological Education
- Important Considerations in Improving the Acquisition of Communication Skills by Engineers
- Client-Server and Gateway Systems for Remote Control in Engineering Education
- The Development of Online Conference Management Tools as a Student Project*
- Co-operation across Disciplines in Engineering Education Using Technical and Scientific Computing Environments

Instruction Reference Textbook-

Lecture Slides

ED411 folder, read the following files

- AndersonGilbride.pdf
- austin.pdf
- barlow.pdf
- BodenGrays.pdf
- Burns&Chisholm.pdf
- BurnsChisholm1.pdf
- ChaoHuang.pdf
- Chaos.pdf
- ChengHsiao.pdf
- chapman.pdf
- ChengLiao.pdf
- Chisholm1.pdf

- DanilovaZJPs.pdf
- Dulevicius.pdf
- EwaldPage.pdf
- GolNafalskiNguynTran.pdf
- grunwald1.pdf

Assessment

Questions & answers

Level 3-Training Authorities Accreditation Compliance

ED 402 Educational Leadership

Objective-

This course provides the educators with skills to take an active and creative approach to their personal and professional development. While it may be of most interest to those in middle or senior education management, it is also designed to help teachers, governors and those in organizations allied with education.

Outcomes

To attain the competencies in

- Leading and managing
- Changing and learning
- Undertake Tasks and responsibilities

Instruction Reference Textbook-

Educational leadership and learning Practice, policy and research
by Sue Law and Derek Glover

Contents

- The context for educational leadership
- Developing leadership and management effectiveness
- Managing ourselves and leading others
- Motivating and managing others
- Leading effective teams
- Effective communication
- Organizational cultures

- Managing change and creating opportunities
- Educational improvement, inspection and effectiveness
- Leading and managing in learning organizations
- Managing staff and promoting quality
- Managing resources and finance
- Managing stakeholder relationships and partnerships
- Leading and managing for professional development

Assessment

Assignments = 100%

ED 301 Educational Policy
(Myanmar Engineering Council Accreditation Requirements)

Objective-

This course provides the educators with Myanmar Engineering Council Laws, Rules, Regulations, Accreditation Requirements, Accreditation Practices , procedures related to accreditation of engineering courses and engineering professionals in Myanmar to enable them to design, develop and teach the engineering programs accredited by Myanmar Engineering Council.

Outcomes

- To understand Myanmar Engineering Council Accreditation Rules & Regulations related to accreditation of Government Technical Colleges & Technological Universities in Myanmar.
- Get the information & knowledge on Current issues related to international & Myanmar Engineering profession.
- Participate in hand on practice workshop focussing on curriculum development & collecting and preparing the materials for accreditation by Myanmar Engineering Council Engineering Accreditation Committee & taking part in mock accreditation sessions.

Contents

- Overview of Myanmar Engineering Council Law, Regulation, Accreditation Principles
- Examples of marine engineers competency assessment in Myanmar/ in line with International Certification standards & explore the way to apply the similar competency based training in other engineering areas
- Requirement of Myanmar Engineering Council & how to design the curriculum to address the learning outcomes
- Discussing the programme structure and course contents(MEng C)
- Discussing the programme delivery and assessment methods

- Assessment Validation Guide of Myanmar Engineering Council
- Educational Resources Development in line with Myanmar Engineering Council Requirements
- Curriculum design for accreditation compliance
- Overall accreditation and compliance practice
- Preparation for self accreditation report
- Engineering Accreditation Plan

Instruction Reference Textbook-

1. Accreditation Manual
2. Graduate Attributes & Terminology.pptx
3. SAR.pptx
4. EngineerCoulcilRegulation
5. Policy - Qualifications Policy POL11 v4
6. Myanmar Engineering Council Law
7. Policies for Accreditation of Programs
8. Time line,EAC Code,Guidelines,Fees

Assessment

Assignments = Participation in workshop sessions

ED 308 Change Management

Objective-

The unit involves candidates in leading a complete cycle of the change process. This process falls into three phases that correspond broadly to the elements of competency.

i. Preparing for change

ii. Planning for change

iii. Implementing and evaluating change

Outcomes

- To provide leadership and support to others within the organization
- To manage change more effectively
- To develop educational business skills
- To analyse work practice and context, and make improvements
- To contribute to innovation and capacity building in the organization.

Contents

- Leadership issues Raising achievement
- The Leadership of Change
- A shift from management to leadership
- How not to do change management
- Managing change and transition

Instruction Reference Textbook-

Lecture Slides

Leadership+ Change Management DVD

Assessment Assignment-100%

ED309 Educational Communication

Objective-

This program uses methods of the social sciences, encompassing both qualitative and quantitative approaches to the study of communication and education. It asks in particular how education and other social systems change under the impact of new media

Outcomes

- Reflect on the historical effects of media and on the cultural uses of developments such as face-to-face speech, writing, printing, photography, film, radio, television, computers, and networked multimedia;
- Use anthropological and linguistic methods to study how the diverse forms of communication, literacy, information processing, and cognition condition educational practice; and
- Explore positive and negative effects of media on social relations and develop strategies for using information and communication technologies to improve conditions of education and life.

Contents

- Creating a production that communicates your message
- Digital Design
- Great Looking Presentations
- Planning

- Technical Papers related to effectiveness of ICT in education
- Access and equity issues
- Educational Communication Portfolio Presentation

Instruction Reference Textbook-

Lecture Slides

ED309 Educational Communication Assignment Tasks-806A Modified (Worked Examples)

Assignment

Assignments = Portfolio Assessment- 100%

ED 407 Learning Environment

Objective-

The objective of this unit is to give the candidate an understanding of the conceptualisation, historical development, assessment, determinants and effects of classroom learning environments.

Outcomes

- To review classroom learning environment for effective educational setting
- To prepare effective educational setting for teaching and learning
- To understand the students' behaviour in the classroom and the cause of the behaviour
- To effectively use the teaching and learning strategies for keeping the good learning environment in the class
- To perform educational survey task on learning environment assessment.

Contents

- Background information about the fields of school and classroom environment
- Outcomes and environment; evaluation of educational innovations
- Quantitative and qualitative methods
- Teachers' use of classroom and school environment instruments in practical attempts to improve their own classrooms and schools.
- Current trends and future desirable directions in research on educational environments.

Instruction Reference Textbook-

Lecture Slides

Learning Environment Reader

Assessment

Assignments = 100%

Action Research Project

ED311 Outcome based Education

Objective-

At the end of this training, participants will be able to understand:

- ❑ Outcome-Based Education (OBE)
- ❑ Programme Education Objectives (PEO'S),

Outcomes

Programme Outcomes (PO's), Course Outcomes (CO) and Performance Indicators

- ❑ Bloom's Learning Taxonomy
- ❑ Assessment and Evaluation Methods
- ❑ Continual Quality Improvement Process

Contents

- ❑ The Origins of Outcome Based Education
- ❑ *Approaches to OBE*
- ❑ *OBE Process*
- ❑ Educational Process - Stakeholders
- ❑ Educational Process – Lecturers' Roles
- ❑ Educational Process - References
- ❑ OBE Model Hierarchy
- ❑ Characteristics of OBE curricula
- ❑ *Types of Teaching/Learning Delivery Activities*
- ❑ *OBE Delivery*
- ❑ Continual Quality Improvement (CQI)
- ❑ Essentials for OBE's success
- ❑ Essentials Components of OBE

- ❑ Different Levels of Outcomes
- ❑ Development of Programme Education Objectives
- ❑ CHARACTERISTICS OF GOOD OUTCOME STATEMENTS
- ❑ Course Development
- ❑ ENGINEERING EDUCATION
  BLOOM'S TAXONOMY
- ❑ DOMAINS of LEARNING OUTCOMES
- ❑ Assessment in OBE
- ❑ Continual Quality Improvement (CQI)

Instruction Reference Textbook-

Lecture Slides

Final OBE Training at Myanmar July 2014. by **Ir. Professor Academician Dato' Dr. HT Chuah**
President of FEIAP

Assessment

Participation in workshop & presenting the portfolios

ED412 Engineering Education (2)

Objective-

To design the international standard engineering education program by applying total quality management

Outcomes

- To have the knowledge and skills in total quality management
- To foster the cross border co-operation
- To interface the school to engineering programs

Contents

- Secondary School-University Interface: Science and Engineering
- The Educational Process
- Quality Engineering Education: Student Skills and Experience
- The Web as a Tool for Supporting Student Learning
- Develop a Long-Term Plan to Overcome Skills Shortage
- Cross border engineering practice

- Cross-cultural Skills for engineers

Instruction Reference Textbook-

Lecture Slides

ED412 File

Assessment

Assignments = 100% (Two assignments of 50% each)

Level 4-Specialized Teaching Areas

ED 308 Computer Supported Learning & Distance Education

Objective-

This unit provides the skills related to contribute to the central questions of how students can learn collaboratively using the new technologies, the problems that can be expected, and the benefits that may ensue. The various ways to examine how computer supported group work differs from face-to-face group work, and the implications for both educators and students are provided.

Outcomes

- ❑ To offer assessment of e-learning with the hope of offering ideas in terms of practical guide and points of good practices, while addressing potential pitfalls to avoid.
- ❑ To be aware of what constitutes good and effective e-learning practices and how to design them for specific contexts and audiences in the global information
- ❑ Innovative uses of e-learning, Addressing various divides in e-learning, user centred focus in e-learning, special considerations in e-learning and development economy.

Contents

- ❑ Computer-Supported Collaborative Learning in Higher Education:
- ❑ An Introduction
- ❑ Online Group Projects: Preparing the Instructors to Prepare the Students
- ❑ Time, Place and Identity in Project Work on the Net
- ❑ The Collective Building of Knowledge in Collaborative Learning Environments
- ❑ Collaboration or Cooperation
- ❑ Analyzing Small Group
- ❑ Interactions in Educational Environments
- ❑ Mapping Perceived Socio-Emotive Quality of Small-Group Functioning
- ❑ A Constructivist Framework for Online Collaborative Learning:
- ❑ Adult Learning and Collaborative Learning Theory
- ❑ The Real Challenge of Computer-Supported Collaborative Learning
- ❑ Use and Mis-Use of Technology for Online, Asynchronous, Collaborative Learning
- ❑ The Personal and Professional Learning Portfolio
- ❑ An Online Environment for Mentoring, Collaboration, and Publication
- ❑ Problems and Opportunities of Learning Together in a Virtual Learning Environment
- ❑ Web-Based Learning by Tele-Collaborative Production in Engineering Education

- ❑ Relational Online Collaborative Learning Model
- ❑ Online, Offline and In-Between: Analyzing Mediated-Action

Instruction Reference Textbook-

Lecture Slides

Computer Supported Learning by Tim S. Roberts

Assessment

Assignments = 100%

ED 304 Maths Teaching

Objective-

This unit provides the skills to the teachers to act as mechanisms for communicating an approach to mathematics education that is eclectic and embracing, respectful and engaging, reflective and, ultimately, educational.

Outcomes

To provide the methods to the educators in class teaching to provide the students with conceptual understanding of mathematics content through modelling or interpretation of representations,

• computational fluency,
• problem solving through application of the content.

Contents

- Strategies for Vocabulary Development
- Strategies for Using Manipulatives
- Strategies for Teaching Procedures
- Strategies for Understanding Problem Solving
- Strategies for Using Mathematical Games
- Strategies for Assessing
- Mathematical Thinking

Instruction Reference Textbook-

Lecture Slides

- ❑ Multiple Perspectives on Mathematics Teaching and Learning Edited by Jo Boaler

- ❑ Strategies for Teaching Mathematics by *Deborah V. Mink*

Assessment

Assignments = 100%

ED 305 Science Teaching

Objective-

This unit provide the teaching pedagogy in science that effectively enable the teacher to transfer what they learn in our courses into their own classroom practices.

Outcomes

- To shine a spotlight on important work that science teacher educators are doing with teachers and youth
- To describe the professional purposes and benefits realized when they, as science teacher educators, arranged opportunities to teach children or adolescents.
- To utilize model teaching lessons in class room practice

Contents

- Pedagogical Content Knowledge
- Teaching & learning Through experience
- Teaching examples

Instruction Reference Textbook-

Lecture Slides

- Understanding and Developing Science Teachers' Pedagogical Content Knowledge *By* John Loughran
- Science Teacher Educators as K-12 Teachers edited by Michael Dias • Charles J. Eick, Laurie Brantley-Dias

Assessment

Assignments = 100%

ED 306 Technology Teaching

Objective-

This unit provides the teaching idea for teaching students with unique opportunities to develop a range of process skills such as critical and creative thinking skills in addition to their practical skills, through undertaking authentic tasks of real purpose.

Outcomes

- To link philosophy and educational issues in my daily work
- To help teachers to improve the teaching by means of the insights that philosophy of technology offers.

Contents

- Philosophy of technology:
- Technological artifacts
- Technological knowledge
- Technological processes
- Technology and the nature of humans
- Ethics and aesthetics of technology
- Learners' philosophies of technology
- Reconceptualizing technology through education
- Practical issues in teaching about technology

Instruction Reference Textbook-

Lecture Slides

Teaching about Technology by MARC J. DE VRIES

Assessment

Assignments = 100%

ED 404 Educational Research

Objective-

This unit describes the performance outcomes, skills and knowledge required to undertake research into educational theory and apply this research to improve current training and assessment practice.

This unit typically applies to those who need to develop skills in research in order to apply educational theory to improve current and future training and assessment practice

Outcomes

- Prepare research brief relating to training and assessment practice
- Conduct research in training and assessment practice
- Investigate and apply educational theory to the research
- Report on application of educational theory to training and assessment practice
- Review entire process

Contents

Qualitative Research and Public Policy

- Multilevel Analysis in Higher Education Research: A Multidisciplinary Approach .
- Conducting Multi-paradigm Inquiry in the Study of Higher Education Organization and Governance: Transforming
- Research Perspectives on Colleges and Universities

- Examining Pathways to and Through the Community College for Youth and Adults
- Review of the Theories Developed to Describe the Process of College Persistence and Attainment

Instruction Reference Textbook-

Lecture Slides

Higher Education: Handbook of Theory and Research

Published under the Sponsorship of the Association for Institutional Research (AIR) and the Association for the Study of Higher Education (ASHE)

Assessment

Assignments = 100%

Prepare & submit one educational research paper.

ED310 Learning Technology I & II

Objective-

On completion of this unit you should be able to demonstrate your achievement of the following

learning outcomes:

All participants will be competent, confident and professional users of e-Learning system in teaching

Outcomes

To use e-Learning tools to:

- improve their own professional productivity,
- improve their preparation for classes and teaching generally and
- improve their ability to use and integrate IT appropriately within the classroom

Contents

The Syllabus:

The unit consists of five inter-related modules:

1. **Module 1: Getting Started and IT Empowerment and Teaching**
   a. Unit Introduction

2. **Module 2: IT and Education:**
   a. The Hype and the Reality
   b. Multimedia in Education

3. **Module 3: Ghosts of Schooling Past, Present and Future**
    a. Technology and the Whole Curriculum
    b. Technology as a Classroom Tool
    c. Creating an active learning Environment

4. **Module 4: Making the World Wide Web Work for You**
    a. The Tools of the Trade
    b. Using the internet for information

5. **Module 5: Technology in Your Classroom**
    a. Classroom Applications of the
    b. WWW
    c. Educational Software
    d. Ideas, Approaches, Tools and Tricks
    e. Integration
    f. Early Learning and Primary

Tuition Pattern:

This unit is provided as an online unit. All tuition is provided through the online course website. The length of the unit is one semester (12 weeks); however, some students will finish sooner, and some may require additional time to complete it. While the weekly time commitment will vary from student to student, most should allow approximately 10 hours per week total study time for the unit.

Instruction Reference Textbook-

Lecture Slides

The CD in the folder Day 7 Session 2/ 5.Learning Technology 1/ index.html

Recommended Texts and Principal References:

- Shelly G. Cashman T.J. Gunter R.E. Gunter G.A. (2002). Teachers discovering computers: A link to the future WWW. Course Technology, Cambridge.

All other materials are supplied on Course CD-ROMS and online.

Assessment

Two assignments= 100%

ED312 Technology in Classrooms

Objective-

To provide use of technology in educational context by combining with teaching and learning principle, educational leadership skills and educational leadership skills.

Outcomes

On completion of this unit you should be able to demonstrate your achievement of the following learning outcomes:

Upon completion, the participant;

1. Through the use of professional based portfolios will design, implement and evaluate the use of IT, multimedia and the Internet in their own classrooms

2. Using the skills and knowledge developed within the unit, conduct research of the use on learning technologies within the areas of;
    a. Learning technologies and Developing Leadership Skills in Technology
    b. Assessing and Changing IT Learning Environments

    Teaching and Learning Principles for Technology-Rich Classrooms

Contents The unit consists of 2 inter-related sections:

1. **Section 1**
    a. Conduct independent research in one of the following
        i. Developing Leadership Skills in Technology
        ii. Assessing and Changing IT Learning Environments
        iii. Teaching and Learning Principles for Technology-Rich Classrooms
2. **Section 2**
    a. The development of two Portfolios
        i. "Classroom" based portfolio that demonstrates the use and integration of educational technology in your classroom or workplace.
        ii. "Personal" based portfolio that provides the student with the opportunity to demonstrate the use and educational practice in professional practice.

Instruction Reference Textbook-

Lecture Slides

Day 8 Session 1/ 7.Technology in classroom/ index.html

Assessment

Assignments = 100%

ED413 Engineering Education (3)

Objective-

This unit provides the engineering educators with engineering ethical issues, New pedagogy , Industrial co-operation & Lifelong learning and Strategic Planning skills in engineering education

Outcomes

Design the engineering programs by taking account on emphasizing in engineering ethics & by utilizing innovative new teaching pedagogies

Contents

- Engineering ethics
- Engineering teaching pedagogies
- New training and work-based approach
- Strategies planning in engineering education

Instruction Reference Textbook-

- ED413 Par1 Ethics
- ED413 Part2 New pedagogy , Industrial co-operation & Lifelong learning
- ED413 Part3 Strategic Planning in Engineering Education
- ED413 Part4 Training & Work-based Approach

Assessment

Assignments = Project 100%

RESOURCES

ASSESSMENT FOR THE SUBJECTS IN PART 1 OF THE LEVELS

The students will have to write 20 pages study report for each of the subjects outlined in the Part 1 of any level .

The report general needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, points, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of curriculum designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

The book references for the subjects can be downloaded from the following links by entering the given password. The detailed instruction will be given in subject study guides. Some of the units can be assessed in residential training workshops.

Password- to be given

ASSESSMENT FOR THE SUBJECTS IN PART 2 OF THE LEVELS

Follow the specific assessment instruction provided for the units in Part 2 of the levels

ED120-Part (2A) Basic Teaching Practicum Preparation

Study Areas & Levels of Training

Level 1-Educational Theories , Teaching Pedagogies & Training and Assessment Practice

Part (1) Educational Theoretical Subjects

- ED 101 Theory of Education

  http://www.filefactory.com/file/4fuby1dpqs9f/ED%20101%20Theory%20of%20Education.zip
- ED 102 Education Technology

  http://www.filefactory.com/file/1ghlzng7e0n3/ED%20102%20Education%20Technology.zip
- ED 103 Teaching Practice

  http://www.filefactory.com/file/1o732n0j46mf/ED%20103%20Teaching%20Practice.zip
- ED 104 Lesson Planning

  http://www.filefactory.com/file/4m30ym0ez37r/ED%20104%20Lesson%20Planning.zip

- ED 105 Principle of Learning

  http://www.filefactory.com/file/7660l6kjr8sx/ED%20105%20Principle%20of%20Learning.zip

- ED 106 Interpreting Curriculums

  http://www.filefactory.com/file/1h141zxbov8z/ED%20106%20Interpreting%20Curriculums.zip

- ED 107 Teaching & Learning

  http://www.filefactory.com/file/6u5o455lyqj7/ED%20107%20Teaching%20%26amp%3B%20Learning.zip

- ED 201 Class Room Management & Teaching

  http://www.filefactory.com/file/48gvqykksgiz/ED%20201%20Class%20Room%20Mgt%20%26amp%3B%20Teaching.zip

  Part (2A) Basic Teaching Practicum Preparation

Follow the specific assessment instruction provided for the units in Part 2 of the levels

ED101P-Teaching Support

ED102P- Application of Information Technology in School /Vocational Education

ED103P- Classroom Management

ED104P- Teaching Portfolio

ED105P- Inclusive Teaching

ED106P- Subject Area Knowledge

Certificate in Teaching Support+ Diploma in Teaching Practice+ Bachelor of Teaching+ Bachelor of Education (School & Vocational)
http://www.filefactory.com/file/4a5o50idxgvr/Diploma%20in%20Teaching%20Practice.pdf

ED107P- Theory of Education, Educational Technology & Teaching Practice

ED107PA-Theory of Education

ED107PB-Education Technology

ED107PC-Teaching Practice

ED107PD-Lesson Planning

ED108P- Curriculum Study , Teaching & Learning

ED108PA-Principle of Learning

ED108PB-Interpreting Curriculums

ED108PC-Teaching & Learning

ED 107 Lesson Slide 1 to 20 Mod.pdf (4.71MB)
http://www.filefactory.com/file/1w4faybri0p9/n/ED_107_Lesson_Slide_1_to_20_Mod.pdf

Download now by clicking the above link!

ED107 Lesson Slide 21 to 40.pdf (3.06MB)
http://www.filefactory.com/file/1ae111n3e1gl/n/ED107_Lesson_Slide_21_to_40.pdf
Download now!

ED107 Lesson Slide 41 to 60.pdf (3.27MB)
http://www.filefactory.com/file/4slgwynziwxz/n/ED107_Lesson_Slide_41_to_60.pdf
Download now!

ED107 Lesson Slide 61 to 80.pdf (3.22MB)
http://www.filefactory.com/file/1txrj08z5329/n/ED107_Lesson_Slide_61_to_80.pdf
Download now!

ED107 Lesson Slide 81 to 100.pdf (2.97MB)
http://www.filefactory.com/file/15p9vb74rljl/n/ED107_Lesson_Slide_81_to_100.pdf
Download now!

ED107 Lesson Slide 101 to 120.pdf (3.07MB)
http://www.filefactory.com/file/lxvcg3369i9/n/ED107_Lesson_Slide_101_to_120.pdf
Download now!

ED107 Lesson Slide 121 to 140.pdf (2.69MB)
http://www.filefactory.com/file/6h7bu8dsq7q7/n/ED107_Lesson_Slide_121_to_140.pdf
Download now!

ED107 Lesson Slide 141 to 160.pdf (2.57MB)
http://www.filefactory.com/file/6pxq45urnfyn/n/ED107_Lesson_Slide_141_to_160.pdf
Download now!

ED107 Lesson Slide 161 to 180.pdf (2.99MB)
http://www.filefactory.com/file/6srxl6iwl2o3/n/ED107_Lesson_Slide_161_to_180.pdf
Download now!

ED107 Lesson Slide 181 to 200.pdf (2.76MB)
http://www.filefactory.com/file/10d9wna6jr4r/n/ED107_Lesson_Slide_181_to_200.pdf
Download now!

ED107 Lesson Slide 201 to 220.pdf (2.86MB)
http://www.filefactory.com/file/3o4wea6j5uof/n/ED107_Lesson_Slide_201_to_220.pdf
Download now!

ED107 Lesson Slide 221 to 240.pdf (3.27MB)
http://www.filefactory.com/file/32bcquqzs1ll/n/ED107_Lesson_Slide_221_to_240.pdf
Download now!

ED107 Lesson Slide 241 to 260.pdf (2.83MB)
http://www.filefactory.com/file/p0y76lkvkjd/n/ED107_Lesson_Slide_241_to_260.pdf
Download now!

ED107 Lesson Slide 261 to 280.pdf (2.84MB)
http://www.filefactory.com/file/2kdx8ty4uj1d/n/ED107_Lesson_Slide_261_to_280.pdf
Download now!

ED107 Lesson Slide 281 to 304.pdf (3.78MB)
http://www.filefactory.com/file/1y06uzz0iaq1/n/ED107_Lesson_Slide_281_to_304.pdf
Download now!

ED 107 Exercises.pdf (2.3MB)
http://www.filefactory.com/file/1isf2cao4gxx/n/ED_107_Exercises.pdf
Download now!

ED 108 Curriculum Study , Teaching & Learning Lessons

ED108 Lesson Slide 1 to 20.pdf (2.37MB)
http://www.filefactory.com/file/6r5rg8bucgkx/n/ED108_Lesson_Slide_1_to_20.pdf
Download now!

ED108 Lesson Slide 21 to 40.pdf (2.69MB)
http://www.filefactory.com/file/1wxu981xeel/n/ED108_Lesson_Slide_21_to_40.pdf
Download now!

ED108 Lesson Slide 41 to 60.pdf (2.27MB)
http://www.filefactory.com/file/71av1by59uit/n/ED108_Lesson_Slide_41_to_60.pdf
Download now!

ED108 Lesson Slide 61 to 80.pdf (2.12MB)
http://www.filefactory.com/file/4qghmt89g2zr/n/ED108_Lesson_Slide_61_to_80.pdf
Download now!

ED108 Lesson Slide 81 to 100.pdf (2.22MB)
http://www.filefactory.com/file/11jmlg5ax3e1/n/ED108_Lesson_Slide_81_to_100.pdf
Download now!

ED108 Lesson Slide 101 to 120.pdf (2.57MB)
http://www.filefactory.com/file/67air98a9wpz/n/ED108_Lesson_Slide_101_to_120.pdf
Download now!

ED108 Lesson Slide 121 to 140.pdf (2.32MB)
http://www.filefactory.com/file/2fw5kwlelb03/n/ED108_Lesson_Slide_121_to_140.pdf
Download now!

ED108 Lesson Slide 141 to 168.pdf (2.7MB)
http://www.filefactory.com/file/5foiol6m9rwx/n/ED108_Lesson_Slide_141_to_168.pdf
Download now!

ED 108 Exercises.pdf (1.22MB)
http://www.filefactory.com/file/5o110j6pg6dz/n/ED_108_Exercises.pdf
Download now!

Part (2B) Training &Assessment Practice (Certificate IV in Training & Assessment TAE40110)

ED121-Part (2B) Training &Assessment Practice

(Certificate IV in Training & Assessment TAE40110)

Follow the specific assessment instruction provided for the units in Part 2 of the levels

- ED111P Learning Program Design & Development Practice

  (TAEDES401A Design and develop learning programs)

- ED112P Assessing the needs of trainees

  (TAEDES402A Use training packages and accredited courses to meet client needs Delivery)

- ED113P Group based learning

  (TAEDEL401A Plan, organise and deliver group-based learning)

- ED114P Workplace Assessment

  (TAEDEL402A Plan, organise and facilitate learning in the workplace Assessment)

- ED115P Assessment Planning

  (TAEASS401B Plan assessment activities and processes)

- ED116P Competency Assessment

  (TAEASS402B Assess competence)

- ED117P Assessment Validation

  (TAEASS403B Participate in assessment validation)

- ED118P Work skills Instruction

  (TAEDEL301A Provide work skill instruction)

- ED119P Educational Presentation

  (BSBCMM401A Make a presentation)(TAEASS301B Contribute to assessment

RESOURCES FOR ABOVE UNITS

Working in Vocational Education & Assessment

http://www.filefactory.com/file/136bwooflstr/n/3_Assessment_Working_in_VET_zip

Preparing vocational teaching portfolios

http://www.filefactory.com/file/2l9iu8ptfk0t/n/8_Guides_for_preparing_VET_portfolios_zip

Learning , Facilitation & Teaching in Vocational Education and Training

http://www.filefactory.com/file/3b1d9kduz515/n/4_Learning_Facilitation_Teaching_in_VET_zip

Work-based Learning & Assessment

http://www.filefactory.com/file/5pef2h8dhav9/n/10_Workbased_Learning_amp_Assessment_2_zip

Learning Environment

http://www.filefactory.com/file/5l12qij9s67j/n/12_Learning_Environment_zip

Level 2-Adult Vocational Education

ED220-Part (2) Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111)

Part (1) Adult Vocational Education_Theoretical Subjects

Password- to be given

- ED 401 Adult Learning Technology

  http://www.filefactory.com/file/68y4bd94ianb/ED%20401%20Adult%20Learning%20Technology.zip

- ED 202 Curriculum & Design

  http://www.filefactory.com/file/1jotv5d428j1/ED%20202%20Curriculum%20%26amp%3B%20Design.zip

- ED 205 Teaching & Measuring

  http://www.filefactory.com/file/4eu01ck2awl/ED%20205%20Teaching%20%26amp%3B%20Measuring.zip

- ED 206 Designing Instructions & Assessment

  http://www.filefactory.com/file/4dnh3r8wsd9t/ED%20206%20Designing%20Instructions%20%26amp%3B%20Assessment.zip

- ED 405 Training Principle

  http://www.filefactory.com/file/5qupttpxznin/ED%20405%20Training%20Principle.zip

  Part (2) Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111)

Follow the specific assessment instruction provided for the units in Part 2 of the levels

- ED201P-Advanced Assessment Practice
  (TAEASS501A: Provide advanced assessment practice)

- ED202P-Assessment Development
  (TAEASS502B: Design and develop assessment tools)

- ED203P-Training Facilitation

  (TAEDEL502A: Provide advanced facilitation practice)

- ED204P-Learning Strategies

  (TAEDES501A: Design and develop learning strategies)

- ED205P- Language Literacy & Numeracy

  (TAELLN401A: Address adult language, literacy and numeracy skills)

- ED206P-Continuing Professional Development
  (TAEPDD501A: Maintain and enhance professional practice)

- ED207P Learning Resources Design & Development

  (TAEDES502A: Design and develop learning resources)

- ED208P Organizational Training Needs Analysis

  (TAETAS501B: Undertake organisational training needs analysis)

- ED 404 Educational Research (Part 1)

  (TAERES501A: Apply research to training and assessment practice)

- ED209P- Training Program Evaluation

  (TAEDES505A: Evaluate a training program)

Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111) Portfolio Guide

http://www.filefactory.com/file/rh0eb9n4sfn/TAE50111PortfolioGuide.pdf

SAMPLE PORTFOLIOS

Please note that the reference & example documents contained in the link of the portfolio can not be downloaded from the internet, they can only be available in DVDs that can be sent upon request.

The document is password protected. Password is needed and can be given upon request.

http://www.filefactory.com/file/3i8k0ls9peup/TAE50110_Diploma%20RPL%20Submission%20U%20Kyaw%20Naing.pdf

Level 3-Training Authorities Accreditation Compliances

ED320-Part (2) Myanmar Engineering Council's Accreditation Compliance Practice

Part (1) Educational Leadership Subjects

- ED 402 Educational Leadership

  http://www.filefactory.com/file/68h2rewfq7jx/ED%20402%20Educational%20Leadership.zip

- ED 301 Educational Policy (Myanmar Engineering Council Accreditation Requirements)

  Registration Rules

  http://www.filefactory.com/file/yzxtm3a7z2b/06.%20Licensing%20%26amp%3B%20Registration%20Rules%20-%20Engineering%20-%20Myanmar%20-%20CCS%2068%20reduced.pdf

Myanmar Assessment Statement

http://www.filefactory.com/file/9adocfm4877/06.%20Myanmar%20Assessment%20Statement%20-%20%28ACPECC%2014%29.pdf

Graduates Attributes

http://www.filefactory.com/file/4r5z3i9uxw5p/1%20Graduate%20Attributes%20%26amp%3B%20Terminology.pptx

Qualification Policy

http://www.filefactory.com/file/69mj6zk64zj5/Policy%20%20Qualifications%20Policy%20POL11%20v4.PDF

Regulations

http://www.filefactory.com/file/65cxuftzoxmh/Regulations.pdf

Engineers Australia References

www.highlightcomputer.com/engineersaustraliareferences.htm

- ED 308 Change Management

  http://www.filefactory.com/file/4cxrjx86buot/n/9_Leadership_Change_Management_zip

- ED309 Educational Communication

  http://www.filefactory.com/file/6tbjy1omi7kz/n/1_Educational_Communication_zip

- ED 407 Learning Environment

  http://www.filefactory.com/file/31o7fw99ux7l/ED%20407%20Learning%20Environment.zip

- ED311 Outcome based Education

  http://www.filefactory.com/file/6sq2l3hmac3b/Final%20OBE%20Training%20at%20Myanmar%20July%202014.pptx

  Part (2) Myanmar Engineering Council's Accreditation Compliance Practice

- ED301P- Curriculum design for accreditation compliance

  http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf

  Example

  www.highlightcomputer.com/OverallProgramGeneral.pdf

- ED302P-Overall accreditation and compliance practice

  http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf

  http://www.highlightcomputer.com/Accreditation.htm

Preparation for self accreditation report

http://www.filefactory.com/file/43x0yutpx31v/2%20SAR.pptx

Engineering Accreditation Plan

http://www.filefactory.com/file/2ynzo3fydckb/2015%20YTU%20First%20Workshop.pptx

ASSIGNMENT

Prepare the portfolios for your section/ department to comply with Myanmar Engineering Council's Accreditation Requirements.

Level 4-Specialized Teaching Areas

The students will have to write 20 pages study report for each of the subjects outlined in the Part 1 of any level .

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, points, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of curriculum designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

The book references for the subjects can be downloaded from the following links by entering the given password.

Password- to be given

- ED 308 Computer Supported Learning & Distance Education

  http://www.filefactory.com/file/4mdzrx52kl45/ED%20308%20Computer%20Supported%20Learning%20%26amp%3B%20Distance%20Education.zip

- ED 304 Maths Teaching

  http://www.filefactory.com/file/60ngdjnse60x/ED%20304%20Maths%20Teaching.zip

- ED 305 Science Teaching

  http://www.filefactory.com/file/4hqlf7r16xyf/ED%20305%20Science%20Teaching.zip

- ED 306 Technology Teaching

  http://www.filefactory.com/file/3crwj4pdyt7b/ED%20306%20Techology%20Teaching.zip

- ED 404 Educational Research (Part 2)

  http://www.filefactory.com/file/42pl9c8013ab/ED%20404%20Educational%20Research.zip

- ED310 Learning Technology I & II

  http://www.filefactory.com/file/3bsfz0ehba7z/n/5_Learning_Technology_1_zip

  http://www.filefactory.com/file/cvavvr9gonr/n/6_Learning_Technology_2_zip

- ED312 Technology in Classrooms

  http://www.filefactory.com/file/7jcivu232opx/n/7_Technology_in_classroom_zip

Diploma in Vocational Education & Training, Diploma in Technical Teaching (Training, Assessment & Learning Management)
Diploma in Engineering Education (YTU)

www.highlightcomputer.com/ProfDipTechTchg.pdf

Objective of the course

This Diploma in Engineering Education/Professional Diploma in Technical Teaching (Training, Assessment & Learning Management) is designed as Teachers Education Professional Development for teachers in Government Technical Colleges , Technological Universities and other Vocational Education and Training Institutions in Myanmar to upgrade their skills and knowledge in training and assessment, curriculum design and development, management of technical training institutions, adult and vocational education and training ,assessment validation and current accreditation rules and requirements of Myanmar Engineering Council as well as current training and assessment practices of overseas industrialized countries.

Learning Outcomes

After completion of the levels of the training programs, the students should be able to

- Understand adult learning principles in technical education and training contexts
- Apply the skills in training, assessment, course development, curriculum development, learning management and management of technical training institutions.
- Understand the accreditation requirements of Myanmar Engineering Council in accredited engineer, technologist and technician education & prepare for the compliance processes.
- Understand the technology, science and mathematics teaching & educational pedagogies principles of outcome based education and effectively utilize them in the workplace
- Provide effective work-based learning & career development for the working people in industries and apply the various ways of assessing the competences

Components of the course

- Educational theories ,educational technology, teaching and learning, teaching and measuring.
- Lesson planning, interpreting curriculums, class room management, instruction and assessment design, training principle, competency based training and assessment integrated the competencies of Australian Training and Assessment (TAE40110) course
- Management of educational establishment in line with the accreditation requirements of Myanmar Engineering Council by customizing the competencies in Australian Vocational Education and Training Diploma (TAE50111) to be relevant to the requirements of Myanmar Vocational Education and Training .
- Postgraduate level educational knowledge related to Learning Technology, Technology in classrooms, educational leadership, leadership and change management , computer supported learning and distance education,
- Teaching practicum preparation at different levels of training

Level	Course	Abbreviation	Pre-requisite	Target Group
1	Diploma in Vocational Education & Training (Certificate in Vocational Education & Training for completion of certain subjects)	Dip VET	Degree/Diploma /Certificate In relevant professional/ vocational areas	Vocational Education Teachers in various training courses
2	Diploma in Technical Teaching	Dip Tech Tchg	Diploma in Vocational Education & Training	Government Technical College Teachers
3	Diploma in Engineering Education	Dip Engg Ed	Diploma in Technical Teaching	Technological University Teachers
4	Diploma in Engineering Education (Specialist Discipline)	Dip Engg Ed (Specialist Area)	Diploma in Engineering Education	Technological University Teachers with specialized teaching in specific area of study.

Training & Assessment System Overview

Level	Course	2 weeks workshop (Assessment based on participation in workshop sessions)	Teaching Experience Assessment +Teaching Portfolio Assessment (Individual Assessment- During/After two weeks workshop) (The candidates can submit their portfolios)	Self study & Assignment Assessment (Individual Assessment)
1	Diploma in Vocational Education & Training (Certificate in Vocational Education & Training for completion of certain subjects)	ED120-Part (2A) Basic Teaching Practicum Preparation ED121-Part (2B) Training & Assessment Practice (Day 1 to 6 Session 3 s)	ED 103 Teaching Practice ED 104 Lesson Planning ED 106 Interpreting Curriculums ED 107 Teaching & Learning ED 201 Class Room Management & Teaching	ED 101 Theory of Education ED 102 Education Technology

Level	Course	2 weeks workshop (Assessment based on participation in workshop sessions)	Teaching Experience Assessment +Teaching Portfolio Assessment (Individual Assessment- During/After two weeks workshop)	Self study & Assignment Assessment (Individual Assessment)
2	Diploma in Technical Teaching	ED 202 Curriculum & Design ED 405 Training Principle ED220-Part (2) Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111) **(All session 3s)**	ED 206 Designing Instructions & Assessment	ED 401 Adult Learning Technology ED 205 Teaching & Measuring ED411-Engineering Education (1)
3	Diploma in Engineering Education	ED 301 Educational Policy (Myanmar Engineering Council Accreditation Requirements) ED309 Educational Communication ED311 Outcome based Education ED320-Part (2) Myanmar Engineering Council's Accreditation Compliance Practice **(All Sessions 1/2/3)**	ED301P- Curriculum design for accreditation compliance ED302P-Overall accreditation and compliance practice	ED 402 Educational Leadership ED 308 Change Management ED 407 Learning Environment ED412 Engineering Education (2)

Level	Course	2 weeks workshop (Assessment based on participation in workshop sessions)	Teaching Experience Assessment +Teaching Portfolio Assessment (Individual Assessment- During/After two weeks workshop)	Self study & Assignment Assessment (Individual Assessment)
4	Diploma in Engineering Education (Specialist Discipline)		ED 308 Computer Supported Learning & Distance Education ED310 Learning Technology I & II ED312 Technology in Classrooms	ED 304 Maths Teaching ED 305 Science Teaching ED 306 Technology Teaching ED 404 Educational Research (Part 2) ED413 Engineering Education (3)

Study Areas & Levels of Training

Level 1-Educational Theories , Teaching Pedagogies & Training and Assessment Practice

Part (1) Educational Theoretical Subjects

- ED 101 Theory of Education
- ED 102 Education Technology
- ED 103 Teaching Practice
- ED 104 Lesson Planning
- ED 105 Principle of Learning
- ED 106 Interpreting Curriculums
- ED 107 Teaching & Learning
- ED 201 Class Room Management & Teaching

ED120-Part (2A) Basic Teaching Practicum Preparation

ED101P-Teaching Support

ED102P- Application of Information Technology in School /Vocational Education

ED103P- Classroom Management

ED104P- Teaching Portfolio

ED105P- Inclusive Teaching

ED106P- Subject Area Knowledge

ED107P- Theory of Education, Educational Technology & Teaching Practice

ED107PA-Theory of Education

ED107PB-Education Technology

ED107PC-Teaching Practice

ED107PD-Lesson Planning

ED108P- Curriculum Study , Teaching & Learning

ED108PA-Principle of Learning

ED108PB-Interpreting Curriculums

ED108PC-Teaching & Learning

ED121-Part (2B) Training &Assessment Practice (Certificate IV in Training & Assessment TAE40110)

- ED111P Learning Program Design & Development Practice

  (TAEDES401A Design and develop learning programs)

- ED112P Assessing the needs of trainees

  (TAEDES402A Use training packages and accredited courses to meet client needs Delivery)

- ED113P Group based learning

  (TAEDEL401A Plan, organise and deliver group-based learning)

- ED114P Workplace Assessment

  (TAEDEL402A Plan, organise and facilitate learning in the workplace Assessment)

- ED115P Assessment Planning

  (TAEASS401B Plan assessment activities and processes)

- ED116P Competency Assessment

  (TAEASS402B Assess competence)

- ED117P Assessment Validation

  (TAEASS403B Participate in assessment validation)

- ED118P Work skills Instruction

  (TAEDEL301A Provide work skill instruction)

- ED119P Educational Presentation

  (BSBCMM401A Make a presentation)(TAEASS301B Contribute to assessment

Level 2-Adult Vocational Education

Part (1) Adult Vocational Education Theoretical Subjects

- ED 401 Adult Learning Technology
- ED 202 Curriculum & Design
- ED 205 Teaching & Measuring
- ED 206 Designing Instructions & Assessment
- ED 405 Training Principle
- ED411-Engineering Education (1)

ED220-Part (2) Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111)

- ED201P-Advanced Assessment Practice
  (TAEASS501A: Provide advanced assessment practice)
- ED202P-Assessment Development
  (TAEASS502B: Design and develop assessment tools)
- ED203P-Training Facilitation

  (TAEDEL502A: Provide advanced facilitation practice)
- ED204P-Learning Strategies

  (TAEDES501A: Design and develop learning strategies)
- ED205P- Language Literacy & Numeracy

  (TAELLN401A: Address adult language, literacy and numeracy skills)
- ED206P-Continuing Professional Development
  (TAEPDD501A: Maintain and enhance professional practice)
- ED207P Learning Resources Design & Development

  (TAEDES502A: Design and develop learning resources)
- ED208P Organizational Training Needs Analysis

  (TAETAS501B: Undertake organisational training needs analysis)
- ED 404 Educational Research (Part 1)

  (TAERES501A: Apply research to training and assessment practice)
- ED209P- Training Program Evaluation

  (TAEDES505A: Evaluate a training program)

Level 3-Training Authorities Accreditation Compliance

Part (1) Educational Leadership Subjects

- ED 402 Educational Leadership
- ED 301 Educational Policy (Myanmar Engineering Council Accreditation Requirements)
- ED 308 Change Management
- ED309 Educational Communication
- ED 407 Learning Environment
- ED311 Outcome based Education
- ED412 Engineering Education (2)

ED320-Part (2) Myanmar Engineering Council's Accreditation Compliance Practice

- ED301P- Curriculum design for accreditation compliance
- ED302P-Overall accreditation and compliance practice

Level 4-Specialized Teaching Areas

- ED 308 Computer Supported Learning & Distance Education
- ED 304 Maths Teaching
- ED 305 Science Teaching
- ED 306 Technology Teaching
- ED 404 Educational Research (Part 2)
- ED310 Learning Technology I & II
- ED312 Technology in Classrooms
- ED413 Engineering Education (3)

Diploma in Engineering Education

The following units can be added to Diploma in Technical Teaching to award Diploma in Engineering Education

ED411-Engineering Education Part 1

ED412-Engineering Education Part 2

ED413-Engineering Education Part 3

CURRICULUM

Level 1-Educational Theories , Teaching Pedagogies & Training and Assessment Practice

ED101 Theory of Education

Objective-

This unit provided the concept of education to enable the learners to understand the complex system of education by developing an understanding at different levels, inner workings of the individual learner, thinking processes and motivation & apply in practical teaching

Outcomes

- to understand all the different levels of education at the same time,
- to see personal learning and national legislation
- to build an understanding of education at all of these different levels.

Contents

Education theory, Modelling, Classroom Management, Equality of opportunity, Learning & Teaching, Quality Assurance, Theory into practice.

Instruction Reference Textbook-

Theory of Education.pdf by David A Turner + Lecture slides

Assessment

Assignments = 100% (4 assignments with 25% each)

ED 102 Education Technology

Objective-

This unit provide the knowledge to include reference to the use of technology for instruction, training, learning, or teaching. In practice, definitions serve to focus the interest of associations of individuals by emphasizing a particular scope of interest.

Outcomes

- To design, development, utilization, management, and evaluation
- To provide instructional technology," "instructional systems design," and "instructional media
- To do the design and development of instruction and instructional resources using education technologies

Contents

Active Learning, Alternative Assessment, Adult Learners, Analysis, Assistive Technology, Cognitive Apprenticeship, Computer-Assisted Instruction

Instruction Reference Textbook-

Education Technology - An Encyclopedia Edited by Ann Kovalchick and Kara Dawson+ Lecture slides

Assessment

Assignments = 100% (7 assignments)

ED 103 Teaching Practice

Objective-

To use developmental process for reflecting on and improving one's teaching; and as an evaluative product for personnel decisions such as tenure, promotion, or a teaching

Outcomes

- To provide different sources of evidence of teaching performance.
- To contribute important information about teaching performance
- To collect variety of sources of information related to teaching
- To reflect more of teaching's intellectual substance and complexity.
- To make teaching more visible through their demonstration of a variety of teaching-related activities.
- To place the initiative for reflecting on and evaluating teaching in the hands of faculty.
- To give the individual an opportunity to think about own teaching —
- To change priorities or teaching strategies as needed, and to reflect about future

Contents

Meaning of Teaching Portfolio, Why Prepare a Teaching Portfolio? ,How Does One Develop a Teaching Portfolio? ,Preparing Portfolio ,Shaping the Final Portfolio ,Keeping Your Portfolio Up to Date ,Assembling an Electronic Portfolio ,Portfolio evaluation.

Instruction Reference Textbook-

Lecture slides

Teaching-portfolio (University of South Australia

Reference- Preparing a Teaching Portfolio by Fran Mues and Mary Deane Sorcinelli The Center for Teaching University of Massachusetts Amherst

Assessment

Assignments = 100% Portfolio Assessment

ED 104 Lesson Planning

Objective-

This unit provides the methods to apply thought-stimulating examples teaching & learning techniques to be applied in training design and delivery to applv the various techniques and strategies in training design and presentation, that will stick! Specific strategies.

Outcomes

- To create trainings that are fun and memorable.
- To write learner-based trainings that guarantee success for each learner performance.
- To develop learning activities that match the need, learning style, and level of understanding of the participants.
- To use learning strategies that encourage learners to build on their experiences.
- To plan ongoing training activities that evaluate learner mastery during the entire learning event.
- To design blended and accelerated learning strategies that strengthen learning transfer back on the job.
- To identify methods that accurately measure training results.

Contents

Introducing planning, Needs, aims and objectives ANALYSIS OF NEEDS ,THE RATIONALE OF OBJECTIVES ,WRITING YOUR LEARNING OBJECTIVES ,SETTING A VARIETY OF OBJECTIVES , Learning, SKILLS, TECHNIQUES AND METHODS ,JUDGEMENT AND DECISION-MAKING,THE PLACE OF EMOTIONAL EDUCATION,PLANNING FOR THEORETICAL LEARNING,PLANNING FOR LEARNING FROM THE CONCRETE,PLANNING FOR REFLECTIVE LEARNING,PLANNING FOR ACTIVE LEARNING,PLANNING PROGRESSION FROM PRIOR LEARNING,PLANNING FUTURE PROGRESSION,CROSS-CURRICULAR LINKS,DIFFERENTIATION,PLANNING LISTENING ACTIVITIES,PLANNING SPEAKING ACTIVITIES,PLANNING WHOLE CLASS DISCUSSION,PLANNING READING,PLANNING TO DEVELOP COMPREHENSION,TEACHING PUPILS TO LEARN FROM WHOLE BOOKS,PLANNING WRITING,TEACHING ABOUT SUBJECT DISCOURSE ,Pedagogy, TASK ANALYSIS ,A SUCCESSFUL LESSON STRUCTURE ,PLANNING PRACTICE SESSIONS

Instruction Reference Textbook-

Lecture slides

Instructional Design for Action Learning By GERI M C ARDLE

100 Ideas for Lesson Planning – By Anthony Haynes

Read the above textbooks and prepare three lesson plans

Assessment

Assignments = 100% (Assessment of three lesson plans)

ED 105 Principle of Learning

Objective-

To understand the memory concept & apply it in effective teaching and learning.

Outcomes

- To demonstrate the principle of learning
- To understand the principle of control memory
- To understand the principle of Inhibition
- To apply the Principle of Adaptive Specialization as It Applies to Learning and Memory

Contents

FORMATION OF MEMORIES, ORGANIZA TION OF MEMORIES, CONSOLIDA TION OF MEMORIES, CONTROL OF MEMORIES, ADAPTIVE SPECIALIZATION OF MEMORIES

Instruction Reference Textbook-

Lecture slides

Principle of learning & memory Edited by Rainer H. Kluwe, Gerd Liier and Frank R ă s l e r

Assessment

Assignments = 100% (5 Assignments of 20% each)

ED 106 Interpreting Curriculums

Objective-

To interpret the curriculum & develop the detailed lesson plans in teaching process.

Outcomes

- To interpret the curriculum presented to teachers;
- To adopt the curriculum;

- To understand the curriculum assimilated by learners; and
- To evaluate curriculum.

Contents

KINDS OF CURRICULUM, ORIENTATIONS TO CURRICULUM, ORIENTATIONS TO CURRICULUM, TYPES OF CURRICULUM, Competency Curriculum, LEVELS OF CURRICULUM, STAGES OF THE PROCESS, CURRICULUM PLANNING, CURRICULUM DESIGN, CURRICULUM DEVELOPMENT- PHASES, CURRICULUM DEVELOPMENT. IMPLEMENTATION OF THE CURRICULUM, CURRICULUM EVALUATION, CURRICULAR CHANGES

Instruction Reference Textbook-

Lecture slides

CURRICULUM DESIGN AND DEVELOPMENT-1.pdf

THE CURRICULUM by Cecilia Braslavsky 1

Assessment

Assessment = 100% (Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED 107 Teaching & Learning

Objective-

This unit provides new and experienced faculty in all disciplines with practical, tested strategies for addressing all major aspects of college and university teaching, from planning a course through assigning final grades. Graduate student instructors and teaching assistants will also benefit from the foundational knowledge and research findings described in this unit.

Outcomes

- To addresses planning: designing a new course or revising an existing one, creating a syllabus, preparing for the class, and managing classroom conduct and decorum.
- To respond to a Changing Student Body,
- To do " Discussion Strategies, " provides ideas for leading a productive discussion, framing challenging questions, and encouraging student participation, both in class and online.
- To explore aspects of the lecture in the Large-Enrolment Course, " method: preparing and delivering effective lectures, engaging students and providing for student participation, and maintaining instructional quality with limited resources.
- To find the Alternatives and Supplements to Lectures and Discussion,
- To Enhance Students ' Learning and Motivation, " provides research -based approaches to helping students become more confident, independent, and self - motivated learners. Informal ways to assess learning and the use of mobile

- To Strengthen Students ’ Writing and Problem-Solving Skills, ”

Contents

RESPONDING TO A CHANGING STUDENT BODY ,DISCUSSION STRATEGIES ,THE LARGE-ENROLLMENT COURSE ,Maintaining Instructional Quality with Limited Resources ,ENHANCING STUDENTS’ LEARNING AND MOTIVATION ,STRENGTHENING STUDENTS’ WRITING AND,PROBLEM-SOLVING SKILLS ,TESTING AND GRADING,PRESENTATION TECHNOLOGIES ,EVALUATION TO IMPROVE TEACHING,TEACHING OUTSIDE THE CLASSROOM ,FINISHING UP

Instruction Reference Textbook-

Lecture slides

Tools for teaching by Barbara Gross Davis

Assessment

Experience Assessment = 100% (Assessed on Formal Teaching experience record for the teachers being employed by Government Technical Colleges & Technological Universities)

Separate assessment system is applied for pre-service teacher trainees.

ED 201 Class Room Management & Teaching

Objective-

To define classroom management, explain the relationship between classroom management and

discipline, and describe the concept of “culturally responsive classroom management”

Outcomes

1. To describe the characteristics of an effective teacher

2. To explain why reflection on teaching is so important for teacher growth

3. To describe the reflective decision making model of teaching

4. To identify important factors that affect instructional decision making

5.To contrast the characteristics of authoritative, authoritarian, and permissive teachers

6.To identify the ongoing tasks involved in classroom management and to explain how each contributes to a well-functioning learning environment

Contents

Instruction Reference Textbook-

Lecture slides

Classroom Teaching Skills by James M. Cooper

Other Reference

Classroom Management by Deborah Diffily & Charlotte Sassman

Assessment

Experience Assessment = 100% (Assessed on Formal Teaching experience record for the teachers being employed by Government Technical Colleges & Technological Universities)

Separate assessment system is applied for pre-service teacher trainees.

Level 2-Adult Vocational Education

ED 401 Adult Learning Technology

Objective-

This unit provides and skills and the roles of training developers and instructional designers who are responsible for analysing training needs and designing training solutions and products to meet workplace capability requirements, and evaluating the effectiveness of adult training programs.

Outcomes

To provide the guidance and advice to trainers and assessors, promoting innovative practices, e.g. e-learning, and in researching and incorporating best practice in training and assessment into training programs and products.

Contents

- Learner-Centered Teaching and the Use of Technology
- Effective Teaching with Technology in Adult Education
- Adult Learners and Their Development in the Information Society
- Supporting Lifelong Learning and Flexicurity Policies
- Adult Learning Principles as the Foundation for Innovative Technology Applications in Business and Higher Education Venues
- The Role of Learning Styles and Technology
- Innovative Instructional Strategies with the Use of Technology for Adult Learners
- Integrating Adult Learning and Technology for Effective Education:
- Strategic Approaches
- Comparing the Principles of Adult Learning with Traditional Pedagogical Teaching in Relation to the Use of Technology:

- Provide Training through instruction and demonstration of work skills
- Facilitate work-based learning
- Group based delivery
- Design and develop learning programs
- Foster and promote an inclusive learning culture
- Ensure a safe and healthy learning environment
- Individual learning
- Language Literacy & Numeracy

Instruction Reference Textbook-

Lecture Slides

Adult Learning Technology by Victor C.X. Wang

Assessment

Participation in Educational Support Workshop sessions=100%

(Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED 202 Curriculum & Design

Objective-

To provide theoretical consideration for the twenty-first century curriculum, & technological and pedagogical innovations influencing curriculum renewal together with sustainable practice in technology-rich environments.

Outcomes

- To address theoretical foundations for the development of curricula.
- To explore the pedagogical options available to higher education instructors
- To explore new ways of accessing and connecting content to multimodal forms
- To examine how curriculum design needs to be influenced by the effective development of virtual collaborative learning environments
- To devise more adaptive, educationally focused teaching and learning

Contents

Curriculum Design for the Twenty-First Century, Online Collaboration: Coordinating Technology, Strategies for Collaborative Learning, Designing a Virtual Collaborative Learning Environment, Curriculum Design as Applied to Virtual Collaborative, Course Evaluation, Creating Curriculum Within the Context of an Enterprise, Teaching Instructional Design, Online education examples.

Instruction Reference Textbook-

Lecture Slides

Curriculum Models for the 21st Century Using Learning Technologies in Higher Education

Assessment

Participation in Educational Support Workshop sessions=100%

(Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED 205 Teaching & Measuring

Objective-

To apply adaptive expertise, creative thinking, metacognition, and teamwork in teaching and measuring task

Outcomes

To apply Adaptability, Adaptive expertise, Adaptive problem solving, Communication, Creative thinking , Decision making , Metacognition, Situation awareness & Teamwork

Contents

Cognitive Readiness, A Model for Instruction and Assessment of Cognitive Readiness, The Development and Assessment of Cognitive Readiness: Lessons Learned from K-12 Education, Cognitive Readiness for Solving Equations . Cognitive Readiness Applications, Creative Thinking Abilities: Measures for Various Domains, Using Analogies as a Basis for Teaching Cognitive Readiness . Simulation Assessment of Cognitive Readiness . Assessing Cognitive Readiness in a Simulation- Based Training Environment, Software Support for Teaching and Measuring Cognitive Readiness, Cognitive Readiness for Complex Team Performance, Impact of Individual Game-Based Training on Team Cognitive Readiness

Instruction Reference Textbook-

Teaching and Measuring Cognitive Readiness by Harold F. O'Neil • Ray S. Perez • Eva L. Baker

Assessment

Participation in Educational Support Workshop sessions=100%

(Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED 206 Designing Instructions & Assessment

Objective-

To deconstruct the broad-sweeping goals of the standards and transform them into unit plan objectives (more specific) and daily instructional objectives

Outcomes

To entails a logical progression from (1) content area standards to (2) modified standards to

(3) unit plan objectives to (4) daily instructional objectives in an understandable sequence of increasing specificity

Contents

Deconstructing the Standards ,Writing Unit and Daily Instructional Objectives , Writing True–False and Completion, Items and Matching Exercises ,Writing Multiple-Choice Items ,Writing Short-Answer and Essay Items .Performance-Based Assessment ,Portfolios

Instruction Reference Textbook-

Lecture Slides

Designing Elementary Instructions & Assessments

By John L. Badgett Edwin P . Christmann

Assessment

Participation in Educational Support Workshop sessions=100%

(Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED 405 Training Principle

Objective-

To provide numerous techniques, designs, case examples, and tips for designing and facilitating training that is participant centred, brain-friendly, and experiential

Outcomes

- To explore all aspects of training.
- To promote an active approach to training
- To provide a practical handbook of techniques

Contents

INTRODUCING ACTIVE TRAINING, DESIGNING AN ACTIVE TRAINING PROGRAM, Assessing Training Needs, Developing Active Training Objectives, Creating Opening Exercises, Preparing Brain-Friendly Lectures, Using

Experiential Learning Approach, Designing Active Training Activities, Sequencing Active Training Activities, Planning Active Training Programs, Blending Technology into Active Training, CONDUCTING AN ACTIVE TRAINING PROGRAM, Beginning an Active Training Program, Gaining Leadership of the Training Group, Giving Presentations and Leading Discussions, facilitating Structured Activities and Promoting Team Learning, Concluding an Active Training Program, EXTENDING THE VALUE OF AN ACTIVE TRAINING PROGRAM, Evaluating an Active Training Program

Instruction Reference Textbook-

Lecture Slides

Active Training by Mel Silberman

Assessment

Participation in Educational Support Workshop sessions=100%

(Assess as part of Learning outcomes & curriculum development tasks in Residential Workshop session)

ED411-Engineering Education (1)

Objective-

To design the engineering educational programs and teaching programs by applying multi disciplinary approaches by combining technological aspects

Outcomes

- To attain the strategies to promote the engineering education
- To apply technological concepts in engineering teaching support system
- To develop the quality work-based learning system
- To write Sociological Rationale of a design curriculum
- To find the strategies to improve the communication skills of engineers
- To design the computer server for engineering education program

Contents

- Pre-university Outreach: Encouraging Students to Consider Engineering Careers
- The ASTutE Tutorial Assistant: Efficient, Accessible and Interactive
- Learning at Work within the Ford Motor Company
- Using Rubrics to Assess the Development of CDIO
- Syllabus Personal and Professional Skills and Attributes at the 2.x.x Level*
- Quality Assurance Issues Relating to the Delivery of Work Based Learning Programmes*

- The Role of Work-Based Learning Methodologies in the 21 st Century
- Development of Life-Long Engineering Education in the 21 st Century
- Traits Analysis and Influences on High Performing Students in Mechanical Education
- The Construction of an Instructional Quality System for Industrial Technology Education
- Design Hegemony: an Exploration of Hegemony in the Curriculum and Instruction of Industrial Design Education
- The Engineering Mechanics Interactive Lecture Series: Oligomedia Resources for Computer-Based Learning
- The Sociological Rationale of the Industrial Design Curriculum
- Achieving Advances and New Developments in Engineering and Technological Education
- Important Considerations in Improving the Acquisition of Communication Skills by Engineers
- Client-Server and Gateway Systems for Remote Control in Engineering Education
- The Development of Online Conference Management Tools as a Student Project*
- Co-operation across Disciplines in Engineering Education Using Technical and Scientific Computing Environments

Instruction Reference Textbook-

Lecture Slides

ED411 folder, read the following files

- AndersonGilbride.pdf
- austin.pdf
- barlow.pdf
- BodenGrays.pdf
- Burns&Chisholm.pdf
- BurnsChisholm1.pdf
- ChaoHuang.pdf
- Chaos.pdf
- ChengHsiao.pdf
- chapman.pdf
- ChengLiao.pdf
- Chisholm1.pdf

- DanilovaZJPs.pdf
- Dulevicius.pdf
- EwaldPage.pdf
- GolNafalskiNguynTran.pdf
- grunwald1.pdf

Assessment

Questions & answers

Level 3-Training Authorities Accreditation Compliance

ED 402 Educational Leadership

Objective-

This course provides the educators with skills to take an active and creative approach to their personal and professional development. While it may be of most interest to those in middle or senior education management, it is also designed to help teachers, governors and those in organizations allied with education.

Outcomes

To attain the competencies in

- Leading and managing
- Changing and learning
- Undertake Tasks and responsibilities

Instruction Reference Textbook-

Educational leadership and learning Practice, policy and research
by Sue Law and Derek Glover

Contents

- The context for educational leadership
- Developing leadership and management effectiveness
- Managing ourselves and leading others
- Motivating and managing others
- Leading effective teams
- Effective communication
- Organizational cultures

- Managing change and creating opportunities
- Educational improvement, inspection and effectiveness
- Leading and managing in learning organizations
- Managing staff and promoting quality
- Managing resources and finance
- Managing stakeholder relationships and partnerships
- Leading and managing for professional development

Assessment

Assignments = 100%

ED 301 Educational Policy
(Myanmar Engineering Council Accreditation Requirements)

Objective-

This course provides the educators with Myanmar Engineering Council Laws, Rules, Regulations, Accreditation Requirements, Accreditation Practices , procedures related to accreditation of engineering courses and engineering professionals in Myanmar to enable them to design, develop and teach the engineering programs accredited by Myanmar Engineering Council.

Outcomes

- To understand Myanmar Engineering Council Accreditation Rules & Regulations related to accreditation of Government Technical Colleges & Technological Universities in Myanmar.
- Get the information & knowledge on Current issues related to international & Myanmar Engineering profession.
- Participate in hand on practice workshop focussing on curriculum development & collecting and preparing the materials for accreditation by Myanmar Engineering Council Engineering Accreditation Committee & taking part in mock accreditation sessions.

Contents

- Overview of Myanmar Engineering Council Law, Regulation, Accreditation Principles
- Examples of marine engineers competency assessment in Myanmar/ in line with International Certification standards & explore the way to apply the similar competency based training in other engineering areas
- Requirement of Myanmar Engineering Council & how to design the curriculum to address the learning outcomes
- Discussing the programme structure and course contents(MEng C)
- Discussing the programme delivery and assessment methods

- Assessment Validation Guide of Myanmar Engineering Council
- Educational Resources Development in line with Myanmar Engineering Council Requirements
- Curriculum design for accreditation compliance
- Overall accreditation and compliance practice
- Preparation for self accreditation report
- Engineering Accreditation Plan

Instruction Reference Textbook-

1. Accreditation Manual
2. Graduate Attributes & Terminology.pptx
3. SAR.pptx
4. EngineerCoulcilRegulation
5. Policy - Qualifications Policy POL11 v4
6. Myanmar Engineering Council Law
7. Policies for Accreditation of Programs
8. Time line,EAC Code,Guidelines,Fees

Assessment

Assignments = Participation in workshop sessions

ED 308 Change Management

Objective-

The unit involves candidates in leading a complete cycle of the change process. This process falls into three phases that correspond broadly to the elements of competency.

i. Preparing for change

ii. Planning for change

iii. Implementing and evaluating change

Outcomes

- To provide leadership and support to others within the organization
- To manage change more effectively
- To develop educational business skills
- To analyse work practice and context, and make improvements
- To contribute to innovation and capacity building in the organization.

Contents

- Leadership issues Raising achievement
- The Leadership of Change
- A shift from management to leadership
- How not to do change management
- Managing change and transition

Instruction Reference Textbook-

Lecture Slides

Leadership+ Change Management DVD

Assessment Assignment-100%

ED309 Educational Communication

Objective-

This program uses methods of the social sciences, encompassing both qualitative and quantitative approaches to the study of communication and education. It asks in particular how education and other social systems change under the impact of new media

Outcomes

- Reflect on the historical effects of media and on the cultural uses of developments such as face-to-face speech, writing, printing, photography, film, radio, television, computers, and networked multimedia;
- Use anthropological and linguistic methods to study how the diverse forms of communication, literacy, information processing, and cognition condition educational practice; and
- Explore positive and negative effects of media on social relations and develop strategies for using information and communication technologies to improve conditions of education and life.

Contents

- Creating a production that communicates your message
- Digital Design
- Great Looking Presentations
- Planning

- Technical Papers related to effectiveness of ICT in education
- Access and equity issues
- Educational Communication Portfolio Presentation

Instruction Reference Textbook-

Lecture Slides

ED309 Educational Communication Assignment Tasks-806A Modified (Worked Examples)

Assignment

Assignments = Portfolio Assessment- 100%

ED 407 Learning Environment

Objective-

The objective of this unit is to give the candidate an understanding of the conceptualisation, historical development, assessment, determinants and effects of classroom learning environments.

Outcomes

- To review classroom learning environment for effective educational setting
- To prepare effective educational setting for teaching and learning
- To understand the students' behaviour in the classroom and the cause of the behaviour
- To effectively use the teaching and learning strategies for keeping the good learning environment in the class
- To perform educational survey task on learning environment assessment.

Contents

- Background information about the fields of school and classroom environment
- Outcomes and environment; evaluation of educational innovations
- Quantitative and qualitative methods
- Teachers' use of classroom and school environment instruments in practical attempts to improve their own classrooms and schools.
- Current trends and future desirable directions in research on educational environments.

Instruction Reference Textbook-

Lecture Slides

Learning Environment Reader

Assessment

Assignments = 100%

Action Research Project

ED311 Outcome based Education

Objective-

At the end of this training, participants will be able to understand:

- ❑ Outcome-Based Education (OBE)
- ❑ Programme Education Objectives (PEO'S),

Outcomes

Programme Outcomes (PO's), Course Outcomes (CO) and Performance Indicators

- ❑ Bloom's Learning Taxonomy
- ❑ Assessment and Evaluation Methods
- ❑ Continual Quality Improvement Process

Contents

- ❑ The Origins of Outcome Based Education
- ❑ *Approaches to OBE*
- ❑ *OBE Process*
- ❑ Educational Process - Stakeholders
- ❑ Educational Process – Lecturers' Roles
- ❑ Educational Process - References
- ❑ OBE Model Hierarchy
- ❑ Characteristics of OBE curricula
- ❑ *Types of Teaching/Learning Delivery Activities*
- ❑ *OBE Delivery*
- ❑ Continual Quality Improvement (CQI)
- ❑ Essentials for OBE's success
- ❑ Essentials Components of OBE

- ❑ Different Levels of Outcomes
- ❑ Development of Programme Education Objectives
- ❑ CHARACTERISTICS OF GOOD OUTCOME STATEMENTS
- ❑ Course Development
- ❑ ENGINEERING EDUCATION
  BLOOM'S TAXONOMY
- ❑ DOMAINS of LEARNING OUTCOMES
- ❑ Assessment in OBE
- ❑ Continual Quality Improvement (CQI)

Instruction Reference Textbook-

Lecture Slides

Final OBE Training at Myanmar July 2014. by **Ir. Professor Academician Dato' Dr. HT Chuah**
President of FEIAP

Assessment

Participation in workshop & presenting the portfolios

ED412 Engineering Education (2)

Objective-

To design the international standard engineering education program by applying total quality management

Outcomes

- To have the knowledge and skills in total quality management
- To foster the cross border co-operation
- To interface the school to engineering programs

Contents

- Secondary School-University Interface: Science and Engineering
- The Educational Process
- Quality Engineering Education: Student Skills and Experience
- The Web as a Tool for Supporting Student Learning
- Develop a Long-Term Plan to Overcome Skills Shortage
- Cross border engineering practice

- Cross-cultural Skills for engineers

Instruction Reference Textbook-

Lecture Slides

ED412 File

Assessment

Assignments = 100% (Two assignments of 50% each)

Level 4-Specialized Teaching Areas

ED 308 Computer Supported Learning & Distance Education

Objective-

This unit provides the skills related to contribute to the central questions of how students can learn collaboratively using the new technologies, the problems that can be expected, and the benefits that may ensue. The various ways to examine how computer supported group work differs from face-to-face group work, and the implications for both educators and students are provided.

Outcomes

- ❑ To offer assessment of e-learning with the hope of offering ideas in terms of practical guide and points of good practices, while addressing potential pitfalls to avoid.
- ❑ To be aware of what constitutes good and effective e-learning practices and how to design them for specific contexts and audiences in the global information
- ❑ Innovative uses of e-learning, Addressing various divides in e-learning, user centred focus in e-learning, special considerations in e-learning and development economy.

Contents

- ❑ Computer-Supported Collaborative Learning in Higher Education:
- ❑ An Introduction
- ❑ Online Group Projects: Preparing the Instructors to Prepare the Students
- ❑ Time, Place and Identity in Project Work on the Net
- ❑ The Collective Building of Knowledge in Collaborative Learning Environments
- ❑ Collaboration or Cooperation
- ❑ Analyzing Small Group
- ❑ Interactions in Educational Environments
- ❑ Mapping Perceived Socio-Emotive Quality of Small-Group Functioning
- ❑ A Constructivist Framework for Online Collaborative Learning:
- ❑ Adult Learning and Collaborative Learning Theory
- ❑ The Real Challenge of Computer-Supported Collaborative Learning
- ❑ Use and Mis-Use of Technology for Online, Asynchronous, Collaborative Learning
- ❑ The Personal and Professional Learning Portfolio
- ❑ An Online Environment for Mentoring, Collaboration, and Publication
- ❑ Problems and Opportunities of Learning Together in a Virtual Learning Environment
- ❑ Web-Based Learning by Tele-Collaborative Production in Engineering Education

- ❑ Relational Online Collaborative Learning Model
- ❑ Online, Offline and In-Between: Analyzing Mediated-Action

Instruction Reference Textbook-

Lecture Slides

Computer Supported Learning by Tim S. Roberts

Assessment

Assignments = 100%

ED 304 Maths Teaching

Objective-

This unit provides the skills to the teachers to act as mechanisms for communicating an approach to mathematics education that is eclectic and embracing, respectful and engaging, reflective and, ultimately, educational.

Outcomes

To provide the methods to the educators in class teaching to provide the students with conceptual understanding of mathematics content through modelling or interpretation of representations,

• computational fluency,
• problem solving through application of the content.

Contents

- Strategies for Vocabulary Development
- Strategies for Using Manipulatives
- Strategies for Teaching Procedures
- Strategies for Understanding Problem Solving
- Strategies for Using Mathematical Games
- Strategies for Assessing
- Mathematical Thinking

Instruction Reference Textbook-

Lecture Slides

- ❑ Multiple Perspectives on Mathematics Teaching and Learning Edited by Jo Boaler

- ❑ Strategies for Teaching Mathematics by *Deborah V. Mink*

Assessment

Assignments = 100%

ED 305 Science Teaching

Objective-

This unit provide the teaching pedagogy in science that effectively enable the teacher to transfer what they learn in our courses into their own classroom practices.

Outcomes

- To shine a spotlight on important work that science teacher educators are doing with teachers and youth
- To describe the professional purposes and benefits realized when they, as science teacher educators, arranged opportunities to teach children or adolescents.
- To utilize model teaching lessons in class room practice

Contents

- Pedagogical Content Knowledge
- Teaching & learning Through experience
- Teaching examples

Instruction Reference Textbook-

Lecture Slides

- Understanding and Developing Science Teachers' Pedagogical Content Knowledge *By* John Loughran
- Science Teacher Educators as K-12 Teachers edited by Michael Dias • Charles J. Eick, Laurie Brantley-Dias

Assessment

Assignments = 100%

ED 306 Technology Teaching

Objective-

This unit provides the teaching idea for teaching students with unique opportunities to develop a range of process skills such as critical and creative thinking skills in addition to their practical skills, through undertaking authentic tasks of real purpose.

Outcomes

- To link philosophy and educational issues in my daily work
- To help teachers to improve the teaching by means of the insights that philosophy of technology offers.

Contents

- Philosophy of technology:
- Technological artifacts
- Technological knowledge
- Technological processes
- Technology and the nature of humans
- Ethics and aesthetics of technology
- Learners' philosophies of technology
- Reconceptualizing technology through education
- Practical issues in teaching about technology

Instruction Reference Textbook-

Lecture Slides

Teaching about Technology by MARC J. DE VRIES

Assessment

Assignments = 100%

ED 404 Educational Research

Objective-

This unit describes the performance outcomes, skills and knowledge required to undertake research into educational theory and apply this research to improve current training and assessment practice.

This unit typically applies to those who need to develop skills in research in order to apply educational theory to improve current and future training and assessment practice

Outcomes

- Prepare research brief relating to training and assessment practice
- Conduct research in training and assessment practice
- Investigate and apply educational theory to the research
- Report on application of educational theory to training and assessment practice
- Review entire process

Contents

Qualitative Research and Public Policy

- Multilevel Analysis in Higher Education Research: A Multidisciplinary Approach .
- Conducting Multi-paradigm Inquiry in the Study of Higher Education Organization and Governance: Transforming
- Research Perspectives on Colleges and Universities

- Examining Pathways to and Through the Community College for Youth and Adults
- Review of the Theories Developed to Describe the Process of College Persistence and Attainment

Instruction Reference Textbook-

Lecture Slides

Higher Education: Handbook of Theory and Research

Published under the Sponsorship of the Association for Institutional Research (AIR) and the Association for the Study of Higher Education (ASHE)

Assessment

Assignments = 100%

Prepare & submit one educational research paper.

ED310 Learning Technology I & II

Objective-

On completion of this unit you should be able to demonstrate your achievement of the following

learning outcomes:

All participants will be competent, confident and professional users of e-Learning system in teaching

Outcomes

To use e-Learning tools to:

- improve their own professional productivity,
- improve their preparation for classes and teaching generally and
- improve their ability to use and integrate IT appropriately within the classroom

Contents

The Syllabus:

The unit consists of five inter-related modules:

1. **Module 1: Getting Started and IT Empowerment and Teaching**
   a. Unit Introduction

2. **Module 2: IT and Education:**
   a. The Hype and the Reality
   b. Multimedia in Education

3. **Module 3: Ghosts of Schooling Past, Present and Future**
    a. Technology and the Whole Curriculum
    b. Technology as a Classroom Tool
    c. Creating an active learning Environment

4. **Module 4: Making the World Wide Web Work for You**
    a. The Tools of the Trade
    b. Using the internet for information

5. **Module 5: Technology in Your Classroom**
    a. Classroom Applications of the
    b. WWW
    c. Educational Software
    d. Ideas, Approaches, Tools and Tricks
    e. Integration
    f. Early Learning and Primary

Tuition Pattern:

This unit is provided as an online unit. All tuition is provided through the online course website. The length of the unit is one semester (12 weeks); however, some students will finish sooner, and some may require additional time to complete it. While the weekly time commitment will vary from student to student, most should allow approximately 10 hours per week total study time for the unit.

Instruction Reference Textbook-

Lecture Slides

The CD in the folder Day 7 Session 2/ 5.Learning Technology 1/ index.html

Recommended Texts and Principal References:

- Shelly G. Cashman T.J. Gunter R.E. Gunter G.A. (2002). Teachers discovering computers: A link to the future WWW. Course Technology, Cambridge.

All other materials are supplied on Course CD-ROMS and online.

Assessment

Two assignments= 100%

ED312 Technology in Classrooms

Objective-

To provide use of technology in educational context by combining with teaching and learning principle, educational leadership skills and educational leadership skills.

Outcomes

On completion of this unit you should be able to demonstrate your achievement of the following learning outcomes:

Upon completion, the participant;

1. Through the use of professional based portfolios will design, implement and evaluate the use of IT, multimedia and the Internet in their own classrooms

2. Using the skills and knowledge developed within the unit, conduct research of the use on learning technologies within the areas of;
    a. Learning technologies and Developing Leadership Skills in Technology
    b. Assessing and Changing IT Learning Environments

    Teaching and Learning Principles for Technology-Rich Classrooms

Contents The unit consists of 2 inter-related sections:

1. **Section 1**
    a. Conduct independent research in one of the following
        i. Developing Leadership Skills in Technology
        ii. Assessing and Changing IT Learning Environments
        iii. Teaching and Learning Principles for Technology-Rich Classrooms
2. **Section 2**
    a. The development of two Portfolios
        i. "Classroom" based portfolio that demonstrates the use and integration of educational technology in your classroom or workplace.
        ii. "Personal" based portfolio that provides the student with the opportunity to demonstrate the use and educational practice in professional practice.

Instruction Reference Textbook-

Lecture Slides

Day 8 Session 1/ 7.Technology in classroom/ index.html

Assessment

Assignments = 100%

ED413 Engineering Education (3)

Objective-

This unit provides the engineering educators with engineering ethical issues, New pedagogy , Industrial co-operation & Lifelong learning and Strategic Planning skills in engineering education

Outcomes

Design the engineering programs by taking account on emphasizing in engineering ethics & by utilizing innovative new teaching pedagogies

Contents

- Engineering ethics
- Engineering teaching pedagogies
- New training and work-based approach
- Strategies planning in engineering education

Instruction Reference Textbook-

- ED413 Par1 Ethics
- ED413 Part2 New pedagogy , Industrial co-operation & Lifelong learning
- ED413 Part3 Strategic Planning in Engineering Education
- ED413 Part4 Training & Work-based Approach

Assessment

Assignments = Project 100%

RESOURCES

ASSESSMENT FOR THE SUBJECTS IN PART 1 OF THE LEVELS

The students will have to write 20 pages study report for each of the subjects outlined in the Part 1 of any level .

The report general needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, points, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of curriculum designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

The book references for the subjects can be downloaded from the following links by entering the given password. The detailed instruction will be given in subject study guides. Some of the units can be assessed in residential training workshops.

Password- to be given

ASSESSMENT FOR THE SUBJECTS IN PART 2 OF THE LEVELS

Follow the specific assessment instruction provided for the units in Part 2 of the levels

ED120-Part (2A) Basic Teaching Practicum Preparation

Study Areas & Levels of Training

Level 1-Educational Theories , Teaching Pedagogies & Training and Assessment Practice

Part (1) Educational Theoretical Subjects

- ED 101 Theory of Education

  http://www.filefactory.com/file/4fuby1dpqs9f/ED%20101%20Theory%20of%20Education.zip
- ED 102 Education Technology

  http://www.filefactory.com/file/1ghlzng7e0n3/ED%20102%20Education%20Technology.zip
- ED 103 Teaching Practice

  http://www.filefactory.com/file/1o732n0j46mf/ED%20103%20Teaching%20Practice.zip
- ED 104 Lesson Planning

  http://www.filefactory.com/file/4m30ym0ez37r/ED%20104%20Lesson%20Planning.zip

- ED 105 Principle of Learning

  http://www.filefactory.com/file/7660l6kjr8sx/ED%20105%20Principle%20of%20Learning.zip

- ED 106 Interpreting Curriculums

  http://www.filefactory.com/file/1h141zxbov8z/ED%20106%20Interpreting%20Curriculums.zip

- ED 107 Teaching & Learning

  http://www.filefactory.com/file/6u5o455lyqj7/ED%20107%20Teaching%20%26amp%3B%20Learning.zip

- ED 201 Class Room Management & Teaching

  http://www.filefactory.com/file/48gvqykksgiz/ED%20201%20Class%20Room%20Mgt%20%26amp%3B%20Teaching.zip

  Part (2A) Basic Teaching Practicum Preparation

Follow the specific assessment instruction provided for the units in Part 2 of the levels

ED101P-Teaching Support

ED102P- Application of Information Technology in School /Vocational Education

ED103P- Classroom Management

ED104P- Teaching Portfolio

ED105P- Inclusive Teaching

ED106P- Subject Area Knowledge

Certificate in Teaching Support+ Diploma in Teaching Practice+ Bachelor of Teaching+ Bachelor of Education (School & Vocational)
http://www.filefactory.com/file/4a5o50idxgvr/Diploma%20in%20Teaching%20Practice.pdf

ED107P- Theory of Education, Educational Technology & Teaching Practice

ED107PA-Theory of Education

ED107PB-Education Technology

ED107PC-Teaching Practice

ED107PD-Lesson Planning

ED108P- Curriculum Study , Teaching & Learning

ED108PA-Principle of Learning

ED108PB-Interpreting Curriculums

ED108PC-Teaching & Learning

ED 107 Lesson Slide 1 to 20 Mod.pdf (4.71MB)
http://www.filefactory.com/file/1w4faybri0p9/n/ED_107_Lesson_Slide_1_to_20_Mod.pdf

Download now by clicking the above link!

ED107 Lesson Slide 21 to 40.pdf (3.06MB)
http://www.filefactory.com/file/1ae111n3e1gl/n/ED107_Lesson_Slide_21_to_40.pdf
Download now!

ED107 Lesson Slide 41 to 60.pdf (3.27MB)
http://www.filefactory.com/file/4slgwynziwxz/n/ED107_Lesson_Slide_41_to_60.pdf
Download now!

ED107 Lesson Slide 61 to 80.pdf (3.22MB)
http://www.filefactory.com/file/1txrj08z5329/n/ED107_Lesson_Slide_61_to_80.pdf
Download now!

ED107 Lesson Slide 81 to 100.pdf (2.97MB)
http://www.filefactory.com/file/15p9vb74rljl/n/ED107_Lesson_Slide_81_to_100.pdf
Download now!

ED107 Lesson Slide 101 to 120.pdf (3.07MB)
http://www.filefactory.com/file/lxvcg3369i9/n/ED107_Lesson_Slide_101_to_120.pdf
Download now!

ED107 Lesson Slide 121 to 140.pdf (2.69MB)
http://www.filefactory.com/file/6h7bu8dsq7q7/n/ED107_Lesson_Slide_121_to_140.pdf
Download now!

ED107 Lesson Slide 141 to 160.pdf (2.57MB)
http://www.filefactory.com/file/6pxq45urnfyn/n/ED107_Lesson_Slide_141_to_160.pdf
Download now!

ED107 Lesson Slide 161 to 180.pdf (2.99MB)
http://www.filefactory.com/file/6srxl6iwl2o3/n/ED107_Lesson_Slide_161_to_180.pdf
Download now!

ED107 Lesson Slide 181 to 200.pdf (2.76MB)
http://www.filefactory.com/file/10d9wna6jr4r/n/ED107_Lesson_Slide_181_to_200.pdf
Download now!

ED107 Lesson Slide 201 to 220.pdf (2.86MB)
http://www.filefactory.com/file/3o4wea6j5uof/n/ED107_Lesson_Slide_201_to_220.pdf
Download now!

ED107 Lesson Slide 221 to 240.pdf (3.27MB)
http://www.filefactory.com/file/32bcquqzs1ll/n/ED107_Lesson_Slide_221_to_240.pdf
Download now!

ED107 Lesson Slide 241 to 260.pdf (2.83MB)
http://www.filefactory.com/file/p0y76lkvkjd/n/ED107_Lesson_Slide_241_to_260.pdf
Download now!

ED107 Lesson Slide 261 to 280.pdf (2.84MB)
http://www.filefactory.com/file/2kdx8ty4uj1d/n/ED107_Lesson_Slide_261_to_280.pdf
Download now!

ED107 Lesson Slide 281 to 304.pdf (3.78MB)
http://www.filefactory.com/file/1y06uzz0iaq1/n/ED107_Lesson_Slide_281_to_304.pdf
Download now!

ED 107 Exercises.pdf (2.3MB)
http://www.filefactory.com/file/1isf2cao4gxx/n/ED_107_Exercises.pdf
Download now!

ED 108 Curriculum Study , Teaching & Learning Lessons

ED108 Lesson Slide 1 to 20.pdf (2.37MB)
http://www.filefactory.com/file/6r5rg8bucgkx/n/ED108_Lesson_Slide_1_to_20.pdf
Download now!

ED108 Lesson Slide 21 to 40.pdf (2.69MB)
http://www.filefactory.com/file/1wxu981xeel/n/ED108_Lesson_Slide_21_to_40.pdf
Download now!

ED108 Lesson Slide 41 to 60.pdf (2.27MB)
http://www.filefactory.com/file/71av1by59uit/n/ED108_Lesson_Slide_41_to_60.pdf
Download now!

ED108 Lesson Slide 61 to 80.pdf (2.12MB)
http://www.filefactory.com/file/4qghmt89g2zr/n/ED108_Lesson_Slide_61_to_80.pdf
Download now!

ED108 Lesson Slide 81 to 100.pdf (2.22MB)
http://www.filefactory.com/file/11jmlg5ax3e1/n/ED108_Lesson_Slide_81_to_100.pdf
Download now!

ED108 Lesson Slide 101 to 120.pdf (2.57MB)
http://www.filefactory.com/file/67air98a9wpz/n/ED108_Lesson_Slide_101_to_120.pdf
Download now!

ED108 Lesson Slide 121 to 140.pdf (2.32MB)
http://www.filefactory.com/file/2fw5kwlelb03/n/ED108_Lesson_Slide_121_to_140.pdf
Download now!

ED108 Lesson Slide 141 to 168.pdf (2.7MB)
http://www.filefactory.com/file/5foiol6m9rwx/n/ED108_Lesson_Slide_141_to_168.pdf
Download now!

ED 108 Exercises.pdf (1.22MB)
http://www.filefactory.com/file/5o110j6pg6dz/n/ED_108_Exercises.pdf
Download now!

Part (2B) Training &Assessment Practice (Certificate IV in Training & Assessment TAE40110)

ED121-Part (2B) Training &Assessment Practice

(Certificate IV in Training & Assessment TAE40110)

Follow the specific assessment instruction provided for the units in Part 2 of the levels

- ED111P Learning Program Design & Development Practice

  (TAEDES401A Design and develop learning programs)

- ED112P Assessing the needs of trainees

  (TAEDES402A Use training packages and accredited courses to meet client needs Delivery)

- ED113P Group based learning

  (TAEDEL401A Plan, organise and deliver group-based learning)

- ED114P Workplace Assessment

  (TAEDEL402A Plan, organise and facilitate learning in the workplace Assessment)

- ED115P Assessment Planning

  (TAEASS401B Plan assessment activities and processes)

- ED116P Competency Assessment

  (TAEASS402B Assess competence)

- ED117P Assessment Validation

  (TAEASS403B Participate in assessment validation)

- ED118P Work skills Instruction

  (TAEDEL301A Provide work skill instruction)

- ED119P Educational Presentation

  (BSBCMM401A Make a presentation)(TAEASS301B Contribute to assessment

RESOURCES FOR ABOVE UNITS

Working in Vocational Education & Assessment

http://www.filefactory.com/file/136bwooflstr/n/3_Assessment_Working_in_VET_zip

Preparing vocational teaching portfolios

http://www.filefactory.com/file/2l9iu8ptfk0t/n/8_Guides_for_preparing_VET_portfolios_zip

Learning , Facilitation & Teaching in Vocational Education and Training

http://www.filefactory.com/file/3b1d9kduz515/n/4_Learning_Facilitation_Teaching_in_VET_zip

Work-based Learning & Assessment

http://www.filefactory.com/file/5pef2h8dhav9/n/10_Workbased_Learning_amp_Assessment_2_zip

Learning Environment

http://www.filefactory.com/file/5l12qij9s67j/n/12_Learning_Environment_zip

Level 2-Adult Vocational Education

ED220-Part (2) Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111)

Part (1) Adult Vocational Education_Theoretical Subjects

Password- to be given

- ED 401 Adult Learning Technology

  http://www.filefactory.com/file/68y4bd94ianb/ED%20401%20Adult%20Learning%20Technology.zip

- ED 202 Curriculum & Design

  http://www.filefactory.com/file/1jotv5d428j1/ED%20202%20Curriculum%20%26amp%3B%20Design.zip

- ED 205 Teaching & Measuring

  http://www.filefactory.com/file/4eu01ck2awl/ED%20205%20Teaching%20%26amp%3B%20Measuring.zip

- ED 206 Designing Instructions & Assessment

  http://www.filefactory.com/file/4dnh3r8wsd9t/ED%20206%20Designing%20Instructions%20%26amp%3B%20Assessment.zip

- ED 405 Training Principle

  http://www.filefactory.com/file/5qupttpxznin/ED%20405%20Training%20Principle.zip

  Part (2) Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111)

Follow the specific assessment instruction provided for the units in Part 2 of the levels

- ED201P-Advanced Assessment Practice
  (TAEASS501A: Provide advanced assessment practice)

- ED202P-Assessment Development
  (TAEASS502B: Design and develop assessment tools)

- ED203P-Training Facilitation

  (TAEDEL502A: Provide advanced facilitation practice)

- ED204P-Learning Strategies

  (TAEDES501A: Design and develop learning strategies)

- ED205P- Language Literacy & Numeracy

  (TAELLN401A: Address adult language, literacy and numeracy skills)

- ED206P-Continuing Professional Development
  (TAEPDD501A: Maintain and enhance professional practice)

- ED207P Learning Resources Design & Development

  (TAEDES502A: Design and develop learning resources)

- ED208P Organizational Training Needs Analysis

  (TAETAS501B: Undertake organisational training needs analysis)

- ED 404 Educational Research (Part 1)

  (TAERES501A: Apply research to training and assessment practice)

- ED209P- Training Program Evaluation

  (TAEDES505A: Evaluate a training program)

Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111) Portfolio Guide

http://www.filefactory.com/file/rh0eb9n4sfn/TAE50111PortfolioGuide.pdf

SAMPLE PORTFOLIOS

Please note that the reference & example documents contained in the link of the portfolio can not be downloaded from the internet, they can only be available in DVDs that can be sent upon request.

The document is password protected. Password is needed and can be given upon request.

http://www.filefactory.com/file/3i8k0ls9peup/TAE50110_Diploma%20RPL%20Submission%20U%20Kyaw%20Naing.pdf

Level 3-Training Authorities Accreditation Compliances

ED320-Part (2) Myanmar Engineering Council's Accreditation Compliance Practice

Part (1) Educational Leadership Subjects

- ED 402 Educational Leadership

  http://www.filefactory.com/file/68h2rewfq7jx/ED%20402%20Educational%20Leadership.zip

- ED 301 Educational Policy (Myanmar Engineering Council Accreditation Requirements)

  Registration Rules

  http://www.filefactory.com/file/yzxtm3a7z2b/06.%20Licensing%20%26amp%3B%20Registration%20Rules%20-%20Engineering%20-%20Myanmar%20-%20CCS%2068%20reduced.pdf

Myanmar Assessment Statement

http://www.filefactory.com/file/9adocfm4877/06.%20Myanmar%20Assessment%20Statement%20-%20%28ACPECC%2014%29.pdf

Graduates Attributes

http://www.filefactory.com/file/4r5z3i9uxw5p/1%20Graduate%20Attributes%20%26amp%3B%20Terminology.pptx

Qualification Policy

http://www.filefactory.com/file/69mj6zk64zj5/Policy%20%20Qualifications%20Policy%20POL11%20v4.PDF

Regulations

http://www.filefactory.com/file/65cxuftzoxmh/Regulations.pdf

Engineers Australia References

www.highlightcomputer.com/engineersaustraliareferences.htm

- ED 308 Change Management

  http://www.filefactory.com/file/4cxrjx86buot/n/9_Leadership_Change_Management_zip

- ED309 Educational Communication

  http://www.filefactory.com/file/6tbjy1omi7kz/n/1_Educational_Communication_zip

- ED 407 Learning Environment

  http://www.filefactory.com/file/31o7fw99ux7l/ED%20407%20Learning%20Environment.zip

- ED311 Outcome based Education

  http://www.filefactory.com/file/6sq2l3hmac3b/Final%20OBE%20Training%20at%20Myanmar%20July%202014.pptx

  Part (2) Myanmar Engineering Council's Accreditation Compliance Practice

- ED301P- Curriculum design for accreditation compliance

  http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf

  Example

  www.highlightcomputer.com/OverallProgramGeneral.pdf

- ED302P-Overall accreditation and compliance practice

  http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf

  http://www.highlightcomputer.com/Accreditation.htm

Preparation for self accreditation report

http://www.filefactory.com/file/43x0yutpx31v/2%20SAR.pptx

Engineering Accreditation Plan

http://www.filefactory.com/file/2ynzo3fydckb/2015%20YTU%20First%20Workshop.pptx

ASSIGNMENT

Prepare the portfolios for your section/ department to comply with Myanmar Engineering Council's Accreditation Requirements.

Level 4-Specialized Teaching Areas

The students will have to write 20 pages study report for each of the subjects outlined in the Part 1 of any level .

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, points, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of curriculum designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

The book references for the subjects can be downloaded from the following links by entering the given password.

Password- to be given

- ED 308 Computer Supported Learning & Distance Education

  http://www.filefactory.com/file/4mdzrx52kl45/ED%20308%20Computer%20Supported%20Learning%20%26amp%3B%20Distance%20Education.zip

- ED 304 Maths Teaching

  http://www.filefactory.com/file/60ngdjnse60x/ED%20304%20Maths%20Teaching.zip

- ED 305 Science Teaching

  http://www.filefactory.com/file/4hqlf7r16xyf/ED%20305%20Science%20Teaching.zip

- ED 306 Technology Teaching

  http://www.filefactory.com/file/3crwj4pdyt7b/ED%20306%20Techology%20Teaching.zip

- ED 404 Educational Research (Part 2)

  http://www.filefactory.com/file/42pl9c8013ab/ED%20404%20Educational%20Research.zip

- ED310 Learning Technology I & II

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http://www.filefactory.com/file/6wbht76ud0up/n/ED_205S-Guides_for_preparing_teaching_&_training_portfolios.zip

ED 206S-. Learning Environment.zip (14.53MB)
http://www.filefactory.com/file/7kf9ffq45met/n/ED_206S-._Learning_Environment.zip

TeachingandLearning(LeadershipTraining).pdf (0.12MB)
http://www.filefactory.com/file/1nncyou98dln/n/TeachingandLearning(LeadershipTraining).pdf

St Clements Technological University

Bachelor of Education (School& Vocational Education) Course Resources

BEd Syllabus.pdf (25.57MB)
http://www.filefactory.com/file/47ok3yh0ptdf/n/BEd_Syllabus.pdf

Vocatinal_Education_Teacher_Education.pdf (0.23MB)
http://www.filefactory.com/file/7dio96wj0fpn/n/Vocatinal_Education_Teacher_Education.pdf

ED 101M Theory of Education.zip (23.6MB)
http://www.filefactory.com/file/37wny3i62snh/n/ED_101M_Theory_of_Education.zip

ED 102M Education Technology.zip (8.05MB)
http://www.filefactory.com/file/4737kz2hd25v/n/ED_102M_Education_Technology.zip

ED 103M Teaching Practice.zip (3.43MB)
http://www.filefactory.com/file/7j6gqcne2vhx/n/ED_103M_Teaching_Practice.zip

ED 104MLesson Planning.zip (6.36MB)
http://www.filefactory.com/file/1tflgnii2np/n/ED_104MLesson_Planning.zip

ED 105M Principle of Learning.zip (22.69MB)
http://www.filefactory.com/file/42ca0fkc9237/n/ED_105M_Principle_of_Learning.zip

ED 106M Interpreting Curriculums.zip (2.15MB)
http://www.filefactory.com/file/3kh03prq42qx/n/ED_106M_Interpreting_Curriculums.zip

ED 106M Reading & Writing to Learn.zip (34.11MB)
http://www.filefactory.com/file/iz7lmx1wmq9/n/ED_106M_Reading_&_Writing_to_Learn.zip

ED 107M Teaching & Learning.zip (46.75MB)
http://www.filefactory.com/file/631987knookb/n/ED_107M_Teaching_&_Learning.zip

ED 108M Teaching Elementary.zip (12.08MB)
http://www.filefactory.com/file/5c6qccz7cucr/n/ED_108M_Teaching_Elementary.zip

ED 109M Reading & Writing to Learn.zip (34.11MB)
http://www.filefactory.com/file/4gj7suey229v/n/ED_109M_Reading_&_Writing_to_Learn.zip

ED 201M Class Room Mgt & Teaching.zip (6.07MB)
http://www.filefactory.com/file/kgrydg3ypwb/n/ED_201M_Class_Room_Mgt_&_Teaching.zip

ED 202MCurriculum & Design.zip (5.3MB)
http://www.filefactory.com/file/7cqhq7j9kwth/n/ED_202MCurriculum_&_Design.zip

ED 203M K-12 Education.zip (3.17MB)
http://www.filefactory.com/file/4js0izomzttn/n/ED_203M_K-12_Education.zip

ED 204M School & Vocational Education.zip (26.56MB)
http://www.filefactory.com/file/3qmrqiyi582r/n/ED_204M_School_&_Vocational_Education.zip

ED 205M Teaching & Measuring.zip (3.79MB)
http://www.filefactory.com/file/6kf3r9t4h77h/n/ED_205M_Teaching_&_Measuring.zip

ED 206MDesigning Instructions & Assessment.zip (21.22MB)
http://www.filefactory.com/file/728astf67jp5/n/ED_206MDesigning_Instructions_&_Assessment.zip

ED 207M Teacher Education.zip (9.65MB)
http://www.filefactory.com/file/7i2ete7opoq1/n/ED_207M_Teacher_Education.zip

ED 208MInclusive Teaching.zip (5.39MB)
http://www.filefactory.com/file/bn1hae6bi4l/n/ED_208MInclusive_Teaching.zip

ED 301M Educational Policy.zip (3.85MB)
http://www.filefactory.com/file/3sxa5wbss6t3/n/ED_301M_Educational_Policy.zip

ED 302M English Teaching.zip (2.53MB)
http://www.filefactory.com/file/2d8pfjzl4qip/n/ED_302M_English_Teaching.zip

ED 303M Humanities Teaching.zip (3.11MB)
http://www.filefactory.com/file/3kg8izoj3rt9/n/ED_303M_Humanities_Teaching.zip

ED 304M Maths Teaching.zip (10.03MB)
http://www.filefactory.com/file/66veqfc8j3lz/n/ED_304M_Maths_Teaching.zip

ED 305MScience Teaching.zip (14.87MB)
http://www.filefactory.com/file/5fj9qd094r8l/n/ED_305MScience_Teaching.zip

ED 306M Techology Teaching.zip (4.63MB)
http://www.filefactory.com/file/4s19f6qglmud/n/ED_306M_Techology_Teaching.zip

ED 307M Business Teaching.zip (12.84MB)
http://www.filefactory.com/file/1p17ptf0vnf9/n/ED_307M_Business_Teaching.zip

ED 308M Computer Supported Learning & Distance Education.zip (44.37MB)
http://www.filefactory.com/file/199w1e2bz4n/n/ED_308M_Computer_Supported_Learning_&_Distance_Education.zip

ED 401M Adult Learning Technology.zip (37.55MB)
http://www.filefactory.com/file/7b0acvxskizv/n/ED_401M_Adult_Learning_Technology.zip

ED 402M Educational Leadership.zip (14.42MB)
http://www.filefactory.com/file/rsofrjay7zf/n/ED_402M_Educational_Leadership.zip

ED 403M School Culture.zip (14.7MB)
http://www.filefactory.com/file/crtcalwa6yx/n/ED_403M_School_Culture.zip

ED 404M Educational Research.zip (10.58MB)
http://www.filefactory.com/file/18hsluxzajyf/n/ED_404M_Educational_Research.zip

ED 405M Training Principle.zip (2.73MB)
http://www.filefactory.com/file/l89e26ckyup/n/ED_405M_Training_Principle.zip

ED 406M Educational Policy.zip (9.04MB)
http://www.filefactory.com/file/3xbww7cqc4z9/n/ED_406M_Educational_Policy.zip

ED 407M Learning Environment.zip (29.11MB)
http://www.filefactory.com/file/3t0xpd7mklrl/n/ED_407M_Learning_Environment.zip

ED 408M Middle & High School Teaching.zip (3.66MB)
http://www.filefactory.com/file/efhe9b3ae4p/n/ED_408M_Middle_&_High_School_Teaching.zip

Preparation for Teaching Practice & TVET Teacher Training (Introductory 2 weeks course)

Course Outline

This two weeks course is designed as Technical Teacher Education Professional Development course for teachers working at Government Schools, Private Schools, TVET Centres, Voluntary Schools as well as Government Technological Universities and Technical Colleges to effectively design, teach and assess the quality learning programs at upper secondary, TVET and tertiary technical education sectors..

Aim of the course

To provide the training to the technical education teachers to understand and apply the principles of secondary and adult & vocational education outcome based education, competency based training. compliance with Qualification & Training Authority-such as Ministry of Education/TVET Council etc , Educational Regulations and Standards by taking part in intensive workshop focussing on curriculum development and assessment documents portfolio preparations for meeting the relevant educational standards.

Outcome of the course

After completion of this course, the participant will be able to

- Understand the objective of National Education Strategic Plan 2016 to 2021 of Myanmar.
- Understand and utilize the principle & features of Outcome based education & critical thinking
- Understand the Technical & Vocational Education, Work based Learning and Competency based training & assessments tasks.
- Acquire the knowledge on Competency based education and training and training packages being used in industrialized countries (Examples of Australian Standard Competency based vocational education & training system.
- Get the information & knowledge on Current issues related to international & Myanmar TVET .
- Participate in hand on practice workshop focussing on curriculum development & collecting and preparing the materials for educational quality control tasks.

- Explore the School , Technical ,Adult & Vocational Educational Literatures, Textbooks, References & Resources, e-Learning, Learning Technology & Technology in classroom resources knowledge sharing.
- Certificate/Diploma of Teaching Practice & Certificate/Diploma of Vocational Education & Training will be issued.

Target Group

- TVET Teachers, Voluntary School Teachers, Government & Private Vocational / Engineering Education Teachers.

Arrangement of attendances

- It will be teacher professional development course for various Government & Non Government Schools and Colleges. The attenders should seek the appropriate permission from their employments.

Place of the course

- Appropriate training venue arranged by Myanmar Vocational Training Collaboration and its partnered organization: Welfare Evolvement & Development Organization

Course Duration

12 days (Mondays to Saturdays) (December 2017)(The exact date will be provided)

Requirements

The participants will need to bring the documents related to teaching plan, curriculum, course materials or reference notes that they are using in teaching Access to laptop/computer will be required for the participants. Teaching aids such as white board , computer & Overhead Projector will be required to show the slides. It will be better to access Internet.

Sessions , trainers and facilitators

Day	Session 1 9 to 10:30AM	Tea break	Session 2 11 to 12:30 Noon	Lunch break 12:30 to 1:30 PM	Session 3 1:30 to 3:30PM (The extended time up to 5PM can be taken up to the duration of workshop & group works)
1	Welcome speech by • Chairman of Welfare Evolvement & Development Organization • Introduction to trainers & facilitators Outline of the program • Participants ' self introduction • General information and arrangement (detailed time schedule needs to be arranged)	Morning tea and networking	Overview of National Education Strategic Plan Role of TVET For TU/GTC Teachers Overview of Myanmar Engineering Council Law, Regulation, Accreditation Principles	Lunch	Theory of Education+ Curriculum ED107 Theory of Education, Educational Technology & Teaching Practice (15 Credits) ED107A-Theory of Education (ED101) (Slide 1 to 60 Principle of Learning) ED107B-Education Technology (ED102) (Slide 61 to 100) Supporting slides Teacher Training/ Support Lesson Slides/ • ED101-Teaching Support-Fundamental of Education.ppt For TU/GTC Teachers Highlighting 9.2.1 General Information (MEng C) 9.2.2 Programme Objectives & writing the objectives of the course by Dr Kyaw Naing **Reference Reading (Education theory)** ED 106 Interpreting Curriculums E6%20Interpreting%20Curriculums.zip **Practical Information** Provide the examples of how to set up the program

					Stage 1 Competencies of PEng, Eng Technologists & Eng Associates Engineering job competencies http://www.highlightcomputer.com/EngineeringJobCompetencies.pdf Participants' tasks Write the Lesson objectives of one lesson in teaching/ engineering programs that they are teaching, discussion
2	Teaching Practice ED107C-Teaching Practice (ED103 Classroom Management) (Slide 101 to 140) Supporting slides • ED103 Classroom Management-bestpreacticesinteaching.ppt	Morning tea and networking	**Outcome based Education + Competency based education & training & how the competency based training is important to reach the desired outcome** By Dr Kyaw Naing References *Characteristics of Learning Outcomes* In Certificate I to Vocational Diploma http://www.filefactory.com/file/32hy8l1za8wz/TAE10_R3.4.docm Page 36 to 41	Lunch	Critical Thinking National Strategic Plan 2016-2021 Myanmar/ Grad Cert HEd/ ED431-434MP4/ ED431CriticalThinking 24 Slides.pptx

			Provide the level of performances of the students tasks in the curriculums & activities Sample Curriculums Certificate to Advanced Diploma http://www.highlightcomputer.com/detailedcontent.htm Bachelor degrees equivalent level http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm		
3	Lesson Planning ED107D-Lesson Planning (ED104 Teaching Portfolio)(Slide 241 to 300) ED107E-Teaching& Learning (Slide 141 to 160+ Slide 200 to 240) Supporting slides • ED104 lesson planning.ppt TU GTC Teachers 9.2.3 Learning Outcomes **Requirement of Myanmar Engineering Council**	Morning tea and networking	Career Flow Diagram & Vocational Training/ Resources MyanmarVocationalTraining Certificate TVET Lessons MVTCLevelTraining Mvtccourseresources TU GTC Teachers **Engineering Fundamental**	Lunch	**Curriculum Study** Ed108 Supporting slides ED106-Interpreting Curriculum.ppt

	ED 202 Curriculum & Design http://www.filefactory.com/file/1jotv5d428j1/ED%20202%20Curriculum%20%26amp%3B%20Design.Zip Practical Example www.highlightcomputer.com/OverallProgramGeneral.pdf Page 13 to 21				**Education Theory Reference** ED 106 Interpreting Curriculums http://www.filefactory.com/file/1h141zxbov8z/ED%20106%20Interpreting%20Curriculums.zip
4	School Education Overview of Year 9 to 12 Subjects http://www.highlightcomputer.com/nldschool.htm http://www.highlightcomputer.com/y712.htm http://www.highlightcomputer.com/y712lessons.htm http://www.highlightcomputer.com/y910.htm TU GTC Teachers 9.2.4 Academic Curriculum **Discuss the programme structure and course contents(MEng C)**	Morning tea and networking	**General Knowledge related to overseas programs/ Vocational Training Packages** By Dr Kyaw Naing **Vocational Education Teacher Education** http://www.filefactory.com/file/4yb11lp1x9b/n/Vocatinal_Education_Teacher_Education_pdf **Sample Training Packages** Electrotechnology/ Electronics/ /Communication **UEE11_R1.5.docm (13.37MB)** http://www.filefactory.com/file/1n283tjamw2p/n/UEE11_R1.5.doc	Lunch	**Curriculum Development / Individual Teaching Needs Workshop** Group work on selecting the Contents of curriculums & training packages into teaching curriculums of participants' institutions. Group discussion, feedback Facilitator Dr Kyaw Naing & Other trainers **Examples** www.highlightcomputer.com/OverallProgramGeneral.pdf Page 22 to 43

			Electricity Supply **UET12_R2.1.docm (7.86MB)** http://www.filefactory.com/file/56saqflqmh41/n/UET12_R2.1.docm Electrical Power Generation **UEP12_R2.1.docm (7.79MB)** http://www.filefactory.com/file/52pe03hs2xq1/n/UEP12_R2.1.docm Automotive **AUR12_R2.1.docm (13.37MB)** http://www.filefactory.com/file/4qtgr5i39dzl/n/AUR12_R2.1.docm Manufacturing & Engineering (Mechanical) **MEM05_R11.1.docm (9.8MB)** http://www.filefactory.com/file/29evfecw9yk9/n/MEM05_R11.1.docm Marine **MAR_R2.0.docm (1.78MB)** http://www.filefactory.com/file/6sodu2z259j3/n/MAR_R2.0.docm		**Samples** http://www.highlightcomputer.com/BECurriculum.htm http://www.highlightcomputer.com/DiplomaAdvancedDiplomaCivilEngineeringCurriculum.htm http://www.highlightcomputer.com/DiplomaAdvancedDiplomaElectricalEngineeringCurriculum.htm http://www.highlightcomputer.com/DiplomaAdvancedDiplomaMechanicalEngineeringCurriculum.htm **Examples** Page 77 to 86 of www.highlightcomputer.com/OverallProgramGeneral.pdf

			Textile **LMT07_R4.1.docm (8.28MB)** http://www.filefactory.com/file/6gea7ztqqsq3/n/LMT07_R4.1.docm Construction **CPC08_R9.0.docm (9.59MB)** http://www.filefactory.com/file/3j1y315nbze7/n/CPC08_R9.0.docm Information Technology **ICA11_R2.0.docm (5.27MB)** http://www.filefactory.com/file/4e3ioubld73n/n/ICA11_R2.0.docm Chemical **PMA02_2.pdf (1.92MB)** http://www.filefactory.com/file/2t53b3xj0slr/n/PMA02_2.pdf **PMA02_1.pdf (1.65MB)** http://www.filefactory.com/file/33ikm94dl8jb/n/PMA02_1.pdf Manufacturing **MSA07_R8.4.docm (4.93MB)** http://www.filefactory.com/file/4tcjlsetp0rd/n/MSA07_R8.4.docm		

			TAE10_R3.4.docm (1.87MB) http://www.filefactory.com/file/566jfcevasu5/n/TAE10_R3.4.docm Gas **UEG11_R2.0.docm (5.44MB)** http://www.filefactory.com/file/6shho87gm1nh/n/UEG11_R2.0.docm Mining **MNM05_3.pdf (2.28MB)** http://www.filefactory.com/file/78fk485ew98v/n/MNM05_3.pdf **MNM05_2.pdf (2.29MB)** http://www.filefactory.com/file/72yjazer7njj/n/MNM05_2.pdf **MNM05_1.pdf (1.77MB)** http://www.filefactory.com/file/6ahwwdwosk8j/n/MNM05_1.pdf		

5	**Approach to various learning modes in VET** By- Dr Kyaw Naing & the speakers from various technological universities **Topics & References** **Practical focus** **Group Base learning.pdf (3.25MB)** http://www.filefactory.com/file/266najoy91o3/n/16.taadel401a_Plan_&_Organize_Group_Base_learning.pdf **Facilitate Group based learning.pdf (2.81MB)** http://www.filefactory.com/file/1tvk73q17j43/n/18.taadel402a_Facilitate_Group_based_learning.pdf **Work based learning.pdf (4.15MB)** http://www.filefactory.com/file/24apg5s5n0fx/n/22.taadel404a_Facilitate_work_based_learning.pdf **individual learning.pdf (1.94MB)** http://www.filefactory.com/file/4nmwy8ldewh1/n/20.taadel403a_Facilitate_individual_learning.pdf **Distance based learning (2.56MB)** http://www.filefactory.com/file/3w2b2mdy	Morning tea and networking	**Preparing teaching portfolios** By Dr Kyaw Naing Teacher Training/ED101106.pdf References Worksheets Teacher Training/ ED101106.pdf **Provide Training through instruction and demonstration of work skills** **TAADEL301A.doc (0.03MB)** http://www.filefactory.com/file/2pyhdlqhlsh/n/TAADEL301A.doc **Facilitate work-based learning** **TAADEL404A.doc (0.03MB)** http://www.filefactory.com/file/60ojucglvyu3/n/TAADEL404A.doc **Group based delivery** **TAADEL401A.doc (0.03MB)** http://www.filefactory.com/file/3i5scp12gkdn/n/TAADEL401A.doc **Use Training Packages to meet client needs TAADES401A.doc (0.03MB)**	Lunch	Best Teaching Practice Support Lesson Slides ED103/ ED105 Inclusive Teaching TU GTC Teachers Develop teaching and learning strategies in the curriculum for the courses that are taught by the participants Group work, group discussions **Example** Page 44 to 49 of www.highlightcomputer.com/OverallProgramGeneral.pdf **Facilitator** Dr Kyaw Naing & Other trainers Contents Research http://www.filefactory.com/file/eovzqp6gd1/assessment%20strategies.pdf http://www.filefactory.com/file/7jfakka1vpfx/G015BWork%20performance%20report.doc

	cbx1/n/24.taadel405a_Coordinate_7_facilitate_distance_based_learnin.pdf Educational Theory Resources ED 103 Teaching Practice http://www.filefactory.com/file/1o732n0j46mf/ED%20103%20Teaching%20Practice.zip ED 105 Principle of Learning http://www.filefactory.com/file/7660l6kjr8sx/ED%20105%20Principle%20of%20Learning.zip ED 107 Teaching & Learning http://www.filefactory.com/file/6u5o455lyqj7/ED%20107%20Teaching%20%26amp%3B%20Learning.zip **Myanmar Engineering Council References** • the choice of the teaching-learning (delivery) methods.		**TAADES402A.doc (0.03MB)** http://www.filefactory.com/file/4nhro84kl2nx/n/TAADES402A.doc **Work effectively in vocational education and training** **TAAENV401A.doc (0.03MB)** http://www.filefactory.com/file/45zeif6cy5zx/n/TAAENV401A.doc **Foster and promote an inclusive learning culture** **TAAENV402A.doc (0.03MB)** http://www.filefactory.com/file/3zoufgaty89n/n/TAAENV402A.doc **Ensure a safe and healthy learning environment** **TAAENV403A.doc (0.03MB)** http://www.filefactory.com/file/6ireaw7s5jg9/n/TAAENV403A.doc **Individual learning** **TAADEL403A.doc (0.03MB)** http://www.filefactory.com/file/7g3h9iwpodfr/n/TAADEL403A.doc **Language Literacy & Numeracy**		DELIVERY & ASSESSMENT PLAN SAMPLES http://www.filefactory.com/file/1c03t5k3fp8p/SAMPLE%20ASSESSMENT%20ITEMS.htm

	• A balanced curriculum • The curriculum shall integrate theory with practice through adequate exposure to laboratory work and professional engineering(MEng C) • Time allocation • Credit points ED 401 Adult Learning Technology http://www.filefactory.com/file/68y4bd94ianb/ED%20401%20Adult%20Learning%20Technology.zip		**1397606218-taelln411_sample.pdf (0.34MB)** http://www.filefactory.com/file/5fh2bd8z3k0r/n/1397606218-taelln411_sample.pdf **Report.pdf (0.41MB)** http://www.filefactory.com/file/655u3qypqyj3/n/Report.pdf **Section 4 Model for core skills analysis.pdf (0.69MB)** http://www.filefactory.com/file/6p480mpcelft/n/Section_4_Model_for_core_skills_analysis.pdf **ACSF_Document.pdf (1.03MB)** http://www.filefactory.com/file/54s5xbe3esdn/n/ACSF_Document.pdf **LLN Preparation of students.docx (0.02MB)** http://www.filefactory.com/file/77ps5dxgbhpj/n/LLN_Preparation_of_students.docx **Australian Core Skills Framework for LLN Level determination.docx (0.02MB)** http://www.filefactory.com/file/4q		

			t7gx24cd9l/n/Australian_Core_Skills_Framework_for_LLN_Level_determination.docx **LLN Preparation of students.docx (0.02MB)** http://www.filefactory.com/file/1rvd487gxw0j/n/LLN_Preparation_of_students.docx		
6	**Developing the assessment strategies in VET** By Dr Kyaw Naing TU GTC Teachers **Assessment Validation Guide of Myanmar Engineering Council** • assessment & evaluation methods for the attainment achievement of the Learning Outcome **Practical Application Resources** **Participate in assessment validation** **TAAASS404A.doc (0.03MB)** http://www.filefactory.com/file/5zv1ke	Morning tea and networking	Develop teaching and learning strategies in the curriculum for the courses that are taught by the participants By the educators from various technological universities / schools& skills training organizations	Lunch	**Prepare the sample assessment activities for the courses that the participants are teaching** Group work, group discussions **Facilitator** Dr Kyaw Naing & Other trainers Page 49 to 76 of www.highlightcomputer.com/OverallProgramGeneral.pdf Sample Assessment validation matrices http://www.filefactory.com/file/617mgi9ir63x/UEENEEE046B.zip http://www.filefactory.com/file/333wtizbok0n/UEENEEG002.zip

	TAAASS403A.doc (0.03MB) http://www.filefactory.com/file/5rxw2iggk7rx/n/TAAASS403A.doc **Plan and organise assessment** **TAAASS401A.doc (0.03MB)** http://www.filefactory.com/file/1tpnwpwxgxgv/n/TAAASS401A.doc **Assess competence** **TAAASS402A.doc (0.03MB)** http://www.filefactory.com/file/48yye4zmmxt7/n/TAAASS402A.doc **Reference Textbooks (Theory aspect)** ED 205 Teaching & Measuring http://www.filefactory.com/file/4eu01ck2awl/ED%20205%20Teaching%20%26amp%3B%20Measuring.zip ED 206 Designing Instructions & Assessment http://www.filefactory.com/file/4dnh3r8wsd9t/ED%20206%20Designing%20Instructions%20%26amp%3B%20Assessment.zip				Sample delivery & assessment schedules http://www.filefactory.com/file/5k19ps1z6xj9/20222%20Sequence%20%28V1%29%20%28001%200861%29%2020120726.pdf Self assessment journal/ Reflection http://www.filefactory.com/file/1c0jfwumb27p/Self%20Assessment%20Journal%20Reflection.doc **Sample-Student Assessment Guide.doc (0.09MB)** http://www.filefactory.com/file/10m1ja7dnha3/n/UEENEEE101A_Student_Assessment_Guide.doc **Sample- RPL Tool Validation Record.pdf (0.08MB)** http://www.filefactory.com/file/34muh9bkgpk9/n/UEENEEE101A_RPL_Tool_Validation_Record.pdf **Sample- Assessment Cover sheet.doc (0.08MB)** http://www.filefactory.com/file/n6s0sk8izqj/n/UEENEEE101A_Assessment_Cover_sheet.doc **Sample-Assessment Feedback Sheet.docx (0.05MB)** http://www.filefactory.com/file/3soxroqt927j/n/UEENEEE101A_Assessment_Feedback_Sheet.docx Evaluation check list http://www.filefactory.com/file/6jslcpuborkx/Evaluation%20Check%20List%20General%2BOnline%20Survey.docx http://www.filefactory.com/file/4crkqpqke02z/Evaluation.docx

	ED 405 Training Principle http://www.filefactory.com/file/5qupttpxznin/ED%20405%20Training%20Principle.zip				Recognition of Prior Learning Tools-Sample http://www.filefactory.com/file/2gtq6nqjag03/20278%20RPL_form_WVL_2014_V1_multi.xlsm http://www.filefactory.com/file/4phu09qmmy89/20281%20RPL_form_WVL_2014_V1_multi.xlsm http://www.filefactory.com/file/6qtg6w4uh3fh/20282%20RPL_form_WVL_2014_V1_multi.xlsm
7	**Educational Resources Development** 9.2.7 Facilities By- Myanmar Engineering Council Engineering Accreditation Committee **Overviews of Professional Development Programs provided by Myanmar Engineering Society** By- Myanmar Engineering Society	Morning tea and networking	**Integration of Learning Technology in Teaching & Learning Part 1** Support Lesson Slides/ ED102 Computer Application in Teaching-techclass By Dr Kyaw Naing **Resources** http://www.filefactory.com/file/3bsfz0ehba7z/n/5_Learning_Technology_1_zip http://www.filefactory.com/file/cvavvr9gonr/n/6_Learning_Technology_2_zip Due to the big file size, the	Lunch	**On line & offline e-Learning systems Part 1** By Dr Kyaw Naing **Samples** Learning Platform example http://www.highlightcomputer.com/onlineteaching1.htm Using multimedia & videos in teaching & Learning http://www.highlightcomputer.com/videos1.htm Using Youtube in teaching & learning http://www.highlightcomputer.com/videos2.htm Practice Use of DVD recorder, Digital note takers to record the lessons and prepare the multimedia power point lectures, PDF-JPG format conversion softwares

8	**Technology in Classroom** By Dr Kyaw Naing Resources ED312 Technology in Classrooms http://www.filefactory.com/file/7jcivu232opx/n/7_Technology_in_classroom_zip D 308 Computer Supported Learning & Distance Education http://www.filefactory.com/file/4mdzrx52kl45/ED%20308%20Computer%20Supported%20Learning%20%26amp%3B%20Distance%20Education.zip		**Integration of Learning Technology in Teaching & Learning Part 2** By Dr Kyaw Naing Sharing the e-Learning work experience utilized in TAFE-NSW Australian Classroom • Resources development • Computer assisted test • Use of online test/online survey • Online simulated practicals www.easytestmaker.com http://www.emailmeform.com/		On line & offline e-Learning systems Part 2 Development of e-Learning Resources Practice workshop Development of learning support website & contents placement **Sample** www.electricaldiploma2013.zoomshare.com Use of online documents sharing sites www.filefactory.com www.uploading.com www.zoomshare.com www.webs.com
9	8.5.2 Programme Quality Management and Planning 8.5.4 Quality Assurance 9.2.8 Quality Management System Preparation of self accreditation report Requirements of Myanmar Engineering Council By -Myanmar Engineering Council	Morning tea and networking	**Preparing the documents to comply with Educational Quality Control Authorities** TU GTC Teachers **Myanmar Engineering Council Requirement**	Lunch	**Quality Assurance Compliance Documentation preparation workshop** The participants to prepare the quality assurance documents for the courses that they are teaching to comply with the requirements of Educational Quality Control Authorities TU GTC Teachers Myanmar Engineering Council

	References Curriculum design for accreditation compliance http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf Overall accreditation and compliance practice http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf Preparation for self accreditation report http://www.filefactory.com/file/43x0yutpx31v/2%20SAR.pptx Engineering Accreditation Plan http://www.filefactory.com/file/2ynzo3fydckb/2015%20YTU%20First%20Workshop.pptx		Quality Assurance http://www.highlightcomputer.com/QualityAssurance.htm		**Reference** Page 92 to 96 of www.highlightcomputer.com/OverallProgramGeneral.pdf
10	**Learning Environment** By- Dr Kyaw Naing **Reference** ED 407 Learning Environment http://www.filefactory.com/file/31o	Morning tea and networking	**Change Management** By- Daw Hla Myat Mon **References** University of Technology Master of Business Change Management References	Lunch	**Educational Leadership work experience knowledge** By- Daw Hla Myat Mon **Textbook** ED 308 Change Management http://www.filefactory.com/file/4cxrjx86buot/n/9_Leade

	7fw99ux7l/ED%20407%20Learning%20Environment.zip		& experience in University of Technology Sydney		rship_Change_Management_zip ED309 Educational Communication http://www.filefactory.com/file/6tbjy1omi7kz/n/1_Educational_Communication_zip ED 402 Educational Leadership http://www.filefactory.com/file/68h2rewfq7jx/ED%20402%20Educational%20Leadership.zip
11	Practice Teaching	Morning tea and networking	Practice Teaching	Lunch	**Performance Evaluation**
12	National Strategic Plan 2016-2021 Myanmar/ Grad Cert HEd/ ED435 Goverence of University.pptx	Morning tea and networking	General Discussion		Conclusion of the training.

Diploma in Intermediate Science (Australian Year 12 Equivalent)

Course 107777

Entry Qualifications

Year 10 Pass, Year 10 Not Passed, THS Pass, ITC

Study System

- Online self study
- Self arrangement with home tution teacher
- IQY Technical College can connect the students to home tutors
- Examination in every December. Examination fees Ks10,000

Outcome

Diploma in Intermediate Science will be issued by Australian Registered IQY Technical College if the examination is passed. (Pass Mark 50)

Then IQY Professional Diploma in Technological Science/ Bachelor of Science (Technology) of STC Technological University

Or

Can use Diploma in Intermediate Science (issued by Australian Registered IQY Technical College) to attend the other foreign universities

Note

Myanmar Year 10 Pass can not attend the foreign universities. High School to be re-attended.. This is why we design the Diploma in Intermediate Science (Year 12 Equivalent)

အလယ်အလတ်သိပ္ပံဒီပလိုမာ (သြစတြေးလျ ၁၂ တန်းအဆင့်)

ဝင်ခွင့်အရည်အချင်းများ

Year 10 Pass, Year 10 မ Pass၊ THS Pass, ITC

လေ့လာမှုစနစ်

•အွန်လိုင်းကိုယ်ပိုင်လေ့လာမှု

•အိမ်မှာကျူရှင်ဆရာဆရာမနှင့်သင်ခြင်း

• IQY နည်းပညာကောလိပ်သည်ကျောင်းသားများကိုအိမ်ကျူရှင်ဆရာဆရာမနှင့်များနှင့်ဆက်သွယ်

ပေးမည် ။

•ဒီဇင်ဘာလတိုင်းတွင်စာမေးပွဲ။ စာမေးပွဲကြေး ကျပ်၁၀,၀၀၀

ရလဒ်

အလယ်အလတ်သိပ္ပံဒီပလိုမာကိုစာမေးပွဲအောင်ပြီးပါကဩစတြေးလျ မှတ်ပုံတင် IQY နည်းပညာကောလိပ်မှ အလယ်အလတ်သိပ္ပံဒီပလိုမာ (ဩစတြေးလျ ၁၂ တန်းအဆင့်)

ထုတ်ပေးလိမ့်မည်။(အောင်မှတ်၅၀) ထို့နောက် IQY နည်းပညာသိပ္ပံဘွဲ့ဒီဂရီ / STC နည်းပညာတက္ကသိုလ်မှသိပ္ပံဘွဲ့ (နည်းပညာ) တက်နိုင်သည်။

သို့မဟုတ် အခြားနိုင်ငံခြားတက္ကသိုလ်များသို့တက်ရောက်ရန် ၁၂ တန်းအဆင့် ဒီပလိုမာကို (ဩစတြေးလျမှတ်ပုံတင်ထားသော IQY နည်းပညာကောလိပ်မှထုတ်ပေးမည်။

မှတ်စု

မြန်မာ၁၀တန်းအောင်လက်မှတ်နှင့်နိုင်ငံခြားတက္ကသိုလ်များသို့မတက်နိုင်ပါ။ အထက်တန်းကျောင်းပြန်လည်တက်ရောက်နိုင်ရမည်။

ထို့ကြောင့်ကျွန်ုပ်တို့သည်ဒီပလိုမာကိုအလယ်အလတ်သိပ္ပံပညာ ၁၂ တန်းအဆင့် ဒီပလိုမာကို စီစဉ်သည်။

Subjects

- Y1112A-MATHEMATICS
- Y1112B-PHYSICS
- Y1112C-CHEMISTRY
- Y1112D-SCIENCE
- Y1112E-DESIGN & TECHNOLOGY
- Y1112F-SOFTWARE DESIGN
- Y1112G-ENGLISH
-

Learning Support site, Notes, Videos Free access

Form253 Diploma in Intermediate Science (Dip ISc)

www.iqytechnicalcollege.com/Form253dipisc.htm

Exam Centres

Yangon ,Mandalay ,Pyay ,Shan State

St Clements University Certificate/ Diploma / Advanced Diploma in Electrical Engineering

Course + Credit Outlines

YEAR 1 **Certificate in Electrical Engineering**
15 credits

	SEMESTER (1)	**Credits**
EE101	DC Circuit Problems	1
EE102	Basic Electrical Fitting & Wiring	1
EE103	Basic Electrical Drafting	1
EE104	Electrical Equipments Safety Protection	2
EE105	Electrical Installation Design	1
EE106	Advanced Electrical Wiring	1
EE107	Electrical Equipments	1
EE108	Electrical Fault Finding	1
EE109	Electrical Control Circuits	1
EE110	Computer Applications	1
EE111	Electromagnetism & Basic Electrical Machines	2
EE112	Alternating Current Principle	2
		15 Credits
	Diploma in Electrical Engineering **30 credits**	**Credits**
	SEMESTER (2)	
EE113	Electrical Fundamental	2
EE114	Electrical Power Principle	1
EE115	Basic Analogue & Digital Electronics	2
EE116	Process Control System	3
EE117	Solar Electrical System	1
EE118	Electrical Energy Supply System	3
EE119	Electrical Risk Assessment	1
EE120	Electrical Contracting & Specification	1
EE121	Electronics Power Control Device	1
		30 Credits

	Advanced Diploma in Electrical Engineering **60 credits**	**Credits**
	SEMESTER (1)	
EE201	Engineering Mathematics	1
EE202	Electrical Circuits	1
EE203	Three Phase Power Circuits	1
EE204	Engineering Physics	1
EE205	Electrical Power System	2
EE206	AC Machines	2
EE207	DC Machine	1
EE208	Operational Amplifiers	2
EE209	Analogue Electronics	1

	SEMESTER (2)	
EE301	Advanced Electrical Drafting	1
EE302	Advanced Engineering Mathematics	2
EE303	Transmission Line	2
EE304	Power System Protection	2
EE305	Power Transformer	2
EE306	Electro-mechanical Control	2
EE307	Energy Efficient Building Design	2
EE308	Sustainability	1
EE309	Project Management	2
EE310	Engineering Officer Competency Report	2
		30 Credits

(Stage 1)DIPLOMA IN CIVIL ENGINEERING (Each 2.5 Credits) (30 Pt)

Certificate in Construction Studies

CE 106A Detailed Construction & Building Construction Materials

CE 104 A Building Drawing

CE 101 Mathematics (EE201)

CE 102 Physics (EE204)

CE 108 Electrical Principle

DIPLOMA IN CIVIL ENGINEERING

CE 104 Fluid Dynamics

CE 105 Hydraulic

CE 106 Hydrology

CE 107 Sanitation-and-Water-supply

CE 109 Energy Efficient Building Design (EE309)

CE 110 Building Construction

EE102 Basic Electrical Fitting & Wiring

Stage (2)Advanced Diploma in Civil Engineering Program(30 pt) (Each 5 pt)

YEAR (2)

CE103-Surveying

CE111A-Road+Bridges

CE113 Structure 1

CE114 Structure 2

CE115 Estimating & Specification

CE 112 Engineering Mechanics+ ME 301 Applied Mathematics

YEAR (2) ADDITIONAL COURSES

EE104 Electrical Equipments Safety Protection

EE105 Electrical Installation Design

ME 102 Engineering Thermodynamics

ME 334 Airconditioning and Refrigeration

EE106 Advanced Electrical Wiring

CE 112 Engineering Mechanics+ ME 301 Applied Mathematics

EE308 Sustainability

http://www.highlightcomputer.com/Diploma_in_Civil_Engineering.pdf

Diploma in Information Technology Course outline

ICT101	Information Technology Fundamentals	3	GC	ICAICT501A	Research and review hardware technology options for organisations
ICT 102	Computer Applications and Operations	2	GC GC	ICASAS509A ICASAS503A	Provide client IT support services Perform systems tests
ICT 103	Applied Programming	5	BAE601	GB	ICAPRG523A — Apply advanced programming skills in another language
ICT 104	Program Project	5	BAE601	GB GC GD GG	ICAPRG502A — Manage a project using software management tools ICAICT510A — Determine appropriate IT strategies and solutions ICAWEB507A — Customise a complex IT content management system CAPMG501A — Manage IT projects
ICT 105	Systems Analysis and Programs	5	BAE603	Core GC	ICAICT509A — Gather data to identify business requirements ICAICT502A — Develop detailed component specifications from project specifications
Core		ICAICT511A		Match IT needs with the strategic direction of the enterprise	
ICT 106	Software Engineering	5	BAE603	GB	ICAPRG502A — Manage a project using software management tools
GB		ICAPRG510A		Maintain custom software	
GB		ICAPRG512A		Prepare for the build phase of an IT system	
ICT 107	Business Information Systems	5	GA	ICANWK501A	Plan, implement and test enterprise communication solutions

WORK PERFORMANCE

Task 1	Provide the OHS Procedure in workplace	Core	BSBOHS509A	Ensure a safe workplace
Task 2	Provide the procedure to maintain the IT equipments in	Core	BSBSUS501A	Develop workplace policy and procedures for sustainability

	workplace			
Task 3	Take the record of sound & picture from an event	GE	ICAGAM504A	Manage interactive media production
Task 4	Take the digital video by using digital camera & edit/ convert to other formats by provided software	GF	CADMT501A	Incorporate and edit digital video

Diploma in Information Technology Course outline

ICT101	Information Technology Fundamentals	3	GC	ICAICT501A	Research and review hardware technology options for organisations
ICT 102	Computer Applications and Operations	2	GC GC	ICASAS509A ICASAS503A	Provide client IT support services Perform systems tests
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ICT 105	Systems Analysis and Programs	5	BAE603	Core GC	ICAICT509A — Gather data to identify business requirements ICAICT502A — Develop detailed component specifications from project specifications
Core		ICAICT511A		Match IT needs with the strategic direction of the enterprise	
ICT 106	Software Engineering	5	BAE603	GB	ICAPRG502A — Manage a project using software management tools
GB		ICAPRG510A		Maintain custom software	
GB		ICAPRG512A		Prepare for the build phase of an IT system	
ICT 107	Business Information Systems	5	GA	ICANWK501A	Plan, implement and test enterprise communication solutions

WORK PERFORMANCE

Task 1	Provide the OHS Procedure in workplace	Core	BSBOHS509A	Ensure a safe workplace
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	workplace			
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Task 4	Take the digital video by using digital camera & edit/ convert to other formats by provided software	GF	CADMT501A	Incorporate and edit digital video

Diploma in Mechanical Engineering (Each 1.5 Credits) (30 Pt)

Maths 101 Engineering Mathematics

ME 101 Applied Mathematics

ME 102 Engineering Thermodynamics

ME 103 Engineering Mechanics

ME 104 Machine Principle

ME 105 Electrical Principle

ME 106 Electrical Circuits

ME 107 Heat Transfer

ME 108 Principle of Engines

ME 201Introduction to Fluid Mechanics

ME 202 Introduction to Aero Dynamics

ME 203 Control Engineering

ME 204 Engineering Fluid Mechanics

ME 205 Manufacturing Processes-and-Materials

ME 206 Introduction to Turbo Machinery

ME 207 Chemical Thermodynamics

ME 208 Hydrocarbons

ME 209 Introduction-to-polymer-science-and-technology

ME 234 Wind Turbines

Mgt 501 Basic Management

Study sequence

From top to down

Advanced Diploma in Mechanical Engineering (Each 1.5 Credits) (30 Pt)

Mathematics

Maths 403 Engineering-Mathematics

Maths 301 Introductory Finite Difference Methods-for-pdes

Maths 302 Elementary-Linear-Algebra

Maths 303 Introductory Finite Volume Methods-for-pdes

Maths 501 Linear Algebra-c-1

Study sequence

From top to down

Mechanical Engineering

ME 301 Fluid Dynamics

ME 302 Automation-and-Robotics

ME 303 Computer Aided Design and Manufacturing

ME 304 Introduction to Nonlinearity-in-control-systems

ME 305 Corrosion Prevention

ME 306 Theory-of-waves-in-materials

ME 334 Airconditioning and Refrigeration

ME 434 Mechtronics-Robotics

ME 534 Numerical Control Part 1

ME 634 Pneumatics

EE 617 Building Electrical and Mechanical System Part 1

EE 624 Process Control

Mgt 503 Production & Operation Management

Mgt 505 Quality Management and Manufacturing Engineering

Study sequence

From top to down

Certificate in Teaching Support/ Diploma in Teaching Practice Program for Voluntary School Staff and Teachers (St Clements Technological University)

စေတနာ့ဝန်ထမ်းကျောင်းဆရာ၊ထောက်ကူပြုသူများအတွက်လက်မှတ်၊ဒီပလိုမာဘွဲ့ အစီအစဉ် (စိန် ့ကလီးမင့်နည်းပညာတက္ကသိုလ်)

Teachers of the voluntary schools and school supports can get the following qualifications awarded by St Clements Technological University Scholarship Program by presenting their experiences.

စေတနာ့ဝန်ထမ်းကျောင်းဆရာ၊ထောက်ကူပြုသူများသည်အတွေ့အကြုံများကိုတင်ပြပြီး စိန် ့ကလီးမင့်နည်းပညာတက္ကသိုလ်၏ပညာသင်ဆုအစီအစဉ်ဖြင့်လက်မှတ်၊ဒီပလိုမာဘွဲ့များရယူနိုင်သည်။

YEAR (1)

Certificate in Teaching Support

- Ed101 Teaching Support
- Ed102 Application of Information Technology in School Education

Diploma in Teaching Practice

The students can complete the following units to complete Diploma in Teaching Practice

အောက်ပါတို့ကိုဆက်လက်ပြီစီးပါက Diploma in Teaching Practice ရရှိမည်။

- Ed103 Classroom Management
- Ed104 Teaching Portfolio
- Ed105 Inclusive Teaching
- Ed106 Subject Area Knowledge
- Ed107 Theory of Education, Educational Technology & Teaching Practice
  - Ed107A-Theory of Education
  - Ed107B-Education Technology
  - Ed107C-Teaching Practice
  - Ed107D-Lesson Planning

- Ed108 Curriculum Study , Teaching & Learning
  - Ed108A-Principle of Learning
  - Ed108B-Interpreting Curriculums
  - Ed108C-Teaching & Learning

Process (နည်းလမ်းစဉ်)

Fill the scholarship application form & submit it to the university through kyawnaing225@yahoo.com
ပညာသင်ဆုအစီအစဉ်လျှောက်လွှာကိုဖြည့်ပြီး kyawnaing225@yahoo.com မှတဆင့်စိန် ့ကလီးမင့်နည်းပညာတက္ကသိုလ်သို့ ပို ့ရန်။

Submit the evidences/ do the study to complete the units
အတွေ့အကြုံများကိုတင်ပြရန်၊ ဘာသာရပ်များလေ့လာရန်။

Ed101-Teaching Support

The students need to provide the following information to complete Ed 101 Teaching Support in English or in Myanmar.

Ed101 ပြီးစီးရန်အောက်ပါတို့ကိုတင်ပြရမည်။ (အင်္ဂလိပ် သို့မဟုတ် မြန်မာ ဘာသာဖြင့်တင်ပြနိုင်သည်)

(၁)ကျောင်းသားအမည် -
Name of student

(၂)လုပ်အားပေးခဲ့သောကျောင်း
Name of the school where you have volunteered.

(၃)ထမ်းဆောင်ခဲ့သောတာဝန်များကိုအောက်ပါအတိုင်းဖြည့်သွင်းရန် -
Records of the duties performed are to be written in the following aspects.

၁။ ကျောင်းခေါ်ချိန်မည်သို့မှတ်သနည်း။
How do you record the students' attendances?

၂။ ကျောင်းစည်းကမ်းထိန်းသိမ်းရေးကိုမည်သို့ဆောင်ရွက်သနည်း။
How do you maintain the school disciplines?

၃။ဆရာများစာသင်ကြားရေးအဆင်ပြေစေရန်သင်မည်သို့ဆောင်ရွက်သနည်း။
How do you support the teachers in their teaching?

၄။စာသင်ကြားရေးထောက်ကူပြုပစ္စည်းများကိုမည်သို့စီစဉ်ဆောင်ရွက်သနည်း။
How do you arrange the teaching support materials?

၅။ကျောင်းမှတ်တမ်းများကိုမည်သို့ ထိန်းသိမ်းသနည်း။
How do you maintain the school records?

၆။စာသင်ကြားရေးထောက်ကူပြုပစ္စည်းများတိုးပွားရေးကိုမည်သို့ဆောင်ရွက်သနည်း။
What do you perform in development of teaching resources?

၇။ကျောင်းသားများကိစ္စနှင့်ပတ်သက်၍မိဘများ၊ရပ်ကွက်လူထုများနှင့်မည်သို့ဆက်သွယ်ဆောင်ရွက်သနည်း။
How do you communicate with the parents and community regarding the students matters?

Ed102 Application of Information Technology in School Education

Ed102 ပြီးစီးရန်အောက်ပါတို့ကိုတင်ပြရမည်။ (အင်္ဂလိပ် သို့မဟုတ် မြန်မာ ဘာသာဖြင့်တင်ပြနိုင်သည်)
The followings must be completed to complete Ed 102 in English or in Myanmar.

အခြေခံကွန်ပြူတာအသုံးပြုခြင်း
Basic Computer Applications

- Word
- Excel
- Internet
- E-mail

The students who have completed Ed101 and Ed102 will be awarded Certificate in Teaching Support by St Clements Technological University.

Ed101, Ed102 ပြီးစီးပါက St Clements Technological University (စိန် ့ကလီးမင့်နည်းပညာတက္ကသိုလ်)မှ Certificate in Teaching Support လက်မှတ်အပ်နှင်းမည်။

Diploma in Teaching Practice

The students can complete the following units to complete Diploma in Teaching Practice

အောက်ပါတို့ကိုဆက်လက်ပြီစီးပါက Diploma in Teaching Practice ရရှိမည်။

- Ed103 Classroom Management
- Ed104 Teaching Portfolio
- Ed105 Inclusive Teaching
- Ed106 Subject Area Knowledge
- Ed107 Theory of Education, Educational Technology & Teaching Practice
  - Ed107A-Theory of Education
  - Ed107B-Education Technology
  - Ed107C-Teaching Practice
  - Ed107D-Lesson Planning

- Ed108 Curriculum Study , Teaching & Learning
  - Ed108A-Principle of Learning
  - Ed108B-Interpreting Curriculums
  - Ed108C-Teaching & Learning
  - Ed108D-Teaching Elementary

အောက်ပါတို့ကိုဆက်လက်ပြီးအင်္ဂလိပ်ဘာသာဖြင့်သင်ယူနိုင်သည်။

Bachelor of Teaching (Year 2) & Bachelor of Education (Year 3+4) can be studied in English.

Diploma in Teaching Practice

Ed103 Classroom Management

The students need to provide the following information to complete Ed103 Classroom Management in English or in Myanmar.

Ed103 ဘြီးစီးရန်အောက်ပါတို့ကိုတင်ပြရမည်။ (အင်္ဂလိပ် သို့မဟုတ် မြန်မာ ဘာသာဖြင့်တင်ပြနိုင်သည်)

- စာသင်ကြားရေးအချိန်ဇယားရေးဆွဲခြင်း။
  Timetabling

- ကျောင်းသားအုပ်စုခွဲခြင်း။
  Grouping the students

- စာသင်ကြားရေးထောက်ကူပြုပစ္စည်းများပြုလုပ်ခြင်း။
  Making the teaching & learning supportresources

- စာမေးပွဲစစ်ဆေးခြင်း။
  Arranging the examinations
- ကျောင်းဖွဲ့စည်းမှုတွင်ပါဝင်ခြင်း။
  Participation in organizing of the school

- ကျောင်းကော်မတီအစည်းအဝေးများတက်ရောက်ခြင်း။
  Attending & participating in school committee meetings.

Ed104 Teaching Portfolio

The students need to provide the following information to complete Ed104 Teaching Portfolio in English or in Myanmar.

Ed104 ဘြီးစီးရန်အောက်ပါတို့ကိုတင်ပြရမည်။ (အင်္ဂလိပ် သို့မဟုတ် မြန်မာ ဘာသာဖြင့်တင်ပြနိုင်သည်)

- သင်ခန်းစာများကိုမသင်ကြားခင်ကြိုတင်စီစဉ်သောအထောက်အထား
  Evidences of lesson planning
- သင်ခန်းစာခေါင်းစဉ်
  Title of lesson
- သင်ခန်းစာနိဒါန်း
  Lesson introduction
- သင်ခန်းစာအစအဆုံးပို့ချချက်
  Lesson delivery from the beginning to the end.
- သင်ခန်းစာနိဂုံး
  Conclusion of lesson

- လေ့ကျင့်ခန်းများ
  Exercises
- စစ်ဆေးမည့်အစီအစဉ်
  Plan to assess the exercises
- ကျောင်းသားများတင်ပြသော လေ့ကျင့်ခန်းများပြီးစီးမှုနမူနာ
  Students' work samples

Ed105 Inclusive Teaching

The students need to provide the following information to complete Ed105 Inclusive Teaching in English or in Myanmar.

Ed105 ပြီးစီးရန်အောက်ပါတို့ကိုတင်ပြရမည်။ (အင်္ဂလိပ် သို့မဟုတ် မြန်မာ ဘာသာဖြင့်တင်ပြနိုင်သည်)

- ကျောင်းသားတိုင်းသင်ကြားမှုခံယူရရှိရန်စီစဉ်ပုံ။
  How do you plan to enable every student to learn the lessons?

- တတ်သိမှုနှေးသော ကျောင်းသားတိုင်းသင်ကြားမှုခံယူရရှိရန်စီစဉ်ပုံ။
  How do you plan to enable slow learning student to learn the lessons?

- ချို့တဲ့နွမ်းပါး သော ကျောင်းသားတိုင်းသင်ကြားမှုခံယူရရှိရန်စီစဉ်ပုံ။
  How do you plan to enable every student from poor economic background to learn the lessons?

- မသန်စွမ်းသော ကျောင်းသားတိုင်းသင်ကြားမှုခံယူရရှိရန်စီစဉ်ပုံ။
  How do you plan to enable students with disability to learn the lessons?

- ကျား/မ အသက်အရွယ်မခွဲခြားဘဲ ကျောင်းသားတိုင်းသင်ကြားမှုခံယူရရှိရန်စီစဉ်ပုံ။
  How do you plan to enable students regardless of gender, marital status and ages to learn the lessons?

Ed106 Subject Area Knowledge

- ပြီးစီးခဲ့သောဘွဲ့လက်မှတ်များတင်ပြရန်။
  Submit the degree/ diploma/ certificate that you have obtained previously

- E-Learning သင်ခန်းစာများ တင်ပြရန်။
  Submit the E-Learning lessons.

Ed107 Theory of Education, Educational Technology & Teaching Practice
Ed108 Curriculum Studies , Teaching & Learning

အောက်ပါအဂိၢ်လိပ် + မြန်မာ ဘာသာဖြင့်သင်ကြားသော ပါဝါပွိုင့်သင်ခန်းစာများကိုအီလက်ထရောနစ်စာသင်စံနစ်ဖြင့်လေ့လာသင်ကြားပြီးလေ့ကျင့်ခန်းများကိုတင်ပြရန်၊သင်ခန်းစာများကိုသီးသန့်ပေးမည်။

The following English +Myanmar Powerpoint lessons are to be studied by E-Learning and exercises are to be submitted.

The lessons will be given separately.

- Ed107 Teaching Theory & Practice
  - Ed107A-Theory of Education
  - Ed107B-Education Technology
  - Ed107C-Teaching Practice
  - Ed107D-Lesson Planning

- Ed108 Curriculum Studies , Teaching & Learning
  - Ed108A-Principle of Learning
  - Ed108B-Interpreting Curriculums
  - Ed108C-Teaching & Learning

ပြီစီးပါက St Clements Technological University (စိန်္ကလီးမင့်နည်းပညာတက္ကသိုလ်)မှ Diploma in Teaching Practice ရရှိမည်။
When all units are completed, Diploma in Teaching Practice will be awarded by St Clements Technological University.

YEAR 2+3

Bachelor of Teaching course outline (Only study in English medium of instruction will be available)

ED 201 Class Room Management & Teaching
ED 202 Curriculum & Design
ED 203 K-12 Education
ED 204 School & Vocational Education
ED 205 Teaching & Measuring
ED 206 Designing Instructions & Assessment
ED 207 Teacher Education
ED 208 Inclusive Education
ED 301 Educational Policy
+
Any two units from the ED 302 to ED 307

ED 302 English Teaching
ED 303 Humanities Teaching
ED 304 Mathematics Teaching
ED 305 Science Teaching
ED 306 Technology Teaching
ED 307 Business Teaching
+
ED 308 Computer Supported Learning & Distance Education

Total 120 points= 5 credit points x 12 units= 60 points+ 60 points for completion of Diploma in Teaching Practice

YEAR 4

Bachelor of Education (School & Vocational Education) course outline
(Only study in English medium of instruction will be available)

ED 401 Adult Learning Technology
ED 402 Educational Leadership
ED 403 School Culture
ED 404 Educational Research
ED 405 Training Principle
ED 406 Educational Policy
ED 407 Learning Environment
ED 408 Middle & High School Teaching

Each unit 5 points x 8 units = 40 points

Total credit points for Bed = 160 points

Diploma in Engineering (Drafting & Design) (30 Credit Points)

Unit No	Unit Name	Credit point
EE201G	Mathematics	2
EE204G	Physics	2
ME 207G	Chemistry	2
EE101	DC Circuit Problems	1
EE102	Basic Electrical Fitting & Wiring	1
EE103	Basic Electrical Drafting	1
EE105	Electrical Installation Design	1
EE110	Computer Applications	1
CE 106A	Detailed Construction & Building Construction Materials	2
CE 104 A	Building Drawing	2
CE 110	Building Construction	2
CE 107	Sanitation-and-Water-supply	2
EE107	Electrical Equipments	1
ME103	Engineering Mechanics	1
ME 108	Principles of Engines	1
EE113	Electrical Fundamental	1
EE106	Advanced Electrical Wiring	2
EE104	Electrical Equipments Safety Protection	1
EE120	Electrical Contracting & Specification—Business Aspect	2
EE109	Electrical Control Circuits	2
	Total Points	30

Career
Advanced Diploma/ Professional Diploma in

- Engineering Design
- Electrical Engineering (OR)
- Civil Engineering (OR)
- Mechanical Engineering (OR)
- Renewable Energy Engineering (OR)
- Other engineering disciplines.

BTech+BE courses are divided into the parts. The student who need to pay three equal instalments. Arrangement of teachers/ fees need to be arranged on Part 1/ 2/ 3 basics. Each part will take 4 months.

If the student pays the fees for part 1, he or she can attend part 1 and upon completion, the Statement/ Transcript will be issued for completion of part 1. Proceed to Part 2 will depend on fees payment. Copying lessons into Students USB/ Hard drive will depend on payment of fees. Only copy for the part that was paid for.

Manager will need to check students progress and fees payment and work with teacher to request me to issue the progress transcript.

No dividing of fees and part in Diploma and Advanced Diploma courses.

Please refer http://www.highlightcomputer.com/iqyadministration.htm

Form 7A -Student' s work and progress transcript submission

Form 7B -Student' s payment record

Form 7C Final Qualification issued check list

And prepare the checking system documents.

BTech Part 1/ BE Yr 3

1 BAE 401 Advanced Engineering Mathematics
2 BAE 402 Calculus
3 BAE 403 Engineering Mechanics
4 BAE 404 Engineering Materials & Thermodynamics

BTech Part 2/ BE Yr 3

10 RE010-Engineering Materials
11 RE012a-Electrical Engineering Part 1
12RE016/ BAE508-Design & Project Management

BTech Part 3 Online/ BE Yr 3

5 RE001- Foundation Studies in Renewable Energy and Sustainability
6.RE003- Solar and Thermal Energy Systems
7.RE004- Energy Storage Systems
8 RE005- Renewable Energy Resource Analysis
9.RE006- Wind Energy Conversion Systems

BE Electrical Part 1/ BE Yr 4

4 RE012b-Electrical Engineering Part 2

6 RE013-Electrical Machines

9 BAE 501 Advanced Power Systems & Power Transmission Networks

10 BAE 506 Power System Stability & Protection

BE Electrical Part 2/ BE Yr 4

1 BAE 601 Computer Programming
2 BAE 602 Computer Network
3 BAE 603 Software Engineering

11 BAE 604 Telecommunication Engineering

BE Electrical Part 3/ BE Yr 4

5 RE002- Grid Connected Photovoltaic Power Systems

12.RE007- Energy System Efficiency
7 RE014-Electronics Control
8 RE015-Electrical Project/ Practice

Final Part

13 BAE 608 Professional Engineer Engineering Competency Demonstration Report & BAE 605 Engineering Management (Completion Certification with no

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BE Civil Part 1/ BE Yr 4

1 RE011a-Civil & Mechanical Engineering Part 1
2 RE011b-Civil & Mechanical Engineering Part 2a

6 BAE423 Fluid Mechanics

8 BAE522 Rock Mechanics

BE Civil Part 2/ BE Yr 4

4BAE421 Building Construction Engineering

10BAE621 Structural Engineering

7 BAE424 Reinforced Concrete

5 BAE422 Estimating

BE Civil Part 3/ BE Yr 4

3 BAE 606 Building Service Electrical & Mechanical Engineering

9 BAE 523A Environmental Engineering

11BAE623 Surveying & Traffic Engineering
12BAE624 Water Supply , Sanitation & Finishing

Final Part

13 BAE 608 Professional Engineer Engineering Competency Demonstration Report & BAE 605 Engineering Management (Completion Certification with no credit points)

BE Mechanical Part 1/ BE Yr 4

1 RE011a-Civil & Mechanical Engineering Part 1
2 RE011b-Civil & Mechanical Engineering Part 2a

6 BAE315 Materials Engineering

10 BAE614 Machine Design

BE Mechanical Part 2/ BE Yr 4

4 BAE311 Plant Engineering
5 BAE314 Mechanical Power Generation

9 BAE613 Mechanical Instrumentation Process

12 BAE 601 Computer Programming

BE Mechanical Part 3/ BE Yr 4

3BAE 606 Building Service Electrical & Mechanical Engineering

7 BAE511 Air-conditioning & Refrigeration
8 BAE512 Building Service Water Supply System

10 BAE614 Machine Design
11.RE007- Energy System Efficiency

Final Part

13 BAE 608 Professional Engineer Engineering Competency Demonstration Report & BAE 605 Engineering Management (Completion Certification with no credit points)

Double Degrees

www.highlightcomputer.com/doubledegrees.htm

Bachelor of Engineering+ Bachelor of Management (Course 67111/67112/67113)

www.highlightcomputer.com/BAppSCBMgt.pdf

Bachelor of Engineering+ Bachelor of Applied Science (Information Technology) (67211/67212/67213)

www.highlightcomputer.com/BEBAppScIT.pdf

Bachelor of Management+ Bachelor of Applied Science (Information Technology)(67214)

www.highlightcomputer.com/BEBMgt.pdf

Diploma in Telecommunication Engineering

Theory to be assessed	Self study advanced practical
BAE607 Radio Wave Propagation & Micro Wave Technique	DTE306 Wireless Communication DTE307 Satellite Communication
EE625 Advanced Radio Wave Propagation	DTE302 Photonics DTE306 Wireless Communication
EE626 Advanced Microwave Technique	DTE305 Optical Communication
BAE604 Telecommunication Engineering	DTE303 Telecommunication Engineering DTE310 Customer Premise Installations
EE525 Data Communication	DTE301 Network Management DTE304 TCP/IP
EE603 Electronic Communication Principle	DTE308 Mobile Communication DTE309 VOIP DTE311 OFDM/CDMA DET312 SDH/SONET

Diploma in Telecommunication Engineering

Theory to be assessed	Self study advanced practical
BAE607 Radio Wave Propagation & Micro Wave Technique	DTE306 Wireless Communication DTE307 Satellite Communication
EE625 Advanced Radio Wave Propagation	DTE302 Photonics DTE306 Wireless Communication
EE626 Advanced Microwave Technique	DTE305 Optical Communication
BAE604 Telecommunication Engineering	DTE303 Telecommunication Engineering DTE310 Customer Premise Installations
EE525 Data Communication	DTE301 Network Management DTE304 TCP/IP
EE603 Electronic Communication Principle	DTE308 Mobile Communication DTE309 VOIP DTE311 OFDM/CDMA DET312 SDH/SONET

IQY Technical College သည်အင်ဂျင်နီယာသင်တန်းများသာမကအသက်မွေးဝမ်းကျောင်းပညာမျိုးစုံကိုလည်းလက်မှတ် (Certificate) မှဒီပလိုမာ၊ Bachelors ဒီကရီဘွဲ့အထိ၁၀၀ရာနှုန်းမြန်မာဘာသာဖြင့်အွန်လိုင်းဖြင့်၂၀၂၀ဇန်နဝါရီမှစတင်၍သင်ပေးမည်။

သင်မည့်သင်တန်းများ၊ဘာသာများမှာအောက်ပါအတိုင်းဖြစ်သည်။

ဘာသာအားလုံးအတွက်မြန်မာဘာသာ e-Book အခီလက်ထရောနစ်စာအုပ်များပေးမည်။

1/Sewing Garment အထည်ချုပ်အတတ်ပညာ

2/Cookingအချက်အပြုတ်၊ စားဖိုမှူးပညာ

/3/Childcare ကလေးထိန်းပညာ

4/Aged Care/Nursingသက်ကြီးရွယ်အိုပြုစုရေးပညာသူနာပြုပညာ

5/Waiter/ Reception / Tourismည့်ကြိုပညာ

6/Securityလုံခြုံရေးအစောင့်ဝန်ထမ်းပညာ

7/Logistics သယ်ယူပို့ဆောင်ရေးပညာ

8/Agriculture စိုက်ပျိုးရေးပညာ

9/ Animal Handling & Live Stockမွေးမြူရေးပညာ

10/Shop Attendant & Marketingစျေးဆိုင်ပညာ

11/Handyman and Asset Maintenanceပြုပြင်ထိန်းသိမ်းပညာ

12/Dancerမြန်မာရိုးရာကနည်းပညာ+Zumba

13/Laundry အဝတ်လျှော်လုပ်ငန်းပညာ

14/Hair Dressing ဆံပင်ညှပ်ပညာ

15/Water Operation ရေပေးရေးပညာ

16/Storeသိုလှောင်ရုံလုပ်ငန်းပညာ

17/ Cleaner သန့်ရှင်းရေးပညာ

18/Factory စက်ရုံလုပ်သားပညာ/

19/ Maintenance ပြင်ရေးလုပ်သားပညာ

20/Printing ပုံနှိပ်လုပ်သားပညာ

21/Postal Worker/Library စာပို့လုပ်ငန်းပညာ စာကြည့်တိုက်လုပ်ငန်းပညာ

22/ Teachers Aidesပညာရေးအကူလုပ်သားပညာ

23/Production and Industry ကုန်ထုတ်လုပ်သားပညာ

24/Visual Arts and Crafts လက်မှုအနုပညာ

25/Screen Media သတင်းနှင့်ရုပ်သံပညာ

အသက်မွေးဝမ်းကျောင်း ပညာမျိုးစုံကိုBachelors ဒီဂရီဘွဲ့အထိစီစဉ်ပြီးအဆင့်မြှင့်တင်ခြင်းကို

Australia, USA, UK နိုင်ငံများအတိုင်းမြန်မာနိုင်ငံတွင်စတင်ကာမြန်မာလိုသင်မည်။

Australia ၏ TAFE (Technical and Further Education) စံနစ်ကိုမြန်မာနိုင်ငံတွင် IQY Technical College က၂၀၂၀ဇန်နဝါရီမှမြန်မာဘာသာအွန်လိုင်းဖြင့်စတင်ပြီဖြစ်သည်။

စာရင်းသွင်းရန်လင့်

https://www.emailmeform.com/builder/form/PXcY6O9gHaafufMf52exs

Diploma Advanced Diploma and Bachelor of Work Studies -Garment

အထည်ချုပ်အတတ်ပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
ADMEC 203	Design and Technology
WS2001A	Sewing
WS2001B	Garment
WS2001C	Weaving Technology
WS3001A	Management Theory
WS3001B	Project
WS3001C	Work Experience

Diploma Advanced Diploma and Bachelor of Work Studies -Food Services

အချက်အပြုတ်၊ စားဖိုမှူးပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC205	CERTIFICTE IN COMMUNITY SERVICE
WS2002A	Cooking 1
WS2002B	Cooking 2
WS2002C	Chef
WS3001A	Management Theory
WS3001B	Project
WS3001C	Work Experience

Diploma Advanced Diploma and Bachelor of Work Studies -Children Services

ကလေးထိန်းပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC205	CERTIFICTE IN COMMUNITY SERVICE
WS2003A	Child studies Unit 1+2
WS2003B	Child studies Unit 3+4
WS2003C	Child studies Unit 5+6
WS3001A	Management Theory
WS3002A	Child Studies Unit 7+8
WS3002B	Child Studies Unit 9+10
WS3002C	Child Studies Unit 11+12
WS3002D	Child Studies Unit 13

Diploma Advanced Diploma and Bachelor of Work Studies -Aged Care Services and Nurse assisting

သက်ကြီးရွယ်အိုပြုစုရေးပညာသူနာပြုပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC205	CERTIFICTE IN COMMUNITY SERVICE
WS2004A	Aged Care
WS2004B	Caring Protection Support Training
WS2004C	Citizenship Duty and Responsibility
WS2004D	Community Approach for Disaster Protection
WS2004E	Community Work
WS2004F	Democratic Service
WS3004A	Health Care of Displaced People
WS3004B	Home Care Domestic Assistant Support
WS3004C	Mental Health
WS3004D	Nursing Law
WS3004E	Welfare Tasks
WS3004F	Standardized Health Messages

Diploma Advanced Diploma and Bachelor of Work Studies -Customer Services, guest House Waiter and Tourism

ဧည့်ကြိုပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC205	CERTIFICTE IN COMMUNITY SERVICE
WS2005A	Reception and Guest House Operation
WS2005B	Tourism and Tour Guide
WS3001A	Management Theory
WS3001B	Project
WS3001C	Work Experience

Diploma Advanced Diploma and Bachelor of Work Studies-Public Safety

လုံခြုံရေးအစောင့်ဝန်ထမ်းပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC208	CERTIFICATE IN PUBLIC SAFETY
WS2006A	Civil servant codes
WS2006B	Community Security
WS2006C	Ethics
WS2006D	Freedom of Judges and Lawyers
WS2006E	Human Trafficking Protection
WS2006F	Humanity Works Protection of Violence
WS3006A	Legal Defence
WS3006B	Police Task
WS3006C	Safety in Education Establishment
WS3006D	Safety Protection Training
WS3006E	School Security
WS3006F	Urban Safety
WS3006G	Working at Company

Diploma Advanced Diploma and Bachelor of Work Studies-Transport and Logistics

သယ်ယူပို့ဆောင်ရေးပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC209	CERTIFICATE IN LOGISTICS
WS2007A	Driver Hand Book and Rules
WS2007B	Driving Laws
WS2007C	Truck Driving System
WS3001A	Management Theory
WS3001B	Project (Planning Cargo Movement)
WS3001C	Work Experience

Diploma Advanced Diploma and Bachelor of Work Studies—Agri Foods Production and Bachelor of Agriculture

စိုက်ပျိုးရေးပညာစာအုပ်

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC201	CERTIFICATE IN AGRICULTURE FOOD PRODUCTION
Y1112SC	Science (Optional)
Y1112Ch	Chemistry (Optional)
WS2008A	Agricultural Law
WS2008B	Agricultural Technology
WS2008C	Coffee and Seasonal Crops
WS2008D	Cotton Production
WS2008E	Crops
WS2008F	Garden Plantation
WS3008A	Long term Crops
WS3008B	Pest Protection
WS3008C	Properties of Crops
WS3008D	Rice Production
WS3008E	Seeds Storage and Usage
WS3001A	Management Theory
WS3001B	Project
WS3001C	Work Experience

Diploma Advanced Diploma and Bachelor of Work Studies-Animal Handling and Live Stock

မွေးမြူရေးပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC202	CERTIFICATE IN ANIMALS HANDLING
Y1112SC	Science (Optional)
Y1112Ch	Chemistry (Optional)
WS2009A	Animal Diseases
WS2009B	Animal Foods
WS2009C	Community Cooperation
WS2009D	Fish Farming
WS2009E	Live Stock Techniques
WS3009A	Scientific-Terminology
WS3009B	Township Disaster Management
WS3009C	Live Stock Knowledge
WS3001A	Management Theory
WS3001B	Project

Diploma Advanced Diploma and Bachelor of Work Studies-Sales and Marketing

ဈေးဆိုင်ပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC203	CERTIFICATE IN BUSINESS
WS2010A	Anti Corruption Studies
WS2010B	Company Business Ethics
WS2010C	Employing Person with Disability
WS3010A	Money Management for shopkeepers
WS3010B	Anti Human-Trafficking in Small Businesses
WS3010C	Right and Responsibility in Business Operation

WS3001A	Management Theory
WS3001C	Work Experience

Diploma Advanced Diploma and Bachelor of Work Studies-Handyman Properties Services

ပြုပြင်ထိန်းသိမ်းပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC206	CERTIFICATE IN PROPERTIES SERVICES
Y1112Sc	Science
Y!!!2Ph	Physics
Y1112Ch	Chemistry
Y1112M	Mathematics
WS2010A	Concrete Structure
WS2010B	Safety Control
WS2010C	Bridge Maintenance
WS3011A	Bitumen
WS3011B	Cement
WS3011C	Deformed Bars
WS3001B	Project
WS3001C	Work Experience

Diploma Advanced Diploma and Bachelor of Work Studies-Performing

ကနည်းပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC207	CERTIFICATE IN PERFORMING
WS2012A	Dancing
WS2012B	Zumba
WS2012C	Multilingual Education
WS3001A	Management Theory
WS3001B	Project

WS3001C	Work Experience

Diploma Advanced Diploma and Bachelor of Work Studies-Rural Development and Water Operations

ရေပေးရေးပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC204	CERTIFICATE IN LABORATORY WATER OPERATIONS
Y1112Sc	Science
Y!!!2Ph	Physics
Y1112Ch	Chemistry
Y1112M	Mathematics
WS2013A	Mine Environmental safety
WS2013B	Water Sanitation
WS2013C	Rural Development
WS3001A	Management Theory
WS3001B	Project
WS3013C	Land Management

Diploma Advanced Diploma and Bachelor of Work Studies-Laundry Operations and Textile Care

အဝတ်လျှော်လုပ်ငန်းပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC206	CERTIFICATE IN PROPERTIES SERVICES
Y1112Sc	Science
Y1112Ch	Chemistry
WS2014A	Laundry Work
WS2014B	Heat Illness

WS2014C	Human Rights and Tourism
WS3001A	Management Theory
WS3014B	Project (Establishing New Laundry)
WS3014C	Work Experience-Laundry

Diploma Advanced Diploma and Bachelor of Work Studies-Hair Dressing and Personal Services

ဆံပင်ညှပ်ပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC205	CERTIFICTE IN COMMUNITY SERVICE
WS2015A	Hair Dressing Theory at IQY
WS2015B	Hair Dressing Experience
WS2015C	Hair Dressing Training at Workplace
WS3001A	Management Theory
WS3015A	Project (Establishing hair Dressing Business)
WS3015B	Work Experience (Managing Hair dressing Business)

Diploma Advanced Diploma and Bachelor of Work Studies-Store Materials Handling and Assessment Management

သိုလှောင်ရုံလုပ်ငန်းပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC206	CERTIFICATE IN PROPERTIES SERVICES
WS2016A	Farm Storage
WS2016B	Chemical Storage Law
WS2016C	Fishing Storage
WS3001A	Management Theory
WS3016A	Store Operation
WS3015B	Agricultural Reform and Supply Chain System

Diploma Advanced Diploma and Bachelor of Work Studies-Cleaning Properties Maintenance and Community Health

သန့်ရှင်းရေးပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC206	CERTIFICATE IN PROPERTIES SERVICES
WS2017A	Cleaning
WS2017B	Community Health
WS2017C	Protection-mainstreaming
WS2017D	Nutrition
WS2017E	Gender-Responsive Programming
WS3001A	Management Theory
WS3017A	National Investment Plan for_ Rural Water Supply Sanitation Hygiene
WS3015B	National Strategy for Rural Water Supply Sanitation Hygiene

Diploma Advanced Diploma and Bachelor of Work Studies-Manufacturing and Industry

စက်ရုံလုပ်သားပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC211	CERTIFICATE IN ENGINEERING PRODUCTION & MANUFACTURING THEORY
Y1112Sc	Science
Y!!!2Ph	Physics
Y1112Ch	Chemistry
Y1112M	Mathematics
WS2018A	Amended-Law-for-Leave-and-Holiday-Law
WS2018B	Employment Contract
WS2018C	Equal Employment Right
WS2018D	Factory Work
WS2018E	Factory-Act Amended
WS2018F	Code of Conduct

WS2018G	Human Right
WS3001A	Management Theory
WS3018A	Environmental Assessment
WS3018B	Payment Laws
WS3018BC	Second-Dispute-Settlement-Law
WS3018D	Worker Compensation
WS3018E	Shop and Office Place Law
WS3018F	Social Security Rule

Diploma Advanced Diploma and Bachelor of Work Studies-Clerk of Work

ပြုပြင်ရေးလုပ်သားပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC211	CERTIFICATE IN ENGINEERING PRODUCTION & MANUFACTURING THEORY OR
MVTC206	CERTIFICATE IN PROPERTIES SERVICES
Y1112Sc	Science
Y!!!2Ph	Physics
Y1112Ch	Chemistry
Y1112M	Mathematics
WS2018A	Amended-Law-for-Leave-and-Holiday-Law
WS2018B	Employment Contract
WS2018C	Equal Employment Right
WS2018D	Factory Work
WS2018E	Factory-Act Amended
WS2018F	Code of Conduct
WS2018G	Human Right
WS3001A	Management Theory
WS3018A	Environmental Assessment

WS3018B	Payment Laws
WS3018BC	Second-Dispute-Settlement-Law
WS3018D	Worker Compensation
WS3018E	Shop and Office Place Law
WS3018F	Social Security Rule

Diploma Advanced Diploma and Bachelor of Work Studies- Printing and Manufacturing

ပုံနှိပ်လုပ်သားပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC210	CERTIFICATE IN INFORMATION TECHNOLOGY
ADMEC203	Design and Technology
Y1112Sc	Science
Y!!!2Ph	Physics
Y1112Ch	Chemistry
Y1112M	Mathematics
WS2018A	Amended-Law-for-Leave-and-Holiday-Law
WS2018B	Employment Contract
WS2018C	Equal Employment Right
WS2018D	Factory Work
WS2018E	Factory-Act Amended
WS2018F	Code of Conduct
WS2018G	Human Right
WS3001A	Management Theory
WS3018A	Environmental Assessment
WS3018B	Payment Laws
WS3018BC	Second-Dispute-Settlement-Law
WS3018D	Worker Compensation

WS3018E	Shop and Office Place Law
WS3018F	Social Security Rule

Diploma Advanced Diploma and Bachelor of Work Studies-Postal and Library Services

စာပို့လုပ်ငန်းပညာ စာကြည့်တိုက်လုပ်ငန်းပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC203	CERTIFICATE IN BUSINESS
MVTC210	CERTIFICATE IN INFORMATION TECHNOLOGY
WS2021A	Ancient and Modern libraries in Myanmar
WS2021B	Postal and Library Service
WS2021C	Postal Service
WS3001A	Management Theory
WS3001B	Project
WS3001C	Work Experience
WS3021A	Procedural Safeguard

Diploma Advanced Diploma and Bachelor of Work Studies-Teacher Aides and Education Support

ပညာရေးအကူလုပ်သားပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC203	CERTIFICATE IN BUSINESS
MVTC210	CERTIFICATE IN INFORMATION TECHNOLOGY
WS2022A	Procedural-Safeguard
WS2022B	Continuing Education
WS2022C	Minimum Standard
WS2022D	Teacher Aides School Health Development

WS2022E	Rural Development
WS3022A	Teacher Aides School Safety
WS3022B	Teacher Aides School Students Support
WS3022C	Water Sanitation
WS3022AD	Minimum standard Part 2
WS3001A	Management Theory

Diploma Advanced Diploma and Bachelor of Work Studies-Production and Industry

ကုန်ထုတ်လုပ်သားပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC211	CERTIFICATE IN ENGINEERING PRODUCTION & MANUFACTURING THEORY OR
MVTC206	CERTIFICATE IN PROPERTIES SERVICES
Y1112Sc	Science
Y!!!2Ph	Physics
Y1112Ch	Chemistry
Y1112M	Mathematics
WS2018A	Amended-Law-for-Leave-and-Holiday-Law
WS2018B	Employment Contract
WS2018C	Equal Employment Right
WS2018D	Factory Work
WS2018E	Factory-Act Amended
WS2018F	Code of Conduct
WS2018G	Human Right
WS3001A	Management Theory
WS3018A	Environmental Assessment

WS3018B	Payment Laws
WS3018BC	Second-Dispute-Settlement-Law
WS3018D	Worker Compensation
WS3018E	Shop and Office Place Law
WS3018F	Social Security Rule

Diploma Advanced Diploma and Bachelor of Work Studies-Visual Arts and Crafts

လက်မှုအနုပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
ADMEC203	Design and Technology
WS2024A	Works of Painters
WS2024B	Photography
WS2024C	Kinds of Crafts
WS3001A	Management Theory
WS3001B	Project
WS3001C	Work Experience

Diploma Advanced Diploma and Bachelor of Work Studies -Screen Media

သတင်းနှင့်ရုပ်သံပညာ

WS101	Vocational Studies
WS102	Safety Training
WS103	English
MVTC205	CERTIFICTE IN COMMUNITY SERVICE
WS2025A	News Paper , Film and Video Part 1
WS2025B	Film and video Part 2

WS2025C	Organizing Technique and Radio Broadcasting
WS3001A	Management Theory
WS3001B	Project
WS3001C	Work Experience
WS3025A	Right and Responsibility
WS3025B	Responsibility of Media in Civil Defence

ENGINEERING FUNDAMENTAL EXAMINATION SUPPORT SITE

www.highlightcomputer.com/ef.htm

PROFESSIONAL ENGINEER EXAMINATION SUPPORT SITE

www.highlightcomputer.com/pesupport.htm

Fundamental of Engineering Overseas Test System General Information

Fundamental of Engineering Study Areas (Reference to Professional Engineers Board of Singapore)

Fundamental of Engineering Study Resources

(Reference to Professional Engineers Board of Singapore) (Civil)

Electrical

Mechanical

Marine Engineers & Naval Architect Professional Engineers Test References

Engineering Calculations

(Electrical+ Civil+ Structural+ Architectural+ Mechanical + Building Services+ Chemical+ Environmental)

Chemical Engineers Reference

Petroleum Engineers Reference

Materials, Metallurgy & Mining Engineers Reference

Part 1

No password is set

Fundamental of Engineering Overseas Test System General Information

SYSTEMS ENGINEERING FUNDAMENTALS

sefguide_01_01.pdf (1.23MB)
http://www.filefactory.com/file/5mp9qwrkswo1/n/sefguide_01_01.pdf

Using Engineering Economics to Pass the FE Exam.ppt (0.07MB)
http://www.filefactory.com/file/69ylwwm73ozb/n/Using_Engineering_Economics_to_Pass_the_FE_Exam.ppt

Engineering Fundamental

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Surveyor Exam

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Fundamental of Engineering Fluid Mechanics

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FE-Exam-Info-Handout.doc (0.04MB)
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Singapore PE Exam Information

FEE2014.pdf (2.01MB)
http://www.filefactory.com/file/2dv2ald5pwgv/n/FEE2014.pdf

Engineering Fundamental FE Exam Supplied Handbook.pdf (4.58MB)
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Computer Engineering Syllabus

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Introduction to the Mathematical Theory of Systems and Control

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12200_first edition revision 1.pdf (1.02MB)
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Part 2

Fundamental of Engineering Study Areas (Reference to Professional

Engineers Board of Singapore)

No password is set

Fundamental of Engineering-Civil (FEC)

FEC 101 (CE 101) Mechanics of Materials)

FEC 102 (CE 102 Structural Mechanics)

FEC 103 (CE 103 Structural Analysis)

FEC 104 (CE 104 Soil Mechanics)

FEC 105 (CE 105 Fluid Mechanics)

FEC 201 (CE 201 Reinforced and Prestressed Concrete Structures)

FEC 202 (CE 202 Steel and Composite Structures)

FEC 203 (CE 203 Geotechnical Engineering)

FEC 204 (CE 204 Transportation)

FEC 205 (CE 205 Hydraulics and Hydrology)

FEC 206 (CE 206 Environmental Engineering)

See FEE2014

FEE2014.pdf (2.01MB)
http://www.filefactory.com/file/3vnl52j9mz01/n/FEE2014.pdf

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Fundamental of Engineering-Electrical (FEE)

FEE 101 (EE 101 Principles of Power Engineering)

FEE 201 (EE 201 Power System Analysis and Utilization)

See FEE2014

FEE2014.pdf (2.01MB)
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Fundamental of Engineering-Mechanical (FEM)

FEM 101 (ME 101 Control and Instrumentations)

FEM 102 (ME 102 Dynamics and Vibrations)

FEM 103 (ME 103 Fluid Mechanics)

FEM 104 (ME 104 Mechanics and Materials)

FEM 105 (ME 105 Manufacturing Technology)

FEM 106 (ME 106 Thermodynamics and Heat Transfer)

FEM 201 (ME 201 Control and Instrumentations)

FEM 202 (ME 202 Dynamics and Vibrations)

FEM 203 (ME 203 Fluid Mechanics)

FEM 204 (ME 204 Mechanics and Materials)

FEM 205 (ME 205 Manufacturing Technology)

FEM 206 (ME 206 Thermodynamics and Heat Transfer)

See FEE2014

FEE2014.pdf (2.01MB)
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Part 3

Fundamental of Engineering Study Resources

(Reference to Professional Engineers Board of Singapore)

No password is set

Fundamental of Engineering-Civil (FEC)

upt39_an-introduction-to-transportation-engineering.pdf (0.03MB)
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CE206-watpolcontrol.pdf (4MB)
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CE206-Water Pollution Control.pdf (4MB)
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CE206-handbook-of-water-engineering-problems.pdf (3.62MB)
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CE204-Transport Planning & Traffic Engineering.pdf (35.28MB)
http://www.filefactory.com/file/6lhihbv8nywd/n/CE204-Transport_Planning_&_Traffic_Engineering.pdf

CE205-The science of water concepts and applications.pdf (5.91MB)
http://www.filefactory.com/file/68ce6dnqk9mr/n/CE205-The_science_of_water_concepts_and_applications.pdf

CE205-Textbook on Hydrology.pdf (7.97MB)
http://www.filefactory.com/file/5u0q4uonkjy1/n/CE205-Textbook_on_Hydrology.pdf

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Materials, Metallurgy & Mining Engineers References

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Metallurgy

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Powdered Metallurgy

Engineering Design References

www.iqytechnicalcollege.com/engineeringdesign1.htm

Enrolment Link

http://www.emailmeform.com/builder/form/buB30es8fqUb1Y6fM7fxya

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3/[Architecture Ebook] Design of Masonry Structures.pdf (3.64MB)

4/[Architecture Ebook] Working Drawings Handbook.pdf (7.84MB)

5/[Architecture Ebook] Building Services Handbook.pdf (11.8MB)

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Project

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Master of Engineering (Civil) High Rise Building Construction

(240 Credits) (Course 8011121)

Masters of Engineering (Civil- High Rise Building Construction) program is for recent graduates who have completed their BE degrees.

It will include the following 12 subjects of 10 credits each.

This program will be delivered entirely in English .

Graduate Diploma in Engineering (180 credits)

Completion of the compulsory 6 subjects will earn Graduate Diploma in Engineering (60 credits at Masters level +120 Credits for Bachelors degree level total 180credits. Completion of two or more units can earn Graduate Certificate in Engineering.

List of Subjects (Compulsory)

(1)BAE6011 Hign Rise Building Construction Project

(2) BAE6012 High Rise Building Construction Method

(3) BAE6013 Design of High Rise Building

(4)BAE6014 High Rise Building Structure

(5)BAE6015 Scheduling Building Construction
(6)BAE6016 Fire Safety in High Rise Building

List of Subjective (Civil Engineering Subjects)

(7) BAE650 Steel Design

(8) BAE 643-Earthquake Resistant Structure

(9) BAE 634-Building Construction

(10) BAE 637-Composite Structure of Steel& Concrete

(11) BAE 636-Building Technology Electrical Mechanical System
(12) BAE 644-Estimating

Assessment

The candidates will need to submit the study report

Read the e Book , view the lecture videos and write 20 pages study report for each of the subjects outlined below.

- The report needs to include
- Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

ADVANCED DIPLOMA AND BACHELOR OF WORK STUDIES (VOCATIONAL STUDIES)
Course 456678/556678

456678A/556678A

Advanced Diploma/ Bachelor of Work Studies(Chemical Laboratory & water Operations)

456678B/556678B

Advanced Diploma/ Bachelor of Work Studies (Performance)

456678C/556678C

Advanced Diploma/ Bachelor of Work Studies (Construction)

456678D/556678D

Advanced Diploma/ Bachelor of Work Studies (Properties Services)

456678E/556678E

Advanced Diploma/ Bachelor of Work Studies
(Public Safety ,Personal Services, Hospatility)

456678F/556678F

Advanced Diploma/ Bachelor of Work Studies (Screen Media)

456678G/556678G

Advanced Diploma/ Bachelor of Work Studies(Security Service)

456678G/556678G

Advanced Diploma/ Bachelor of Work Studies (Transport)

456678H/556678H

Advanced Diploma/ Bachelor of Work Studies (Agriculture)

456678I/55667I
Advanced Diploma/ Bachelor of Work Studies(AgriFood Resources)

456678J/556678J
Advanced Diploma/ Bachelor of Work Studies (Animal Studies)

456678K/55668K
Advanced Diploma/ Bachelor of Work Studies (Business)

456678L/55668L
Advanced Diploma/ Bachelor of Work Studies (Community Services)

456678M/55668M
Advanced Diploma/ Bachelor of Work Studies (Transport)

456678N/55668N
Advanced Diploma/ Bachelor of Work Studies (Food Service)

456678O/55668O
Advanced Diploma/ Bachelor of Work Studies (Health Service)

456678P/55668P
Advanced Diploma/ Bachelor of Work Studies (Library Service)

456678Q/55668Q
Advanced Diploma/ Bachelor of Work Studies (Manufacturing)

456678R/55668R
Advanced Diploma/ Bachelor of Work Studies (Marine Studies)

456678S/55668S
Advanced Diploma/ Bachelor of Work Studies (Marketing)

456678A/556678EN

Advanced Diploma/ Bachelor of Work Studies(Engineering-Electrical/Civil/Mechanical/Others)

- 6 Subjects-Advanced Diploma
- 12 Subjects Bachelor of Work studies

Curriculum

The same discipline subjects—Specialized discipline will on award
Mixture of discipline subjects—General Engineering on award

- GE1 Electrical Wiring (EE)
- GE2 Electrical Machine (EE)
- GE3 Electrical Distribution (EE)

- GE4 Power System Operation (EE)
- GE5 Power System Protection
- GE6 Occupational Health & Safety
- GE7 Project Management (EE/CE/ME)
- GE8 Electronics (EE)
- GE9 Process Control (EE/ME)
- GE10 Industrial Electronics (EE)
- GE11 Programmable Logic Controller (EE/ME)
- GE12 Photovoltaic Solar Electrical System
- GE13 Principle of Engine(ME)
- GE14 Fitting & Machining (ME)
- GE15 Building Construction (CE)
- GE16 Engineering Drawing I (EE/CE/ME)
- GE17 Pipe Fitting (CE/ME)
- GE18 Air-conditioning & Refrigeration (ME)
- GE19 Computer Programming (EE/CE/ME)
- GE20 Computer Networking (EE)
- GE21 Welding (ME)
- GE22 Painting & Decoration (CE)
- GE23 Pnuematics (CE/ME)
- GE24 Manufacturing Management (ME)
- GE25 Surveying (CE)
- GE26 Energy Efficient Building Design
- GE27 Machine Principle(ME)
- GE28 Hydraulic (CE/ME)

- GE29 Materials & Corrosion Prevention (CE/ME)
- GE30 Bricklaying (CE)
- GE31 Sprouting & Guttering (CE)
- GE32 Electronic Security Installation

- GE33 Explosion Protection
- GE34 Engineering Business Management
- ---
- BTech/BE Conversion

- IE1 Engineering Mathematics
- IE2 Engineering Physics
- IE3 Material Science
- IE4 Advanced Engineering Mathematics
- IE5 Mechanical Science
- IE6 Principle of Electricity
- IE7 Electrical Circuit I (EE)
- IE8 Electrical Circuit II (EE)
- IE9 Advanced Building Construction (CE)
- IE10 Transmission Line (EE)
- IE11 Electrical & Mechanical Engineering Work Experience
- IE12 Civil Engineering Work Experience
- IE13 Advanced Workshop
- IE15 Advanced Engineering Design & Project Work
- IE16 Power System Analysis-Fault Calculation
- IE17 Power Line Design
- IE18 Building services
- IE19 PCB Design
- IE20 Maths References
- IE21 Electrical Principle

- IE22 Co-generation
- IE23 Industrial Computer System
- IE24 Microprocessor
- IE25 Power System Fundamental

- IE26 Electrical Communication Fundamental
- IE27 Control Concept
- IE28 Electronic Signal & System
- IE29 Electrical Estimating
- IE30 Electronic Workbench
- IE31 Introduction to Renewable Energy Technology
- IE32 Telecommunication Cabling & Installation
- IE33 Hybrid Energy System
- IE34 Electricity Supply Industrial Skills

656678A

Bachelor of Science (Technology)

- Bachelor of Work Studies(Engineering)+ Software Studies Part 1

656678B

Bachelor of Science (Engineering)

- Bachelor of Work Studies(Engineering)+ Software Studies Part 2

Graduate Diploma in Geographic Information Systems (Grad Dip GIS)(6886650)

Course Feature

This course introduces students to the 'building blocks' of GIS systems, including data structures, relational databases, spatial queries and analysis. The focus then moves on to sources of spatial data including Global Positioning System (GPS), operational systems such as smartcard ticketing and transaction data along with web-based sources highlighting both the potential and challenges associated with integrating each data source within a GIS environment. The unit is hands-on involving learning how to use the latest GIS software to analyse several problems of interest using real 'big data' sources and to communicate the results in a powerful and effective way. These include identifying potential demand for new services or infrastructure, creating a delivery and scheduling plan for a delivery firm or examining the behaviour of travellers or consumers over time and locations

Pre-requisite

Any Bachelors degree

Mode of Learning

Online/ English/ Video Lessons/ Readers/ Submission of study report

Subjects (Total 80 credits) (Each 8 credits)

- GIS601-PrinciplesGIS
- GIS602-Principle of GPS
- GIS603-Relational databases
- GIS604-Smartcard-Ticketing-
- GIS605 Spatial data system
- GIS606 Spatial queries and analysis
- GIS607 SpatialDecisionMaking0
- GIS608 Building Block of GIS
- GIS609 integrating data source within a GIS environment
- GIS610 Large spatial datasets analysis
- GIS Software

Graduate Diploma of Engineering Practice (Civil)

STAGE (3) ADVANCED GENERAL CIVIL ENGINEERING (18 Pt)

BAE421 Building Construction Engineering (4 pt)

BAE422 Estimating (2 pt)

BAE423 Fluid Mechanics (2 pt)

BAE424 Reinforced Concrete (2 pt)

BAE425 Timber Engineering (2 pt)

BAE521 Road & Bridge (2 pt)

BAE522 Rock Mechanics (2 pt)

BAE523 Soil Mechanics (2 pt)

STAGE (4 A) ADVANCED SPECIALIZED CIVIL ENGINEERING STUDY (6Pt)

BAE621 Structural Engineering (3 pt)

BAE622 Architecture (3 pt)

STAGE (4B) ADVANCED SPECIALIZED CIVIL ENGINEERING STUDY (4Pt)

BAE623 Surveying & Traffic Engineering (2 pt)

BAE624 Water Supply , Sanitation & Finishing (2 pt)

Graduate Diploma of Engineering Practice (Civil)

STAGE (3) ADVANCED GENERAL CIVIL ENGINEERING (18 Pt)

BAE421 Building Construction Engineering (4 pt)

BAE422 Estimating (2 pt)

BAE423 Fluid Mechanics (2 pt)

BAE424 Reinforced Concrete (2 pt)

BAE425 Timber Engineering (2 pt)

BAE521 Road & Bridge (2 pt)

BAE522 Rock Mechanics (2 pt)

BAE523 Soil Mechanics (2 pt)

STAGE (4 A) ADVANCED SPECIALIZED CIVIL ENGINEERING STUDY (6Pt)

BAE621 Structural Engineering (3 pt)

BAE622 Architecture (3 pt)

STAGE (4B) ADVANCED SPECIALIZED CIVIL ENGINEERING STUDY (4Pt)

BAE623 Surveying & Traffic Engineering (2 pt)

BAE624 Water Supply , Sanitation & Finishing (2 pt)

Graduate Diploma of Engineering Practice (Civil)

STAGE (3) ADVANCED GENERAL CIVIL ENGINEERING (18 Pt)

BAE421 Building Construction Engineering (4 pt)

BAE422 Estimating (2 pt)

BAE423 Fluid Mechanics (2 pt)

BAE424 Reinforced Concrete (2 pt)

BAE425 Timber Engineering (2 pt)

BAE521 Road & Bridge (2 pt)

BAE522 Rock Mechanics (2 pt)

BAE523 Soil Mechanics (2 pt)

STAGE (4 A) ADVANCED SPECIALIZED CIVIL ENGINEERING STUDY (6Pt)

BAE621 Structural Engineering (3 pt)

BAE622 Architecture (3 pt)

STAGE (4B) ADVANCED SPECIALIZED CIVIL ENGINEERING STUDY (4Pt)

BAE623 Surveying & Traffic Engineering (2 pt)

BAE624 Water Supply , Sanitation & Finishing (2 pt)

Graduate Diploma of Engineering Practice (Computer Control Engineering)

This one year course with 30 credit points trains the BCSc & BCTech graduates and final year students to work as computer control system technicians and engineers in various industries. It consists of electrical engineering units, electronic engineering units, analogue and digital principles, process control system, programmable control, computer aided control and instrumentation, linear system and modern control system units.

Pre-requisites

BCSc or BC Tech , Final years

Contents

Group (1)	**Group (2)**
EE101 DC Circuit Problems EE103 Basic Electrical Drafting EE107 Electrical Equipments EE109 Electrical Control Circuits EE112 Alternating Current Principle EE113 Electrical Fundamental EE206 AC Machines EE207 DC Machines EE202 Electrical Circuits	EE115 Basic Analogue and Digital Electronics EE121 Electronic Power Control Devices EE208 Operational Amplifier EE209 Analogue Electronics EE301 Advanced Electrical Drafting EE117 Solar Electrical System
The students study the power points containing the explanations in English + Myanmar Languages, do & submit theoretical & simulated practicals. Tutoring support by electronics teachers.	The students study the power points containing the explanations in English + Myanmar Languages, do & submit theoretical & simulated practicals. Tutoring support by electronics teachers.

The students who successfully complete Group 1 & 2 will receive Graduate Certificate in Engineering Practice (Electrical & Electronic)

Group (3)	**Group (4) University post graduate level**
ME203 Control Engineering ME534 Numerical Control ME434 Mechatronics and Robotics EE624 Process Control ME302 Automation & Robotics	BAE408 Analogue and Digital Electronics BAE502 Linear System BAE503 Control System
The students study the power points containing the explanations in English + Myanmar Languages, Study the text books in Myanmar language & enrich the knowledge by reading the references in English Do & submit theoretical & simulated practicals. Tutoring support by electronics teachers.	The students study the power points containing the explanations in English + Myanmar Languages, do & submit theoretical & simulated practicals. Tutoring support by electronics teachers.

The students who successfully complete Group 3& 4 will receive Graduate Diploma of Engineering Practice (Computer Control Engineering)

GRADUATE DIPLOMA OF ENGINEERING PRACTICE (MECHANICAL) STUDY GUIDE

BAE311 Plant Engineering (2 pt)

BAE312 Design Engineering (2 pt)

BAE313 Environmental Control (2 pt)

BAE314 Mechanical Power Generation (2 pt)

BAE315 Materials Engineering (2 pt) Part 1 Part 2

BAE511 Air-conditioning & Refrigeration	3	ME511 Air-conditioning & Refrigeration
BAE512 Building Service Water Supply System	3	ME512 Building Service Water Supply System
BAE513 Production Technology	3	ME513 Production Technology
BAE611 Maintenance Engineering	3	ME 611 Maintenance Engineering
BAE612 Engineering Metallurgy	1	ME 612 Metallurgy
BAE613 Mechanical Instrumentation Process	3	ME 613 Mechanical Instrumentation & Process
BAE614 Machine Design	2	ME 614 Machine Design Part 1 Part 2 Part 3

GRADUATE DIPLOMA OF ENGINEERING PRACTICE (MECHANICAL) STUDY GUIDE

BAE311 Plant Engineering (2 pt)

BAE312 Design Engineering (2 pt)

BAE313 Environmental Control (2 pt)

BAE314 Mechanical Power Generation (2 pt)

BAE315 Materials Engineering (2 pt) Part 1 Part 2

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BAE512 Building Service Water Supply System	3	ME512 Building Service Water Supply System
BAE513 Production Technology	3	ME513 Production Technology
BAE611 Maintenance Engineering	3	ME 611 Maintenance Engineering
BAE612 Engineering Metallurgy	1	ME 612 Metallurgy
BAE613 Mechanical Instrumentation Process	3	ME 613 Mechanical Instrumentation & Process
BAE614 Machine Design	2	ME 614 Machine Design Part 1 Part 2 Part 3

GRADUATE DIPLOMA OF ENGINEERING PRACTICE (MECHANICAL) STUDY GUIDE

BAE311 Plant Engineering (2 pt)

BAE312 Design Engineering (2 pt)

BAE313 Environmental Control (2 pt)

BAE314 Mechanical Power Generation (2 pt)

BAE315 Materials Engineering (2 pt) Part 1 Part 2

BAE511 Air-conditioning & Refrigeration	3	ME511 Air-conditioning & Refrigeration
BAE512 Building Service Water Supply System	3	ME512 Building Service Water Supply System
BAE513 Production Technology	3	ME513 Production Technology
BAE611 Maintenance Engineering	3	ME 611 Maintenance Engineering
BAE612 Engineering Metallurgy	1	ME 612 Metallurgy
BAE613 Mechanical Instrumentation Process	3	ME 613 Mechanical Instrumentation & Process
BAE614 Machine Design	2	ME 614 Machine Design Part 1 Part 2 Part 3

IQY Technical College/ St Clements University Humanities Study Programs

www.highlightcomputer.com/HumanitiesCoursesOutline.pdf

The objective of Humanities Studies program is to provide formal academic study and recognition for community workers, social service workers and volunteers who are performing the humanitarian works.

Entry Requirement

No formal requirement but working in humanitarian service is needed. But those without university entrance qualifications may need to attend our basic education studies.

Course Structure

- Diploma in Humanities Studies (Dip HS) (30 Credit Points) (IQY Course 37001)
- Advanced Diploma in Humanities Studies (Adv Dip HS) (60 Credit Points) (IQY Course47001)
- Professional Diploma in Humanities Studies (Prof Dip HS) (120 Credit Points) (IQY Course 67001) which can be convertible to St Clements University/s Bachelor of Humanities Studies (BHS)
- Master of Humanities Studies (MHS) (St Clements University) (240 Credits)
- Professional Doctorate of Humanities Studies (DHS) (St Clements University) (360 Credits)

Diploma in Humanities Studies (Dip HS) (30 Credit Points)

Outcome-

On completion of this course, the candidates will be able to effectively provide humanities services needed by the community.

Course Structure

It consists of compulsory work-based unit and elective units

Compulsory

HS101- Humanitarian Work Record (15Points)

Presenting own diary of humanities work for minimum of three months or work reference

ELECTIVES

The following streams can be selected to complete Diploma in Humanities Studies

STREAM (1) -PEOPLE SERVICE STREAM (Select any one)

CERTIFICTE IN COMMUNITY SERVICE (MVTC205)

(FOODS SERVICE/HEALTH SERVICES/LIBRARY SERVICES/AGE CARE/CHILD CARE) (15 points)

CERTIFICATE IN PUBLIC SAFETY (MVTC208) (15 points)

CERTIFICATE IN AGRICULTURE FOOD PRODUCTION (MVTC201) (15 points)

STREAM (2)-COMMUNITY CONSTRUCTION STREAM

Select any one (15 points)

PC 1-Certificate in Bricklaying & Masonry

PC 2-Certificate in Plumbing

PC 3-Certificate in Building Construction

PC 4-Certificate in Gutter Construction

PC 5-Certificate in Fitting & Machining

PC 6-Certificate in Welding

PC 7-Certificate in Engine Operation & Basic Servicing

PC 8-Certificate in Air-conditioning & Refrigeration Basic Servicing

PC 9-Certificate in Electrical Wiring

PC 10-Certificate in Electrical Machine Winding

STREAM (3)- VOLUNTARY TEACHING STREAM

ED107 Theory of Education, Educational Technology & Teaching Practice
(15 Credits)

Advanced Diploma in Humanities Studies (Dip HS) (60 Credit Points)

Outcome

On completion of this course, the candidates will be able to effectively organize and manage the humanities services needed by the community.

Course Structure

It consists of credit transfer from Diploma in Humanities Studies, compulsory work-based unit and compulsory theory studies units.

Credit Transfer

Completion of Diploma in Humanities Studies (30 Credit Points)

Compulsory Work-based Unit

HS201-Humanitarian Organizing Work Record (5 points)

Presenting own diary of organizing humanities work or work reference in additional to minimum of 3 months humanitarian work experience.

Compulsory theory studies units.

The following management units need to be studied

Mgt 101 Management (5 points)

Mgt 201 Customer Service Management (Humanitarian Customer Service) (5 points)

Mgt 203 Inventory & Budget Management (Humanitarian Service Organization Budget Control) (5 points)

Mgt 208 Safety Management in Humanitarian Works-(5 Points)

Mgt 211 Leadership in Humanitarian Works (5 Points)

Professional Diploma in Humanities Studies (Dip HS) (120 Credit Points)

Outcome

On completion of this course, the candidates will be able to effectively set up the strategic tasks and judge the nature of humanities services needed by the community.

Course Structure

It consists of credit transfer from Advanced Diploma in Humanities Studies, compulsory self study unit compulsory theory studies units and a humanities project

Credit transfer

Completion of Diploma in Humanities Studies (60 Credit Points)

Compulsory self study unit

HS301-Professional Studies of Humanities (20 Credits)

It is an open unit. The student will need to study the literatures in Human Right, Democracy. History, Political Science, Philosophy, . They can read the books, online publications , attend the public talk, take part in online discussions etc and prepare a report on what they read, believe, accept on humanitarian issues.

They can freely present their views , comments and judgement.

The assessment will not be based on same or different views between student and assessor. It will only be based on how the student can do the study, what is accepted and believed and how well the arguments can be presented.

The report needs to include references sources as well and it can be written in any language. (For Myanmar, it can be written in Myanmar or English)

Compulsory theory studies

ED431-Critical Thinking (10 Credits)

Mgt 305 Quantitative Methods for Managers (10 Credits)

Mgt 306 Human Resources Management (10 Credits)

HS302- Humanities Work Project (10 Credits)

Humanities Project is to be written

The candidate needs to investigate the needs of the community and prepare the work plan to do the humanities project work such as building a school, digging the water well, disaster relief work.

They need to answer the questions regarding

- Why this task is important for the community
- Who will get the benefit
- What kinds of tasks need to be provided
- Who will do the job
- What materials , resources will be required
- How to provide the safety
- Time plan to complete the task
- Materials requirement and budgetary issues and how to raise the funding
- How to collaborate with local and other people / organizations
- How to assess the project completion
- How to determine the effectiveness and quality of the project outcome
- What lesson that you learnt from the project and conclusion

The project report needs to answer the above questions, record of project works, data, photos and references will need to be attached.

It should be 5 to 10 pages . Without community project but presentation of intensive portfolio 57001 Professional Diploma in Humanities Studies can be issued but to proceed to Masters , such project must be submitted for qualifying.

Bachelor of Humanities Studies (BHS) (St Clements University)

(Credit Transfer)

The graduates of Professional Diploma in Humanities Studies can pay degree registration fees and present the Professional Diploma in Humanities Studies to St Clements University's academic board to issue Bachelor of Humanities Studies (BHS)

Master of Humanities Studies (MHS) (St Clements University) (240 Credits)

Professional Doctorate of Humanities Studies (DHS) (St Clements University) (360 Credits)

The graduates of Bachelor of Humanities Studies (BHS) can continue the studies on research method and prepare a thesis to complete Master of Humanities Studies (MHS)

St Clements University will also guide the additional studies as required.

They can contribute the literatures in St Clements University's Academic Journal, present the seminars, write the dissertation, defend the dissertation to complete Professional Doctorate of Humanities Studies

Final Thesis for Master and Dissertation for Doctorate

HUM 601 Research Method

HUM 602 Thesis

HUM 601 Research Method

This course guides the student, step by step, through the research process, from problem selection through writing up results. It provides all of the basics necessary to complete a research project in any discipline.

Outline. The following aspects are reflected in this course:

What is research?

Tools of research

The problem: the heart of the research process

Review of the related literature

Planning your research design

Writing the research proposal

Qualitative research

Historical research

Descriptive research

Experimental and causal - comparative designs

Statistical techniques for analyzing quantitative data

Technical details: style, format, and organization of the research report

Masters Research Proposal

Synopsis: Research students are expected to present a written research proposal within three months after commencement. The proposal is handed in to the study leader.

Assessors of this proposal are selected by the faculty for their understanding of the field and the research involved. The purpose of a research is to set out a plan for conducting the research and writing the dissertation within the available time. It should take account of the availability and guidance of the study leader.

The starting point for a research proposal is the topic, which is the field of interest in which the research is to be carried out. In introducing the topic, the proposal should clarify the field that it falls into and the specific part that field which the research will explore.

It should clarify why the topic is of interest and importance, and how the proposed research will contribute to the filed of knowledge or profession. The proposal should clarify the research questions, ensuring that these are specific and answerable.

It is important to show how these questions relate to the topic are, and how they will advance the student's contribution. The proposal should detail the research to be carried out, and clarify the research methods, the timeframe and the reasons for selecting particular methods.

Where a period of literature review or research should precede any empirical research, this should be factored in as part of the research. It is important to estimate any periods of field research and to flag their duration and cost in your research proposal.

HUM 602 Thesis

Humanities Studies Thesis for Masters and Dissertation for Doctorate

Candidates need to complete a 60000-words dissertation (in Myanmar or English) and a 3000-words executive portfolio (in English).

This program requires the candidates to complete a thesis as part of the assessment for the Master of Humanities Studies degree and a dissertation for Doctor of Humanities Studies.

Doing a thesis / dissertation means that instead of knowledge and information being presented and following a prescribed route for answering questions, candidates are thrust into an active role of managing an investigation into a topic area. This means researching and discovering things for themselves.

They will have to set their own targets and parameters, pose their own central research questions and decide on the appropriate sources of information to support the research. It therefore requires the use of the higher-level cognitive skills of analysis, synthesis and evaluation. Candidates may choose an area of particular interest to them within the scope of course title.

Doctoral dissertation

A dissertation is an individual effort and the candidate, academic tutor and the course professor will work together on constructing an approved topic (research question) and methodologies.

Humanities Dissertation Defence for doctorate

It is expected of Doctoral candidates to defend their thesis by means of a colloquium (academic discussion). The purpose of the meeting is for the candidates to convince a panel of experts in the

field of the dissertation how well they have done in the conducting of their research study and the preparation of their dissertation

Candidates need to complete all course assessments with the results of Grade B+ or above.

မြန်မာနိုင်ငံပညာရှင်အင်ဂျင်နီယာအဖွဲ့ ချုပ်

The Institution of Professional Engineers Myanmar (IPEM)

Member of International Federation of Engineering Education Societies (IFEES)

AGTI to BE Conversion Program

AGTI အောင်မြင်ကာအင်ဂျင်နီယာလုပ်ငန်းအတွေ့ အကြုံ (၇)နှစ်ရှိပြီး BE နှင့်အဆင့်တူအင်ဂျင်နီယာပညာကိုသင်တန်းတက်၍ဖြစ်စေ၊ကိုယ်တိုင်လေ့လာမှု၊ လုပ်ငန်းခွင်လက်တွေ့ လုပ်ဆောင်မှုအထောက်အထားတို့ ကိုစီစစ်ကာ BE ဘွဲ့ နှင့်တူ ညီသော ပညာအဆင့်ရှိသည်ဟုသတ်မှတ်ကာ မြန်မာနိုင်ငံအင်ဂျင်နီယာအဖွဲ့ ချုပ်နှင့်ပူးပေါင်းဆောင် ရွက်နေသောတက္ကသိုလ်များ၏ BE ဘွဲ့ ပေါင်းကူးအစီအစဉ်များပြုလုပ်မည့်အစီအစဉ်ကို မြန်မာနိုင်ငံပညာရှင်အင်ဂျင်နီယာအဖွဲ့ ချုပ်ကပြုလုပ်ပါမည်။

AGTI ကို၂နှစ်တက်ရောက်ပြီးစီးသူများသည် ဘွဲ့ အဆင့်ညီ Singapore Institute of Engineering Technologists အသိအမှတ်ပြု Professional Diploma in Engineering ကို IQY Technical College တွင်ကိုယ်တိုင်သို့ မဟုတ် Online မှတက်ရောက်ပြီးစီးကာ STC Technological University (International Engineering) သို့ မဟုတ် St Clements University သို့ မဟုတ် အဆိုပါတက္ကသိုလ်၂ခုနှင့် IQY Technical College ပူးပေါင်းအစီအစဉ်မှ BE ဘွဲ့ ကိုရယူရမည်ဖြစ်သည်။

AGTI ကို၃နှစ်တက်ရောက်ပြီးစီးသူများသည်ယခင်ခေတ် AGTI ကိုColumbo Plan Curriculum ဖြင့်သင်ကြားပြီးစီးခဲ့ပြီးယခင်AGTI အင်ဂျင်နီယာများသည်စာတွေ့ လက်တွေ့ ၌မြန်မာနိုင်ငံတွင်သာ မကနိုင်ငံတကာတွင်အင်ဂျင်နီယာလုပ်ငန်းတို့ ကိုတာဝန်ယူလုပ်ဆောင်နေသည့်အပြင်အင်ဂျင်နီ ယာပညာကိုလက်တွေ့ အသုံးချမှုတွင်နောင်လာနောက်သား BE အင်ဂျင်နီယာတို့ ကိုသင်ကြား နိုင်သောကြောင့်ထိုသူတို့ ၏ပညာ၊အတွေ့ အကြုံနှင့်ကျွမ်းကျင်မှုတို့ ကိုစံနစ်ထကျမှတ်တမ်းပြု Academic Credit ပေးကာBE အဆင့်ပညာကို Seminar Workshop များစီစဉ်ပို့ ချပြီး Online Resources များLesson Video များကိုဖြန့်ဝေကာ BE အဆင့်ညီ Singapore Institute of Engineering Technologists အသိအမှတ်ပြု Professional Diploma in Engineering ကို IQY Technical College

မှပေးပြီး STC Technological University (International Engineering) သို့ မဟုတ် St Clements University သို့ မဟုတ် အဆိုပါတက္ကသိုလ်၂ခုနှင့်IQY Technical College ပူးပေါင်းအစီအစဉ်မှ BE ဘွဲ့ ကိုရယူရမည်ဖြစ်သည်။

အစီအစဉ်တွင်ပါဝင်သောဘာသာများ

BE ဘွဲ့ အတွက်လိုအပ်သော(၁၂၀) Credit Point အတွက်အောက်ပါအတိုင်းစီစဉ်မည်။

ENG601- Engineering Studies

AGTI Certificate (60 Credits)

AGTI လက်မှတ် (ပုံပါအတိုင်းကိုတင်ပြရန်) Notary Certified Copy

ENG602-Engineering Applications

Work Experience Curriculum Vitae (10 Credits)

ကိုယ်ရေးရာဇဝင်တင်ပြရန်

ENG603-Engineering Practicals

Engineering Practice Report or Experience Portfolio (10 Credits)

အောက်ပါအတိုင်းအင်ဂျင်နီယာကျွမ်းကျင်မှုအစီရင်ခံစာရေးသားတင်ပြရန်

(သို့ မဟုတ်)

RSE အတွက်ရေးထားသောအစီရင်ခံစာတင်ရန်

(သို့ မဟုတ်)

RSE လက်မှတ် (Current or Expired) တင်ပြရန်

(သို့ မဟုတ်)

စည်ပင်သာယာမှထုတ်ပေးခဲ့သောလိုင်စင်များ(မည်သည့်တိုင်းဒေသမှမဆို) (Current or Expired) တင်ပြရန်

(သို့ မဟုတ်)

မိမိလုပ်ခဲ့သောအလုပ်များမှ Project တစ်ခုအတွက် Drawing/ Estimate/ Quantity/ Survey/Workplan/ Photo တို့ ကိုတင်ပြရန်။

BAE705 Engineering Competency Development (10 Credits)

အခြားဘွဲ့ များအပါအဝင်ပြည်တွင်း(သို့မဟုတ်)ပြည်ပတွင်တက်ခဲ့သောအင်ဂျင်နီ

ယာသင်တန်းလက်မှတ်များတင်ပြရန် (သို့မဟုတ်) မိမိဖတ်ရှုခဲ့သောအင်ဂျင်နီယာစာအုပ်များ၏

လေ့လာမှုမှတ်တမ်းတင်ပြရန်(သို့မဟုတ်) ပြည်တွင်း(သို့မဟုတ်)ပြည်ပတွင်တက်ခဲ့သောအင်ဂျင်နီ
ယာသင်တန်းစာရင်းတင်ပြရန်။

Degree Level Study -Engineering Mathematics+Materials+Mechanic Seminars (4 days)

အောက်ပါဘာသာရပ်များပါဝင်သောလေးရက် **Seminar/Workshop** တက်ရန် Online

Resources များLesson Video များကိုရယူရန်။

- BAE401 Engineering Mathematics
- BAE402 Calculus
- RE010 Engineering Materials
- BAE403 Engineering Mechanics (10 Credits)

Degree Level Study -Engineering Management Seminars (2 days)

အောက်ပါဘာသာရပ်များပါဝင်သောလေးရက် **Seminar/Workshop** တက်ရန် Online

Resources များLesson Video များကိုရယူရန်။

- BAE508 Management
- BAE605 Engineering Management (10 Credits)

Degree Level Study -Engineering Subjects Seminars (4 days)

အောက်ပါဘာသာရပ်များပါဝင်သောလေးရက် **Seminar/Workshop** တက်ရန် Online

Resources များLesson Video များကိုရယူရန်။

3 or 4 subjects at BE Final Level (10 Credits)

Electrical Power

BAE 501 Advanced Power Systems & Power Transmission Networks

BAE 506 Power System Stability & Protection

RE013-Electrical Machines

Electronics

RE014-Electronics Control

BAE 604 Telecommunication Engineering

BAE 601 Computer Programming

Or other subjects by discussing with trainer

Civil

BAE621 Structural Engineering

BAE421 Building Construction Engineering

BAE623 Surveying & Traffic Engineering

Or other subjects by discussing with trainer

Mechanical

BAE613 Mechanical Instrumentation Process

BAE311 Plant Engineering

BAE614 Machine Design

Or other subjects by discussing with trainer

ICT

ICT 403 Professional Programming

ICT 405 Professional Practice (1) Network

BAE408 Analog & Digital Electronics

Or other subjects by discussing with trainer

အားလုံးပြီးစီးပါက **120 Credit Points** ရရှိကာ Professional Diploma/ BE ပြီးစီးမည်။

သင်တန်းကြေး

သင်တန်းကြေးကို IPEM/ IQY/GGO Group တို့ ကတိုင်ပင်သတ်မှတ်မည်။

သင်တန်းနေရာ

IPEM ဌါနချုပ်-

IQY Technical College အမှတ်၃၀၇(ခ)သူရ(၂)လမ်းဧရပ်ကွက်၊တောင်ဥက္ကလာပမြို့ နယ် ၊ရန်ကုန်မြို့ ။

IPEMအဖွဲ့ ဝင်များဌါနခွဲ-

GGO Group Training အမှတ်၇၆(က)၄လွှာ၊သြဘာလမ်း၊သီတာလမ်းမှတ်တိုင်၊ကျောက်မြောင်း တာမွေမြို့ နယ်၊ ၊ရန်ကုန်မြို့ ။

စုံစမ်းစာရင်းသွင်းရန်

Training Officer (Academic)-Dr Thwin Thu Lynn (IQY)- Ph-09785048872

Training Officer (Industrial Practice)- U Khin Nyo (GGO)-Ph- 095053934

Membership Officer- Daw Myat Thiri Htun-(GGO Training Group)

Ph (09) 953212652 / (09) 448000359/(09) 794297704/(09) 264038762

EC Member- U Myint Kyaw 095004627

AGTI

3 Years Attendance

ENG601- Engineering Studies
AGTI Certificate (60 Credits)

ENG602-Engineering Applications
Work Experience Curriculum Vitae (10 Credits)

ENG603-Engineering Practicals
Engineering Practice Report or Experience Portfolio (10 Credits)

BAE705 Engineering Competency Development
Other degree OR Appropriate Self Study Record
Continuing Professional Development
(10 Credits)

Degree Level Study -Engineering Mathematics+Materials+Mechanic Seminars (4 days)
BAE401 Engineering Mathematics
BAE402 Calculus
RE010 Engineering Materials
BAE403 Engineering Mechanics (10 Credits)

Degree Level Study -Engineering Management Seminars (2 days)
BAE508 Management
BAE605 Engineering Management (10 Credits)

Degree Level Study -Engineering Subjects Seminars (4 days)

3 or 4 subjects at BE Final Level (10 Credits)

Total 120 Credits

Degree Level Study -Engineering Subjects Seminars (4 days)

Electrical Power

BAE 501 Advanced Power Systems & Power Transmission Networks

BAE 506 Power System Stability & Protection

RE013-Electrical Machines

Electronics

RE014-Electronics Control

BAE 604 Telecommunication Engineering

BAE 601 Computer Programming

Or other subjects by discussing with trainer

Civil

BAE621 Structural Engineering

BAE421 Building Construction Engineering

BAE623 Surveying & Traffic Engineering

Or other subjects by discussing with trainer

Mechanical

BAE613 Mechanical Instrumentation Process

BAE311 Plant Engineering

BAE614 Machine Design

Or other subjects by discussing with trainer

ICT

ICT 403 Professional Programming

ICT 405 Professional Practice (1) Network

BAE408 Analog & Digital Electronics

Or other subjects by discussing with trainer

Contact

Secretary + Training Officer (Academic)-Dr Thwin Thu Lynn (IQY)- Ph-09785048872

2 Years Attendance

Enrol IQY Professional Diploma in Engineering
Final Stage

http://www.iqytechnicalcollege.com/enrolment.htm

THS/GTI-Equivalent /BE Bridging Program Enrolment

IQY Technical College

International Engineering

Professional Diploma in Structural Engineering/ MSc (Structure)

Course Code 67553/7776654)

Recognised by Singapore Institute of Engineering Technologists/ The Society of Professional Engineers (UK and International) St Clements University/ STC Technological University/

The Institution of Professional Engineers Myanmar, a Member of International Federation of Engineering Education Societies –IFEES-USA)

Total Training Fees
To be advised

Training Period – 6 Months
Main Office

No 704 Myitta Street, 12 Ward , South Okkalapa, Yangon

Phone – **Australia 61-424533344**
Myanmar 09795579609 , 09420208590, 09893974117

Email – iqytechnicalcollege@gmail.com

Subjects

CE113+CE114 Theory of Structure

BAE404 Engineering Materials& Strength of Materials

BAE 403 Engineering Mechanics

RE010-Engineering Materials

BAE621A Structural Engineering

BAE621SB Structural Engineering (Civil) (Part 2-Structural Analysis)

BAE424 Reinforced Concrete

How to apply?

Call us – **09795579609 , 09420208590, 09893974117**

IQY Technical College

International Engineering

Professional Diploma in Civil Engineering with Quantity Surveying

(67110A/Q)

Recognised by Singapore Institute of Engineering Technologists/ The Society of Professional Engineers (UK and International) St Clements University/ STC Technological University/

The Institution of Professional Engineers Myanmar, a Member of International Federation of Engineering Education Societies –IFEES-USA)

Total Training Fees
To be advised

Training Period – 6 Months
Main Office

No 704 Myitta Street, 12 Ward , South Okkalapa, Yangon

Phone – **Australia 61-424533344**
Myanmar 09795579609 , 09420208590, 09893974117

Email – iqytechnicalcollege@gmail.com

Subjects

BAE422 Estimating

CE115 Construction Estimating

ADEMC202-Engineering Practice
BAE644 Advanced Estimating

BAE 690 Mechanical Estimating

How to apply?

Call us – **09795579609 , 09420208590, 09893974117**

IQY Technical College

International Engineering

Professional Diploma in Engineering and Management/ Bachelor of Engineering Management (66213)

Recognised by Singapore Institute of Engineering Technologists/ The Society of Professional Engineers (UK and International) St Clements University/ STC Technological University/

The Institution of Professional Engineers Myanmar, a Member of International Federation of Engineering Education Societies –IFEES-USA)

http://www.iqytechnicalcollege.com/ProfDipMechEnggMgtOutline.pdf

Total Training Fees
To be advised

Training Period – 6 Months
Main Office

No 704 Myitta Street, 12 Ward , South Okkalapa, Yangon

Phone – **Australia 61-424533344**
Myanmar 09795579609 , 09420208590, 09893974117

Email – iqytechnicalcollege@gmail.com

Subjects

BAE421 Building Construction Engineering
BAE422 Estimating
BAE424 Reinforced Concrete
BAE522 Rock Mechanics
BAE621 Structural Engineering
BAE624 Water Supply , Sanitation & Finishin

Mgt 101 Management
Mgt 102 Performance Management
Mgt 103 Operation Management +Mgt 107 Industrial Risk Assessment
ICT 104 Mgt 104 Program Project +BAE 508 Project Management

Mgt 208 Safety Management
Mgt 209 Risk Management

The following study link is to be added

www.iqytechnicalcollege.com/safety.htm

How to apply?

Call us – **09795579609 , 09420208590, 09893974117**

IQY Technical College Masters Degree Programs

Myanmar Version _____ English Version List of EE/CE/ME/RE/ICT Subjects

IQY Technical College သည် STC Technological University/ St Clements University/ IPEM Technological University များ၏ Masters Degree များကို Engineering, Information Technology, Management, Humanities, Education လေ့လာမှုများအတွက်လည်းသင်ပါသည်။

Masters Degree in Engineering ကိုအောက်ပါအစီအစဉ်၃ခုခွဲထားပါသည်။

1. Master of Engineering Practice
2. Master of Engineering Science
3. Master of Engineering

Master of Engineering Practice သည်အလုပ်အတွေ့ အကြုံရှိအင်ဂျင်နီယာများအတွက်ဖြစ်သည်။ IQY Year 4 Professional Diploma/BE ပြီးသူများအတွက်ဘွဲ့ ရအင်ဂျင်နီယာလေ့ကျင့်ရေး (Year 5/6 Graduate Engineer Training) တွင်ပါဝင်သောဘာသာများကိုလည်းထဲ့သွင်းထားသည်။

Electrical/Civil/Mechanical /Renewable Energy သာမကအခြားလိုင်းများအတွက်လည်းသင်သည်။

Course Work 8 Subjects (Graduate Diploma in Engineering Practice) + Project (BAE709) (For Master of Engineering Practice) ပြီးရန်လိုသည်။

Self study online program ဖြစ်ပြီး Assignment/ Project /Study Report/ Analysis/ Experience Presentation/ Design Works /Job Record Presentation စသည်တို့ ကိုအဓိကထားသည်။

Master of Engineering Practice ပြီးသူတို့သည် 5 Years Experience ရှိပါက The Society of Professional Engineers (UK and International) ၏ Member (MSPE-UK & International) နှင့် Professional Engineer (UK and International) (PEng(UK and International)) လျှောက်နိုင်သည်။

Master of Engineering Practice is for experienced engineers . It will include the following subjects of 10 credits each

- BAE 701 Engineering Fundamental
- BAE 702 Engineering Management
- BAE 703 Leadership & Human Resources Management
- BAE 704 Risk Management & Industrial Safety

- BAE 705 Engineering Competency Development
- BAE 706 Engineering Report Writing
- BAE 707 Engineering Ethics
- BAE 708 Engineering Knowledge

Completion of the above subjects will earn Graduate Diploma in Engineering Practice (80 credits at Masters level +120 Credits for Bachelors degree level total 200 credits. Completion of two or more units can earn Graduate Certificate in Engineering.

The candidate will need to do BAE 709 Engineering Design Project of 40 credits to complete Master of Engineering Practice of 240 credits.

Master of Engineering Science/Master of Engineering

သည် ကျောင်းဆင်းစ BE များ၊အလုပ်အတွေ့ အကြုံမရှိသေးသောအင်ဂျင်နီယာများ အတွက် ဖြစ်သည်။ Electrical, Civil. Mechanical အတွက် 24 Subjects ၊အခြားလိုင်းများအတွက်သင်

ရိုးပါအတိုင်းပြီးစီးက Master of Engineering Science ရမည်။ထို့ နောက် Thesis (BAE709A)

ပြီးစီးက Master of Engineering ရမည်။

Self study online program ဖြစ်ပြီးပျမ်းမျှတစ်လလျှင်တစ်ဘာသာနှုန်းဖြင့် 20 pages လေ့လာမှု

အစီရင်ခံစာကိုဘာသာတိုင်းအတွက်ရေးသားတင်ပြရမည်။

လေ့လာမှုအစီရင်ခံစာတွင်အောက်ပါတို့ ပါဝင်ရမည်။

- နေ့ စွဲ၊လေ့လာသောအခန်းများ၊
- အဓိကအချက်များ၊အခြေခံသဘောတရား၊ဆက်စပ်မှုများ၊ညီမျှခြင်း၊ဖေါ်မြူလာ၊ပုံများ၊
- လက်တွေ့ သုံးခြင်းများ၊
- Powerpoint ပုံစံတင်ပြသောအနှစ်ချုပ်မှတ်စုများ။
- ကိုယ်ပိုင်ထင်မြင်ယူဆသုံးသပ်ချက်များ။

There are 24 units in Masters Program, the candidate will need to complete one unit per month so that the whole program will be completed within 24 months. (120 credits at Masters level and 120 Credits for Bachelors degree total 240 credits) to complete Master of Engineering Science, then submit the thesis to complete Master of Engineering.

Completion of the 12 subjects will earn Graduate Diploma in Engineering Practice (60 credits at Masters level +120 Credits for Bachelors degree level total 180 credits. Completion of two or more units can earn Graduate Certificate in Engineering.

ELECTRICAL

Part 1 Course Work

Any 24 subjects can be selected .

(1) BAE 658-Real-time Systems

(2) BAE 665-Fabrication Engineering at the Micro and Nanoscale

(3) BAE 655-Wireless Communications.

(3A) BAE 671-Satellite Communications and Navigation Systems

(4) BAE 665-Embedded Digital Signal Processing Systems

(5)BAE 657-Advanced Electromagnetics Applications

(6)BAE 676-Failure Analysis

(7)BAE 673-Frequency Stability

(8) MEE11-High Speed A-D Converters

(9) MEE2-Advanced Electric Power Engineering

MEE9-Handbook of Power System Engineering-.pdf (11.57MB)
(10)MEE12-Iterative Learning Control

(11) BAE 664-Distributed Generation in Power System

(12) BAE 675-Nanoelectronics

(13) MEE1-Electric Distribution Systems

(14) BAE 674-Intelligent Systems

(15) MEE13-Non linear control

(16) BAE 656-Advanced Digital Signal Processing and Noise Reduction
(17) BAE 677-Photovoltaic Systems

(18) BAE 660-Control Engineering

(19) BAE 659-Computer-aided Control Systems

(20) MEE7-EMI Filter Design

(21) BAE 661-Design of Electrical Services for Buildings

(22) BAE 670-Power System Engineering

(23) MEE10-High Performance Control of AC Drives

(24) BAE 667-Industrial Control System

(25) MEE14-System Engineering Concepts

(26) MEE6-Electronics+Power Electronics+Opto Electronics+Microwave+Radar

(27) BAE 666-Generating Electricity in a Carbon Constrained World

(28) BAE 669-Power Electronics and Instrumentation Engineering

(29) BAE 663-Advanced Digital Electronics

(30)MEE8-Flexible Power Transmission

(31) BAE 668-Photonics

(32) MEE3-Electric Power Transmission System Engineering

(33) BAE 672-Industrial& System Engineering

(34) MEE5-Electro Optics

(35) MEE4-Electricity Power Generation

(36) BAE 662-Design of Rotating Electrical Machines

Part 2 Thesis

BAE709A Master of Engineering Thesis

CIVIL

Part 1 Course Work

All 24 subjects must be completed.

(1) BAE 654-Theory & Design of Bridges

(2)BAE 653-Surveying

(3) BAE 652-Structural Analysis

(4) BAE 649-Soil & Rock Mechanic

(5)BAE 651-Strom & Waste Water

(6) BAE 650-Steel Design.pdf

(7) BAE 648-Railways Bridges

(8)BAE 646 Highway Engineering

(9) BAE 647-Piling Engineering

(10) BAE 645-Geotechnics

(11) BAE 642-Design of Reinforce Concrete

(12) BAE 644-Estimating

(13) BAE 643-Earthquake Resistant Structure

(14) BAE 638-Construction Drawing

(15)BAE 641-Construction Site Planning

(16) BAE 640-Construction Mathematics.

(17) BAE 639-Construction Materials

(18) BAE 634-Building Construction

(19) BAE 637-Composite Structure of Steel & Concrete

(20) BAE 636-Building Technology Electrical Mechanical System

(21) BAE 635-Building Survey

(22) BAE 633-Bridge Construction

(23) BAE 632-Architectural Design

(24) BAE 631-Advanced Concrete Technology

Part 2 Thesis

BAE709A Master of Engineering Thesis

MECHANICAL

Part 1 Course Work

Any 24 subjects to be completed.

(1) BAE 694-Control Engineering

(2) BAE 682-Assembly Automation & Product Design

(3) BAE 688-Manufacturing & Management.

(4) BAE 692-Metallurgy

(5) BAE 689A-Mechanical Design

(6) BAE 686-Electro-Mechanical Manufacturing Process

(7) BAE 683-Material engineering

(8) BAE 693-Piping System

(9) BAE 689B-Mechanical Design

(10) BAE 625- Structural Engineering Mechanics

(11) BAE 696-Specification Development

(12) BAE 698-Thermal Engineering

(13) BAE 699-Rotating Machinery Vibration

(14) BAE 678A-Machine Design

(15) BAE 684-Computerised Engine Control

(16) BAE 678B-Machine Design

(17) BAE 685-Electric Vehicle Technology

(18) BAE 695-Random Vibration

(19) BAE 691-Mechatronics

(20) BAE 680-Quality Control

(21) BAE 690-Mechanical Estimating

(22) BAE 679- Materials Science

(23) BAE 681- Welding Engineering.

(24) BAE 679-Composite Materials & Joining Technology

(25) BAE 687-Lasers in Manufacturing

(26) BAE 697-Structural Foundation Design

Part 2 Thesis

BAE709A Master of Engineering Thesis

RENEWABLE ENERGY

Part 1 Course Work

The following 10 subjects to be completed.

Each 10 credits and total 100 credits to get Graduate Diploma

(1) RE511- Sustaining Earth Energy resources

(2) RE510- Water Conservation

(3) RE509- Applied Photovoltaics

(4) RE508- Solar Hydrogen Energy System

(5) RE507- Offshore Wind Turbines Part 1

RE507- Offshore Wind Turbines Part 2

(6) RE505- Green Building Design

(7) RE504- Engineering Solution for Sustainability

(8) RE503- Energy Management in Industrial and Commercial Facilities

(9) RE502- Biomass Gasification

(10) RE 501-Control of Solar Energy System

INFORMATION TECHNOLOGY

Part 1 Course Work

The following 8 subjects to be completed
Each 10 credits, total 80 credits to complete Graduate Diploma

(1) Programming (ICT 601)

(2) E-Commerce (ICT 602)

(3) Multimedia Systems (ICT 604)

(4) Database Systems(ICT 502)

(5) Applied Computing I (ICT 505)

(6) Applied Computing (ICT 506)

(7) Software Engineering (ICT 603).zip (90.71MB)

The following two Electrical (Computer) subjects must be completed
Each 5 credits. Two combined units 10 credits

(8) BAE658 Real Time Systems + BAE 674 Intelligent Systems

BAE 658-Real-time Systems

BAE 674-Intelligent Systems

Part 2 Thesis

BAE709B Master of Applied Science (Information Technology) Thesis

ENGLISH VERSION

(1) Master of Engineering Practice (240 credits, 120 credits for BE degree)

Master of Engineering Practice is for experienced engineers . It will include the following subjects of 10 credits each

- BAE 701 Engineering Fundamental
- BAE 702 Engineering Management
- BAE 703 Leadership & Human Resources Management
- BAE 704 Risk Management & Industrial Safety
- BAE 705 Engineering Competency Development
- BAE 706 Engineering Report Writing
- BAE 707 Engineering Ethics
- BAE 708 Engineering Knowledge

Completion of the above subjects will earn Graduate Diploma in Engineering Practice (80 credits at Masters level +120 Credits for Bachelors degree level total 200 credits. Completion of two or more units can earn Graduate Certificate in Engineering.

The candidate will need to do Engineering Design Project of 40 credits to complete Master of Engineering Practice of 240 credits

(2) Master of Engineering (240 credits, 120 credits for BE degree)

Masters of Engineering program is for recent graduates who have completed their BE degrees.

It will include the following 24 subjects of 5 credits each

The students will have to write 20 pages study progress report for each of the subjects outlined below.

The report needs to include

- Date and chapters that the candidate reads (The student will need to read the book
- at least 4 days per week)

- Highlight the key concepts, key formula, key theory & practical application concepts .

- Notes of the topic that you read.

- Key diagrams, formula, problem solutions

- Powerpoint slides to express the key topics

There are 24 units in Masters Program, the candidate will need to complete one unit per month so that the whole program will be completed within 24 months. (120 credits at Masters level and 120 Credits for Bachelors degree total 240 credits) to complete Master of Engineering Science, then submit the thesis to complete Master of Engineering.

Completion of the 12 subjects will earn Graduate Diploma in Engineering Practice (60 credits at Masters level +120 Credits for Bachelors degree level total 180 credits. Completion of two or more units can earn Graduate Certificate in Engineering.

LIST OF SUBJECTS

Please see above

Diploma in Doctorate Studies (DDS)

IQY Diploma in Doctorate Studies is an academic award consisting of Research Studies and Writing Thesis Dissertation at 360 Credit points in which 240 Credit points are allocated for Masters Degree level academic qualifications and / or comparable professional experiences.

The candidates who have completed MAE 601 Research Method (30 Points)

and their thesis proposal are accepted will be awarded IQY Master Diploma in Research Studies (270 Credit Points).

The candidates who have completed MAE602 Thesis (30 Points) but have not submitted it to St Clements University will be awarded IQY Diploma in Doctorate Studies (300 Credit Points)

Only St Clements University will confer the Doctoral Degree while IQY Technical College will provide the facilitation and successful candidates will be issued with BAE801 Thesis Dissertation Assessment and Defence (60 Points) when the success is notified by St Clements University.

In the case of failure to meet the quality of dissertation, St Clements University's Diploma in Doctorate Studies or other relevant award can be issued and Doctorate degree award fees will not be charged.

IQY Technical College will issue Letter of Congratulation for having been successful in PhD.

Doctoral Research Studies

IQY Master Diploma in Research Studies

http://www.highlightcomputer.com/iQYDDS.pdf

Dissertation for Doctorate

MAE 601 Research Method (30 Points)

MAE602 Thesis (30 Points)

http://www.filefactory.com/file/1l1r1k0ftawt/n/11.Research+Thesis_(ICT_605).zip

BAE801 Thesis Dissertation Assessment and Defence (60 Points)

MAE601 Research Method

This course guides the student, step by step, through the research process, from problem selection through writing up results. It provides all of the basics necessary to complete a research project in any discipline.

Outline. The following aspects are reflected in this course:

What is research?

Tools of research

The problem: the heart of the research process

Review of the related literature

Planning your research design

Writing the research proposal

Qualitative research

Historical research

Descriptive research

Experimental and causal - comparative designs

Statistical techniques for analyzing quantitative data

Technical details: style, format, and organization of the research report

Doctoral Research Proposal

Synopsis: Research students are expected to present a written research proposal within three months after commencement. The proposal is handed in to the study leader.

Assessors of this proposal are selected by the faculty for their understanding of the field and the research involved. The purpose of a research is to set out a plan for conducting the research and writing the dissertation within the available time. It should take account of the availability and guidance of the study leader.

The starting point for a research proposal is the topic, which is the field of interest in which the research is to be carried out. In introducing the topic, the proposal should clarify the field that it falls into and the specific part that field which the research will explore.

It should clarify why the topic is of interest and importance, and how the proposed research will contribute to the filed of knowledge or profession. The proposal should clarify the research questions, ensuring that these are specific and answerable.

It is important to show how these questions relate to the topic are, and how they will advance the student's contribution. The proposal should detail the research to be carried out, and clarify the research methods, the timeframe and the reasons for selecting particular methods.

Where a period of literature review or research should precede any empirical research, this should be factored in as part of the research. It is important to estimate any periods of field research and to flag their duration and cost in your research proposal.

MAE 602 Thesis

Thesis Dissertation for Doctorate

Candidates need to complete a 60000-words dissertation (in Myanmar or English) and a 3000-words executive portfolio (in English).

This program requires the candidates to complete a thesis as part of the assessment for the Doctorate

Doing a thesis / dissertation means that instead of knowledge and information being presented and following a prescribed route for answering questions, candidates are thrust into an active role of managing an investigation into a topic area. This means researching and

discovering things for themselves.

They will have to set their own targets and parameters, pose their own central research questions and decide on the appropriate sources of information to support the research. It therefore requires the use of the higher-level cognitive skills of analysis, synthesis and evaluation. Candidates may choose an area of particular interest to them within the scope of course title.

BAE801 Thesis Dissertation Assessment and Defence (60 Points)

Doctoral dissertation

A dissertation is an individual effort and the candidate, academic tutor and the course professor will work together on constructing an approved topic (research question) and methodologies.

Dissertation Defence for doctorate

It is expected of Doctoral candidates to defend their thesis by means of a colloquium (academic discussion). The purpose of the meeting is for the candidates to convince a panel of experts in the field of the dissertation how well they have done in the conducting of their research study and the preparation of their dissertation

Candidates need to complete all course assessments with the results of Grade B+ or above.

IQY-GGO Group Practical Training Advertisement

IQY Technical College နှင့် GGO Group တို့ ပူးပေါင်း၍အင်ဂျင်နီယာလက်တွေ့ လုပ်ငန်းများကို Site များတွင်လေ့ကျင့်သင်ကြားပေးမည်။

လက်တွေ့ နှင့်သက်ဆိုင်သောစာများကို IQY Technical College မှကိုယ်တိုင်တက်နှင့် Online စံနစ်ဖြင့်သင်ပေးပြီး GGO Group မှကျွမ်းကျင်သူများ၊အင်ဂျင်နီယာများက Site များတွင်လေ့ကျင့်သင်ကြားပေးမည်။

ကျွမ်းကျင်လုပ်သားအဆင့်-Electrical/ Civil/ Construction/ Mechanical/ Telecommunication

လက်တွေ့ များအတွက် Diploma in Engineering Trades Practice၊

နည်းပညာရှင်အဆင့်- Electrical/ Civil/ Construction/ Mechanical/ Telecommunication

လက်တွေ့ များအတွက် Advanced Diploma in Engineering Trades Practice၊

အင်ဂျင်နီယာအဆင့်- Electrical/ Civil/ Construction/ Mechanical/ Telecommunication

လက်တွေ့ များအတွက် Professional Diploma in Engineering Internship တို့ ကို Australian Training System ကိုအသုံးပြုလေ့ကျင့်ပြီး IQY Technical College မှ Singapore Institute of Engineering Technologists အသိအမှတ်ပြု Engineering Diploma များထုတ်ပေးမည်။

စာရင်းသွင်းရန်- https://www.emailmeform.com/builder/form/b0LQY1DCa753FP

(သို့ မဟုတ်)

www.iqytechnicalcollege.com

ENROLMENT

All Enrolments for degrees & diplomas in Engineering/IT/Management

INTERNSHIP APPLICATION FORM

- Diploma in Engineering Trades Practice
- Advanced Diploma in Engineering Trades Practice
- Professional Diploma in Engineering Internship (Only for BE/BTech degree holders)

တစ်ခုခုကိုရွေးပါ။

www.highlightcomputer.com/iqydownloadcentre.htm

To download the resources

Master of Management

Master of Science (Information Technology)

Master of Engineering (Electrical/ Mechanical/Civil)

Associate Degree in Applied Engineering (Renewable Energy)

Bachelor of Engineering (Mechanical/ Civil)/ Graduate Diploma in Engineering Practice (Mechanical/ Civil) E-Learning Lectures

Master of Science (Renewable Energy Engineering)

Master of Management

PART (1) Course Work in Graduate Diploma Level

Graduate Diploma in Management (8 units)

Mgt 501 Organizational Change Management
http://www.filefactory.com/file/533vd95iza7r/n/Org_ChangeBSBINN601B_zip

Mgt 502 Strategic Plans Development & Implementation
http://www.filefactory.com/file/6vvp1s08r96t/n/Strategic_Plan_BSBMGT616A_zip

Mgt 503 Leadership in Organization
http://www.filefactory.com/file/4nom2gy4log1/Leadership_BSBMGT605B.zip

Mgt 504 Innovation & Continuous Improvement
http://www.filefactory.com/file/urb0nz8vscb/Continuous_ImprovementBSBMGT608C.zip

Mgt 505 Risk Management
http://www.filefactory.com/file/5w8ibltoojh3/n/Risk_Mgt_BSBRSK501B_zip

Mgt 506 Knowledge & Information Management

http://www.filefactory.com/file/7w56nwtcbvd/Knowledge_InformationBSBINM601A.zip

Mgt 507 Human Resources Management & Strategic Planning
http://www.filefactory.com/file/6cto7fpu8gzt/HRM_Strategic_Plan_BSBHRM602B.zip

Mgt 508 Employee Relations Management
http://www.filefactory.com/file/6ac2hny11b2h/Employee_Relations_BSBHRM604A.zip

Master_Of_Management_(5 units)

All Graduate Diploma Subjects PLUS

PART (2) Project/ Thesis at Masters Level

Mgt 601 Logistics Management

http://www.filefactory.com/file/2rymlmdo1rhv/n/LogiHand.pdf

Mgt 602 Project Management
http://www.filefactory.com/file/7hiw5dp5n5sx/Project%20Management%20Rory%20Burke.pdf

Mgt 603 Financial Management
http://www.filefactory.com/file/4tnxja4w7t7t/Financial%20Mgt.zip

PLUS
Res 601 Research Methods

http://www.filefactory.com/file/6lg3tnznw3ev/Educational%20Research.pdf
PLUS

Mgt 604 Thesis

http://www.filefactory.com/file/54ncuqwqm2iv/Final%20Thesis.rtf

Master of Management Assignment Guide.pdf

http://www.filefactory.com/file/1ns7i1aymg65/n/Master_of_Management_Assignment_Guide.pdf

Master of Science (Information) Technology

PART (1) Course Work in Graduate Diploma Level

ICT501Programming in Visual C++

http://www.filefactory.com/file/2cbdkwyico99/n/1._Programming_in_Visual_C++_(ICT501).zip

ICT 502Database Systems

http://www.filefactory.com/file/4cbqp0dk6lkd/n/2._Database_Systems(ICT_502).zip

ICT 503 Business System Development

http://www.filefactory.com/file/2iq1u5a2p8j/n/3._Business_System_Development(ICT_503).zip

ICT 504 Business Data Communications

http://www.filefactory.com/file/7k167ouqwfdf/n/4._Business_Data_Communications_(ICT_504).zip

ICT 505 Applied Computing I

http://www.filefactory.com/file/1hy38ryuzys5/n/5._Applied_Computing_I_(ICT_505).zip

ICT 506 Applied Computing II

http://www.filefactory.com/file/4w1jov4ls63x/n/6._Applied_Computing_II(ICT_506).zip

ICT 601 Programming in Java

http://www.filefactory.com/file/3xuhrwe6w8nl/n/7._Programming_in_Java_(ICT_601).zip

ICT 602 E-Commerce
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Bachelor Degree Learning Materials

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MASTER OF SCIENCE (RENEWABLE ENERGY) LEARNING SUPPORT WEBSITE

Part (1) Preliminary Course

ENEGY101A FOUNDATION STUDIES IN RENEWABLE ENERGY AND SUSTAINABILITY

Course Outline

In this subject you will learn about the areas of renewable energy technologies and sustainability. You will develop foundation knowledge relating to:

- Defining sustainability and renewable energy
- Non-technical issues in sustainability and renewable energy
- Energy basics efficiency and calculations
- Solar energy systems
- Wind energy systems
- Hydro energy systems
- Biomass energy systems
- Ocean energy systems
- Principles of sustainable living
- Moving to a sustainable economy.

Prescribed Texts:

Mackay, D.J.C. 2008, *Sustainable Energy without the Hot Air*, UIT, Cambridge, England

Study Guide

WEEK NO:	TOPICS AND ACTIVITIES
Orientation Week	**Orientation activities** Review of syllabus and assessment activities.
Week 1	• Introduction to the Subject. • The cause of Climate Change. • Global and Australian Figures. • Climate Change - The Impacts and the imperative for change. **Reading List:** • *Sustainable Energy Without the Hot air,* pp. 5-18 • *ZCA Stationary Energy Plan*, pp. 2-3
Week 2	• Energy use in Australia. • Energy conversion and efficiency. • Primary, Secondary and End Use energy. **Reading List:** • Dept. of Energy Resources and Tourism, *Energy in Australia 2012,* pp. 15-28
Week 3	• Coal, Oil, Gas and Nuclear Energy Systems. **Reading List:** • Course notes
Week 4	• Solar Energy Systems – The Solar Resource – Photovoltaics. **Reading List:** • *Sustainable Energy Without the Hot air,* pp. 38-49
Week 5	**Field Trip** • Solar Energy Systems - Solar Hot Water, Solar Air conditioning and Solar Thermal Electricity. **Reading List:** • *Sustainable Energy Without the Hot air,* pp. 38-49 • *ZCA Solar Thermal Power Basics and Solar Thermal Power fact sheets*
Week 6	• Wind Energy Systems – size of the resource, principles of operation, World and Australian wind energy. **Reading List:** • *Sustainable Energy Without the Hot air,* pp. 32-34, 186-189 • *Clean Energy Council Fact sheet on Wind Energy* **Assessment 1 due: Individual written report - 10%**
Week 7	
Week 8	• Hydro Energy Systems – size of the resource, principles of operation, World and Australian Hydro energy. **Reading List:**

WEEK NO:	TOPICS AND ACTIVITIES
	• *Sustainable Energy Without the Hot air,* pp. 55-56 and pp. 190-194 • *Clean Energy Council Fact sheet on Hydro Electricity* **Assessment 2 due: Written report on field trip - 5%**
Week 9	• Biomass • Geothermal **Reading List** • *Clean Energy Council Fact sheet on Geothermal Energy* • *Clean Energy Council Fact sheet on Bio Energy* • *Sustainable Energy Without the Hot air,* pp. 96-99
Week 10	• Ocean Energy – Wave and tidal **Reading List:** • *Sustainable Energy Without the Hot air,* pp. 73-75; pp. 81-87; pp. 307-321 • *Clean Energy Council Fact sheet on Marine Energy*
Week 11	• The imperative for Sustainability • Moving to Renewable Energy **Reading List:** • *Less is More,* pp. 205-235
Week 12	• Sustainable Building Design • Sustainable Food and Farming **Reading List:** • *Sustainable Energy Without the Hot air,* pp. 76-80 • www.yourhome.gov.au *Technical Manual,* pp. 69-127
Week 13	• Sustainable Transport • Sustainable Mining and Manufacturing **Reading List:** • *Sustainable Energy Without the Hot air,* pp. 29-31; 35-37; 118-139; 88-95 and 322-326 • *ZCA Stationary Energy Plan*, pp. 16-19 **Assessment 3 due: Collaborative written report – 30%** **Assessment 4: Presentation based on collaborative written report – 10%**
Week 14	**Study Week**
Week 15	**Examination Week B:** **Assessment 5: Written examination - 45%**

Lesson Power Points

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Textbook

Prescribed Texts:

Mackay, D.J.C. 2008, *Sustainable Energy without the Hot Air*, UIT, Cambridge, England

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Tutorial Exercises

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http://www.filefactory.com/file/7hvv22gtz2lx/n/K131_zip

http://www.filefactory.com/file/1mr75xfm92ux/n/K032_zip

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AEEGY 101A Grid Connected Photovoltaics Power System

Course Outline

In this subject you will learn the basics about photovoltaics and grid design. You will develop knowledge and applied skills relating to:

- Solar geometry
- Solar radiation terms and measurements
- Photovoltaic cell and module characteristics
- Manufacture of photovoltaic modules
- Photovoltaic array design and characteristics
- Effects of tilt, orientation, temperature and shading
- Workplace health and safety standards, Australian and industry standards
- Inverter principles and requirements for grid-connected inverters in Australia
- Inverter and Array matching
- Wiring, Protection and Earthing
- Metering and Tariff arrangements
- Installation and Commissioning
- Maintenance.

Study Guide

Lesson Power Points

http://www.filefactory.com/file/5u2urjc3d0hx/AEEGY101A%20Grid%20Connected%20Inverter-RE001%20Part%201.pdf

Password- Joe2013

Textbook

Prescribed Texts:

Stapleton G & Neill S 2012, *Grid-Connected Solar Electric Systems*, Earthscan, Abingdon, Oxon

http://www.filefactory.com/file/14nwysld3g7t/Grid_Connected_Electrical_System_Textbook_pdf

http://www.filefactory.com/file/4lmptse2xmp1/Applied_Photovoltaics_pdf

http://www.filefactory.com/file/55cxpfou1kwt/Control_of_Power_Inverters_in_Renewable_Energy_and_Smart_Grid_Integration_pdf

Password- Joe2013

Tutorial Exercises

http://www.filefactory.com/file/59rpcqogl8ux/n/K035_Answer_sheet_doc

http://www.filefactory.com/file/6uye10nst3ad/n/K035_Test_pdf
Password- joe2013

Further Readings

K035Inverter K035PV_Inverter

Stage 4 Part 17.zip

http://www.filefactory.com/file/c0cc76b/n/Stage_4_Part_17.zip

K035_Tutorials.zip
Stage 4 Part 16.zip

http://www.filefactory.com/file/c0cc703/n/Stage_4_Part_16.zip

Renewable Energy-K025+K035.zip

http://www.filefactory.com/file/c0b7c5e/n/Renewable_Energy-K025_K035.zip

Video Lessons

K035 Lesson 1-Inverter principle.zip

http://www.filefactory.com/file/c0b6a01/n/K035_Lesson_1-Inverter_principle.zip

K035 Lesson 2-Modified sine wave inverter.zip

http://www.filefactory.com/file/c0b6a26/n/K035_Lesson_2-Modified_sine_wave_inverter.zip

K035 Lesson 3-Pulse width modulation.zip

http://www.filefactory.com/file/c0b6a33/n/K035_Lesson_3-Pulse_width_modulation.zip

K035 Lesson 4-PV Inverter.zip

http://www.filefactory.com/file/c0b6a6c/n/K035_Lesson_4-PV_Inverter.zip

K035 Lesson-5 MOSFET Driver.zip

http://www.filefactory.com/file/c0b5978/n/K035_Lesson-5_MOSFET_Driver.zip

K035 Lesson-6 PWM Inverter.zip

http://www.filefactory.com/file/c0b6ac2/n/K035_Lesson-6_PWM_Inverter.zip

K035 Lesson-7 Grid Connected Inverter.zip

http://www.filefactory.com/file/c108253/n/K035_Lesson-7_Grid_Connected_Inverter.zip

K035 Lesson-8 Inverter Power Flow Model.zip

http://www.filefactory.com/file/c0b6aff/n/K035_Lesson-8_Inverter_Power_Flow_Model.zip

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Online Practicals

Practicals Work performance and practical instruction

Click HERE to download practicals

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OTHER RESOURCES

K025 Resources

Stage 2 Part 5.zip
http://www.filefactory.com/file/c0cc187/n/Stage_2_Part_5.zip
Protection_1
Protection_2
PV_System_installation_Overview_-_PV_Power_Systems
PVSoftware
Regulatory_Requirement
SPS_Components

Stage 2 Part 2A.zip
http://www.filefactory.com/file/c0cca4a/n/Stage_2_Part_2A.zip
Electrical_safe_working
Electrical_trade_review_questions_and_answers
ELV_Accessories_-_SPS_Components
ELV_Cable_termination

Stage 3 Part 1B.zip
http://www.filefactory.com/file/c0ccc42/n/Stage_3_Part_1B.zip
Cable_CktProt_E_Accessories

Cable_Conduit_E_Accessories

AEEGY 102A Solar and Thermal Energy Systems

Course Outline

In this subject you will learn about solar and thermal energy systems. You will develop specialised knowledge and applied skills relating to:

- Solar energy utilisation - introduction and overview
- Heating load calculations
- Thermal environment – solar radiation, shading and energy conservation
- Solar collectors
- Collector requirements for some specific applications
- Thermal energy storage
- Solar cooling
- Mechanical Power generation
- Sizing of heating, cooling and mechanical power generation components
- Ancillary equipment
- Equipment specification and installation
- Performance analysis.

Study Guide

Lesson Power Points

Part 1

http://www.filefactory.com/file/c9acnzqhs13/AEEGY102A%2BRE003%20Part%202-ME108.pdf

Part 2

http://www.filefactory.com/file/2i3h1v6qqkuv/AEEGY102A%2BRE003%20Part%203-Fact_sheet_-_Geothermal_Energy.pdf

Part 3

http://www.filefactory.com/file/57k90jem46f/AEEGY102A-Solar%20%26amp%3B%20Thermal%20Energy%20System-RE003%20Part%201.pdf

Password- Joe2013

Textbook

Prescribed Texts

The German Solar Energy Society, 2009 *Planning and Installing Solar Thermal Systems*, Earthscan (UK) All Chapters

http://www.filefactory.com/file/39q0d0rb9t7h/185936187-Planning-and-Installing-Solar-Thermal-Systems_pdf

Password- Joe2013

Tutorial Exercises

Password- joe2013

Further Readings

K025_Note_1
K025_Note_2

Stage 2 Part 4.zip

http://www.filefactory.com/file/c0ccb53/n/Stage_2_Part_4.zip

K025 Resources

ELV_Accessories_-_SPS_Components

ELV_Cable_termination

Stage 2 Part 2A.zip

http://www.filefactory.com/file/c0cca4a/n/Stage_2_Part_2A.zip

PV_System_installation_Overview_-_PV_Power_Systems

SPS_Components

PVSoftware

Stage 2 Part 5.zip

http://www.filefactory.com/file/c0cc187/n/Stage_2_Part_5.zip

System_Installation_Examples_-_NUER02_version

Stage 2 Part 6.zip

http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip
Renewable Energy-K025+K035.zip
http://www.filefactory.com/file/c0b7c5e/n/Renewable_Energy-K025_K035.zip

Lesson 1 **Lesson 2** **Lesson 3** **Lesson 4** **Lesson 5** **Lesson 6**

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Online Practicals

Practicals Work performance and practical instruction

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AEEGY 201A Energy Storage System

Course Outline

In this subject you will learn about energy storage systems. You will develop specialised knowledge and skills relating to:

- The need for and benefits of energy storage technologies
- Current energy storage technologies and their application
- Environmental impacts and benefits of energy storage systems
- Designing an energy storage system for specific engineering applications
- Costing and payback of energy storage systems
- Designing and building a small scale energy storage system.

Study Guide

Lesson Power Points

Part 1
http://www.filefactory.com/file/68whdsdbwtfh/AEEGY201A-RE004%20Part%201.pdf

Part 2

http://www.filefactory.com/file/gh1dls7edlp/AEEGY201A-RE004%20Part%202.pdf

Part 3
http://www.filefactory.com/file/48jt93opz4b5/AEEGY201A-RE004%20Part%203.pdf

Password- **Joe2013**

Textbook

Prescribed Texts:

Brunet, Y, 2010, *Energy Storage*, John Wiley & Sons UK.

http://www.filefactory.com/file/56ymtb4pptz1/Energy%20Strorage.pdf

Other Related book

http://www.filefactory.com/file/2wpc2idmobv9/Energy_Stroage_pdf

http://www.filefactory.com/file/3poecuxu7yxb/energy-in-australia-2012_pdf

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Tutorial Exercises

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Further Readings

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Online Practicals

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AEEGY202A Renewable Energy Resources Analysis

Course Outline

In this subject you will learn about renewable energy resource analysis. You will develop specialised knowledge and skills relating to:

- National and international trends in renewable energy resource analysis
- Energy history
- Australian Renewable Energy reserves
- Energy and power conversion
- Behavioural trends and misconceptions
- Power Cycles
- Oil, coal and natural gas
- Solar photovoltaics
- Solar thermal
- Wind Energy
- Hydro-power
- Bio-mass
- Geo-thermal
- Ocean energy
- Hydrogen Economy
- Limitations in existing infrastructure.

Study Guide

Lesson Power Points

Part 1

http://www.filefactory.com/file/2248bo0gcbor/AEEGY202A%2BRE005%20Part%201.pdf

Part 2

http://www.filefactory.com/file/5us491ooh1cl/AEEGY202A%2BRE005%20Part%201.pdf

Part 3

http://www.filefactory.com/file/5e3gt7cv1rid/AEEGY202A%2BRE005%20Part%202.pdf

Part 4

http://www.filefactory.com/file/5ld0bqgs3049/AEEGY202A%2BRE005%20Part%202.pdf

Part 5

http://www.filefactory.com/file/47m4fhje9k73/AEEGY202A%2BRE005%20Part%203.pdf

Part 6

http://www.filefactory.com/file/5mfsxsln72ll/AEEGY202A%2BRE005%20Part%203.pdf

Part 7

http://www.filefactory.com/file/26efv2p36hpf/AEEGY202A%2BRE005%20Part%204.pdf

Part 8

http://www.filefactory.com/file/4szjlkhva34t/AEEGY202A%2BRE005%20Part%204.pdf

Part 9

http://www.filefactory.com/file/5n4ixwsih1vb/AEEGY202A%2BRE005%20Part%205.pdf

Part 10

http://www.filefactory.com/file/7jb0atgu4xst/AEEGY202A%2BRE005%20Part%205.pdf

Part 11

http://www.filefactory.com/file/3vix5oofhjex/AEEGY202A%2BRE005%20Part%205a.pdf

Part 12

http://www.filefactory.com/file/4jt03kopqyhp/AEEGY202A%2BRE005%20Part%205a.pdf

Part 13

http://www.filefactory.com/file/23v9r0ymiy8n/AEEGY202A%2BRE005%20Part%206.pdf

Part 14

http://www.filefactory.com/file/2yyceyvo1knh/AEEGY202A%2BRE005%20Part%206.pdf

Part 15

http://www.filefactory.com/file/2qiuhz8imqjf/AEEGY202A%2BRE005%20Part%207.pdf

Part 16

http://www.filefactory.com/file/33va2juvew5b/AEEGY202A%2BRE005%20Part%207.pdf

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Textbook

Prescribed Text:

Boyle, G 2004, *Renewable Energy: Power for a sustainable future* 2nd or latest edition Oxford University Press

http://www.filefactory.com/file/11jwo86pxn0j/Renewable%20Energy-Power%20for%20sustainable%20Future.pdf

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Tutorial Exercises

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Further Readings

K131 + EE 308
http://www.filefactory.com/file/7hvv22gtz2lx/n/K131_zip

Additional 3.zip

http://www.filefactory.com/file/c0cb6a8/n/Additional_3.zip

Additional 1.zip

http://www.filefactory.com/file/c0cc0f7/n/Additional_1.zip

http://www.filefactory.com/file/1mr75xfm92ux/n/K032_zip

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Online Practicals

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AEEGY 203AWind Energy Conversion System

Course Outline

In this subject you will learn about wind energy conversion systems. You will develop specialised knowledge and skills relating to:

- Introduction to wind as a natural resource
- Energy, power and wind
- Wind characteristics
- Data acquisition methods
- Site characteristics
- Correlation, wind and site
- Predicting energy output
- Turbines, types and construction
- Wind Energy Conversion Systems (WECS) sizing
- Retrospective performance.

Study Guide

Lesson Power Points

http://www.filefactory.com/file/3hyoby6eqe3p/AEEGY%20203A%20%20Wind%20Energy-RE006.pdf

Password- **Joe2013**

Textbook

Prescribed Texts:

Boyle, G, 2004, *Renewable Energy: Power for a sustainable future*. 2nd edition, Oxford University Press

http://www.filefactory.com/file/11jwo86pxn0j/Renewable%20Energy-Power%20for%20sustainable%20Future.pdf

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Tutorial Exercises

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Further Readings

ME 202 Introduction to Aero Dynamics

http://www.filefactory.com/file/401s96o982uf/n/ME_202_Introduction_to_Aero_Dynamics_pdf

ME 234 Wind Turbines

http://www.filefactory.com/file/30w0u2u36a19/n/ME_234_wind-turbines_pdf

Aerodynamics Part 1

http://www.filefactory.com/file/7axzc9j37g91/n/ME202_Part_1_zip

Aerodynamics Part 2

http://www.filefactory.com/file/2tlei8t6e4xn/n/ME202_Part_2_zip

Aerodynamics Part 3

http://www.filefactory.com/file/6mt5m5wi6dfn/n/ME202_Part_3_zip

Wind Turbine Part 1

http://www.filefactory.com/file/1f2dio8ik4zd/n/ME_234_Part_1_zip

Wind Turbine Part 2

http://www.filefactory.com/file/olr2lwjdpc5/n/ME_234_Part_2_zip

Wind Turbine Part 3

http://www.filefactory.com/file/1l7k3a3shh4f/n/ME_234_Part_3_zip

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Online Practicals

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AEEGY 204 A Energy Efficiency

Course Outline

In this subject you will learn about the efficiency of energy systems. You will develop specific knowledge and skills relating to:

- Energy conversion efficiencies of conventional and renewable energy systems
- Energy auditing
- Economic and environmental benefits of energy efficiency
- Energy efficiency of various energy loads
- Cogeneration (CHP)
- Pros and cons of distributed generation in terms of energy efficiency
- Ways to improve energy efficiency at the generation point and in the distribution system
- Ways to improve energy efficiency at the load points.

Study Guide

Lesson Power Points

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Textbook

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Tutorial Exercises

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Further Readings

1	Building Design+Material Science-K041+E047.zip http://www.filefactory.com/file/c0b645d/n/Building_Design_Material_Science-K041_E047.zip
2	Stage 3 Part 7.zip http://www.filefactory.com/file/c0ccfc7/n/Stage_3_Part_7.zip HazardLightingPanel K041 Building Design 1 K041 Building Design 2 K041Airconditioning K041Energy Management Textbook Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip E047 Mech
3	As 1

4	As 2
5	**Renewable Energy+ Energy Efficiency** K041 Lesson 1-Solar Design.zip http://www.filefactory.com/file/c0b6a9f/n/K041_Lesson_1-Solar_Design.zip K041 Lesson 2-Basic psychrometric chart.zip http://www.filefactory.com/file/c0b6bc9/n/K041_Lesson_2-Basic_psychrometric_chart.zip K041 Lesson 3-Total heat resistance.zip http://www.filefactory.com/file/c0b6b18/n/K041_Lesson_3-Total_heat_resistance.zip K041 Lesson 4-U value Heat conductance calculation.zip http://www.filefactory.com/file/c0b6b57/n/K041_Lesson_4-U_value_Heat_conductance_calculation.zip K041 Lesson 5-Glazing+Net Heat gain heat loss.zip http://www.filefactory.com/file/c0b6cc2/n/K041_Lesson_5-Glazing_Net_Heat_gain_heat_loss.zip K041 Lesson 6-Shading.zip http://www.filefactory.com/file/c0b6cd7/n/K041_Lesson_6-Shading.zip K041 Lesson 7-Insulation+ Thermal mass.zip http://www.filefactory.com/file/c0b6c06/n/K041_Lesson_7-Insulation_Thermal_mass.zip

K041 Lesson 8-Thermal mass insulation.zip

http://www.filefactory.com/file/c0b6c30/n/K041_Lesson_8-Thermal_mass_insulation.zip

K041 Lesson 9-Airconditioning load calculation.zip

http://www.filefactory.com/file/c0b6dc8/n/K041_Lesson_9-Airconditioning_load_calculation.zip

K041 Lesson 10-Heat gain per day.zip

http://www.filefactory.com/file/c0b6dfe/n/K041_Lesson_10-Heat_gain_per_day.zip

K041 Lesson 11-Ventilation.zip

http://www.filefactory.com/file/c0b6d13/n/K041_Lesson_11-Ventilation.zip

K041 Lesson 12-Building heating load

http://www.filefactory.com/file/c0b6d47/n/K041_Lesson_12-Building_heating_load_calculation.zip

K041 Lesson 14-Design for Australian climate.zip

http://www.filefactory.com/file/c0b6d76/n/K041_Lesson_14-Design_for_Australian_climate.zip

K041 Lesson 15-Domestic solar hot water system.zip

http://www.filefactory.com/file/c0b6eaf/n/K041_Lesson_15-Domestic_solar_hot_water_system.zip

	K041 Lesson 16-Energy efficiency+Lighting.zip http://www.filefactory.com/file/c0b6e0f/n/K041_Lesson_16-Energy_efficiency_Lighting.zip K041 Lesson 17-Illumination+Smoke alarm.zip http://www.filefactory.com/file/c0b6fc5/n/K041_Lesson_17-Illumination_Smoke_alarm.zip K041_Lesson_18-Water_supply.zip http://www.filefactory.com/file/c0b61ec/n/K041_Lesson_18-Water_supply.zip K041_Lesson_19-Ventilation+Lighting_control.zip http://www.filefactory.com/file/c0b6058/n/K041_Lesson_19-Ventilation+Lighting_control.zip K041_Lesson_20-Electrical_system_design.zip http://www.filefactory.com/file/c0b6085/n/K041_Lesson_20-Electrical_system_design.zip K041_Lesson_21-Building_materials.zip http://www.filefactory.com/file/c0b61b8/n/K041_Lesson_21-Building_materials.zip
6	Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**

	UEENEEK041B_E047B_Tutorials Energy_survey_assignment in Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**E07 & EE011 units mapping for Theory study & Exercises** Assignment + Project work
10	K041 Text book http://www.filefactory.com/file/61dmv976e7tl/n/K041Textbook1_zip http://www.filefactory.com/file/4lsx0pk00guj/n/K041Textbook2_zip http://www.filefactory.com/file/2kwcxkrnasyf/n/K041Textbook3_zip

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Part (2) Qualified (1) Course

ENMAT 101A Engineering Materials & Processes

Course Outline

In this subject you will learn about the structure, properties and usage of a variety of materials used in engineering applications. You will develop specialised knowledge relating to:

- Material structure and properties
- Mechanical properties
- Metals - ferrous and non-ferrous
- Polymers
- Ceramics
- Composites, concrete, other
- Basic destructive testing
- Steel – FeC (Iron/Carbon), heat treatment
- Casting - perm/non-perm
- Forming - hot, cold
- Processes - PowderM, welding, Rapid Proto
- Polymer processes - IM, BM, extrus, thermoset, composites
- Joining - fasteners, weld, non-fusion
- Corrosion
- Surface treatments - plating, coatings, peening, anodising
- Non-destructive testing
- Quality assurance and control, certified testing, safety, materials safety data sheets (MSDS)
- Economic and environmental issues - production/recycling.

Study Guide

WEEK	LECTURES / EXAMINATIONS	LABORATORY	QUIZ
Orientation Week	**Orientation activities** **Review of syllabus and assessment activities. Laboratory orientation.** Academic Foundations: Note taking; study skills; introduction to conducting research.		
Week 1	**Lecture (2 hrs):** **Readings:** Ch 1: Engineering materials; Ch 2: Properties of materials.	Laboratory 1 (2 hrs): Hardness test	
Week 2	**Lecture (2 hrs):** **Readings:** Ch 3: Mechanical testing; Ch 4: The crystal structure of metals.	Laboratory 2 (2 hrs): Tensile Test	
Week 3	**Lecture (2 hrs):** **Readings:** Ch 5: Casting process; Ch 6: Mechanical deformation of metals; Ch 7: The mechanical shaping of metals.	Laboratory 3 (2 hrs): Metal Casting	**10101**
Week 4	**Lecture (2 hrs):** **Readings:** Ch 8: Alloys; Ch 9: Equilibrium diagrams; Ch 10: Practical microscopy	Laboratory 4 (2 hrs): Microscopy, Weld samples	**10102**
Week 5	**Lecture (2hrs):** **Readings:** Ch 11: Iron and steel; Ch 12: The heat-treatment of plain-carbon steels	Laboratory 5 (2 hrs): Torsion, Bending Tests	**10103**
Week 6	**Lecture (2hrs):** **Readings:** Ch 13: Alloy steels; Ch 14: The surface hardening of steels; Ch 15: Cast iron.	Laboratory 6 (2 hrs): Heat Treatment	
Week 7	**Examination Week A:** **Assessment 2: Short answer test on content from weeks 1 to 5 (Ch1 to Ch15) 15%**	**Assessment 3 due: Portfolio of Laboratory Reports 1, 2, 3 & 4 - 15%**	
Week 8	**Lecture (2hrs):** **Readings:** Ch 16: Copper and its alloys; Ch 17: Aluminium and its alloys; Ch 18: Other non-ferrous metals and their alloys.	Laboratory 7 (2 hrs): Polymer tensile test,	**10105**

WEEK	LECTURES / EXAMINATIONS	LABORATORY	QUIZ
Week 9	**Lecture (2hrs):** **Readings:** Ch 19: Plastics materials and rubbers; Ch 20: Properties of plastics.	Site Visit: e.g. Rolling Mill, Materials process/testing	
Week 10	**Lecture (2hrs):** **Readings:** Ch 21: Ceramics; Ch 22: Glasses; Ch 23: Composite materials.	Demo: Epoxy FRC, thermoforming	**10106**
Week 11	**Lecture (2hrs):** **Readings:** Ch 24: Fibre-reinforced composite materials; Ch 25: Methods of joining materials.	Laboratory 8 (2 hrs): Dye, Mag, Ultrasound	**10104**
Week 12	**Lecture (2hrs):** **Readings:** Ch 26: Causes of failure; NDT; Material Standards.	Laboratory 9 (2 hrs): Product Study	**10107**
Week 13	**Lecture (2 hrs):** **Readings:** Ch 27 Choice of Materials and Processes; Design. Economic, Environmental, Social Issues.	**Assessment 4 due:** **Collaborative Report (Product Study) 15%**	**10108**
Week 14	**Study Week**		
Week 15	**Examination Week B:** **Assessment 5:** **Written examination: 30%**	**Assessment 3 due:** **Portfolio of Laboratory Reports 5, 6, 7, 8 & 9 - 15%**	

Lesson Power Points

E081 Material Science

http://www.filefactory.com/file/pq2r36bvgnv/n/E081_Material_Science1_pdf

Non Metallic Materials

http://www.filefactory.com/file/2czhyovkn32x/n/Materials_ppt

Password- Joe2013

Textbook

Prescribed Text:

Higgins, R. & Bolton, W., 2010, *Materials for Engineers and Technicians*, 5th Edition, Butterworth Heinemann, Oxford UK. ISBN 9781856177696.

http://www.filefactory.com/file/724kx95f2ayf/27767685-Materials-Engineers- Technicians_pdf

Password- Joe2013

Tutorial Exercises

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Further Readings

Engineering Mechanics

http://www.filefactory.com/file/63sqtndrqf55/n/ME_103_Engineering_Mechanics_zip

Chemical Thermodynamics

http://www.filefactory.com/file/5ussq0pnpi4t/n/ME_207_Chemical_thermodynamics_pdf

Introduction-to-polymer-science-and-technology

http://www.filefactory.com/file/6epib0ijvbjt/n/ME_209_Introduction-to-polymer-science-and-technology_pdf

http://www.filefactory.com/file/7dhamrs5c3z7/n/ME207_zip

ME 305+ ME 209

http://www.filefactory.com/file/76fbf48z2h7j/n/ME305_ME209_zip

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Online Practicals

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ENELE 101A Principle of Electrical Engineering

Course Outline

In this subject you will learn about basic principles of electrical engineering. You will develop a range of foundation knowledge and skills relating to:

- Notation and units
- Circuit topologies

Direct current (DC) circuit principles:

- Voltage, current, power, resistance, conductance
- Ohm's Law; Kirchhoff voltage and current laws
- Series and parallel configurations
- Linearity and Superposition
- Thévenin and Norton equivalent circuits (simple cases)
- Nodal and mesh analysis (simple cases)
- Maximum power transfer
- Capacitors
- Passive and switched resistor-capacitor (RC) circuits
- Inductors
- Passive and switched resistor-inductor (RL) circuits
- Diodes

Alternating current (AC) circuit principles:

- Amplitude, frequency and phase
- Voltage
- Current and power in resistors, inductors & capacitors
- Time domain analysis of ac circuits
- Review of complex numbers
- Phasors and phasor notation
- Complex impedance and admittance
- Thévenin and Norton equivalents (simple cases)
- AC power (real, reactive, complex)
- Root-mean-square (RMS) values
- Maximum power transfer.

Study Guide

WEEK NO:	TOPICS AND ACTIVITIES
Orientation Week	**Orientation activities** Review of syllabus and assessment activities.
Week 1	**Introduction to DC Circuits** **Reading List:** Chapter 1 Sections: 1.1 – 1.5 Chapter 2 Sections: 2.1 – 2.6 & 2.9 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 2	**Kirchhoff Voltage & Current Laws** **Reading List:** Chapter 3 Sections: 3.1 – 3.6 & 3.10 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 3	**Node & Mesh Analysis** **Reading List:** Chapter 4 Sections: 4.1 – 4.3, 4.5, 4.6, 4.8, 4.13 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 4	**Superposition Principle & Source Transformation** **Thévenin & Norton Equivalent DC Circuits** **Reading List:** Chapter 5 Sections: 5.1 – 5.6 & 5.11 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 5	**Capacitors & Inductors** **Reading List:** Chapter 7 Sections: 7.1 – 7.8 & 7.13 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 6	**Passive & Switched RL & RC Circuits** **Reading List:** Chapter 8 Sections: 8.1 – 8.4, 8.6 & 8.12 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 7	**Examination Week A:** **Assessment 1: Written examination - 25%**

WEEK NO:	TOPICS AND ACTIVITIES
Week 8	**Diodes in DC Circuits** **Introduction to AC Circuits** **Reading List:** Chapter 10 Sections: 10.1 & 10.2 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 9	**AC Steady-State Analysis** **Reading List:** Chapter 10 Sections: 10.3 & 10.4 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 10	**Complex Numbers & Phasor Notation** **Reading List:** Chapter 10 Sections: 10.5 – 10.6 & 10.11 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 11	**Impedance & Admittance** **Thevenin & Norton Equivalent AC Circuits** **Reading List:** Chapter 10 Section: 10.7 & 10.10 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ. **Assessment 2 Due: Portfolio and/or written report on practicum work and experiments (Laboratory Workbook) – 25%**
Week 12	**AC Power** **Reading List:** Chapter 11 Sections: 11.1 – 11.6 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 13	**Power Superposition & Maximum Power** **Reading List:** Chapter 11 Sections: 11.7 – 11.8 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits,* 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 14	**Study Week**
Week 15	**Examination Week B:** **Assessment 3: Written examination – 50%**

Lesson Power Points

Week 1 Lesson

Week 2 Lesson

Week 3 Lesson

Week 3A Lesson

Video- http://www.filefactory.com/file/cf8739b/n/E003+E004.zip

Circuit Analysis

Advanced Circuit Analysis

Electro-magnetics+Electronics

Advanced Circuits+Electromagnetics+Electronics

Electrical Circuits 1

Engineering Circuit Analysis

Electrical Measurement

Folder				Electrical Circuit
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
	27	to	52	Circuit theorem
	54	to	71	Sinusoids & phasors
	73	to	81	Frequency response

Folder				Engineering Circuit Analysis
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
2/ 3				Basic circuits Examples 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12
4				Basic Nodal and Mesh analysis Example 4.1, 4,2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12
5				Linear and Superposition/ Source Transformation Example 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11
8				RL/ RC Circuits

				Example 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11
9				RLC Circuits Example 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9
10				Sinusoidal steady state analysis Example 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8
11				AC Power Circuit Analysis Example 11.1, 11.2, 11.3, 11.4, 11.5
12				Polyphase Circuits Example 12.1, 12.2, 12.3, 12.4, 12.5, 12.6
13				Magnetically coupled circuits Example 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8
14				Complex Frequency / Laplace Transform Example 14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 14.7, 14.8, 14.11
				Laplace Transform Table 14.1, 14.2
15				Circuit analysis in " S " domain Example 15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7 Pole/ Zero constellation Example 15.12, 15.13
16				Frequency Response Example 16.1, 16.2
17				Two ports network Example 17.1, 17.2, 17.3, 17.4, 17.5
18				Fourier Circuit Analysis Example 18.1 Use of symmetry theory Table 18.1 Example 18.2, 18.3
Exercise	Q328	to	Q367	of Assignment Number (23)

Folder				EE404 Electrical Measurement
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
6	197			Measurement of inductance and capacitance
7	270			Measurement of resistance
9	352			Magnetic measurement
11	437			High voltage measurement and tesating
12	480			Location of cable fault
20	730			Measurement of power
21	771			Measurement of energy

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Textbook

Prescribed Text:

Dorf, R & Svoboda, J 2010, *Introduction to Electric Circuits*, 8th or latest edition, John Wiley & Sons, Hoboken, NJ.

http://www.filefactory.com/file/626gk4lkg37z/Introduction_to_Electric_Circuits_8th_Edition_by_Richard_C_Dorf_amp_James_A_Svoboda_pdf

http://www.filefactory.com/file/7kaiz26cy6vf/LabView_pdf

http://www.filefactory.com/file/2rrdma1udpkv/Principles_and_Applications_of_Electrical_Engineering_pdf

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Tutorial Exercises

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Further Readings

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Online Practicals

Practicals Work performance and practical instruction

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ENELE201A Advanced Electrical Engineering

Course Outline

In this subject you will build on basic engineering knowledge gained in previous sub and develop further knowledge and skills relating to electrical engineering:

Circuit analysis:

- DC and AC Network theorems (Kirchhoff's, Superposition)
- Resonance
- Magnetically coupled circuits

Communications and signalling processing and applications:

- Analogue and digital communications principles
- Filters
- Amplifiers and attenuators
- Communication protocols

Analogue and digital communication systems and control circuits:

- Telemetry and monitoring systems
- Control systems and applications.

Study Guide

Lesson Power Points

Electromagnetics

Electromagnetics 1

http://www.filefactory.com/file/f8hx3kz5gd1/n/BAE407_Wk_1_zip

Electromagnetics 2

http://www.filefactory.com/file/40r0fd3sta2p/n/BAE407_Wk_2_zip

Electromagnetics 3

http://www.filefactory.com/file/snre8qvw3j5/n/BAE407_Wk_3_zip

Circuits

Circuit 1

http://www.filefactory.com/file/65j9pisrtg0j/n/BAE405_Wk_1_zip

Circuit 2

http://www.filefactory.com/file/1o71eepje7up/n/BAE405_Wk_2_zip

Circuit 3

http://www.filefactory.com/file/1mm2f82zqhix/n/BAE405_Wk_3_zip

http://www.filefactory.com/file/3spcgz270krb/BAE405_Wk_3a.zip

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Textbook

Prescribed Texts:

Rizzoni, G & Hartley, T 2007, *Principles and Applications of Electrical Engineering*, 5th or latest edition, McGraw-Hill Companies Inc. USA

Recommended Readings:

Nahvi, M (Ed) & Edminister, J (Ed) 2011, *Schaum's Outline of Electric Circuits*, McGraw-Hill Companies Inc. USA

All About Circuits 2012, viewed 8 May 2012, http://www.allaboutcircuits.com/

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http://www.filefactory.com/file/70zpg419d9mf/_Rizzoni_G_Principles_and_Applications_of_Electr_Bookos_org_pdf

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Tutorial Exercises

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Further Readings

Stage 2 Part 3.zip

http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip
E025_Circuits_1 E025_Circuits_2
Stage 3 Part 2.zip

http://www.filefactory.com/file/c0ccdbc/n/Stage_3_Part_2.zip
E025_Tutorial

Stage 2 Part 2A.zip

http://www.filefactory.com/file/c0cca4a/n/Stage_2_Part_2A.zip

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Online Practicals

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ENELE202A Principle of Electrical Machines

Course Outline

In this subject you will learn basic principles of electrical machinery. You will develop specialised knowledge and skills relating to:

Transformers:

- Transformer Principles and Construction
- Efficiency
- Impedance
- Equivalent circuit
- Polarity
- Vector groups
- Parallel operations
- Special Transformers (Auto and Instrument etc)

Induction Motors:

- Principle of Induction Motor
- Construction and operation of Squirrel Cage Induction Motors (SCIM) and Wound Rotor Induction Motors (WRIM)
- Operation and characteristics
- Induction Generator
- Single Phase Induction Motor

Synchronous Machines:

- Principles of operation
- Characteristics
- Motors
- Alternators

DC Machines:

- Principles of operation
- Shunt Series Compound Machines
- Characteristics

Single Phase and Special Motors:

- Split Phase motor
- Capacitor Sturt/Run motor

- Shaded Pole motor
- Universal motor
- Hysteresis motor
- Stepper motors
- Brushless DC motors
- Permanent magnet motors
- Variable reluctance motors
- Stepper motors
- Brushless DC motors

Electronic Control of Motors

- DC Motors
- AC Motors.

Study Guide

Lesson Power Points

AC MACHINES

Elect Machine-G043+G044+G045.zip **http://www.filefactory.com/file/c0b6668/n/Elect_Machine-G043_G044_G045.zip**
G043_G045_7762AF_Notes **G043_G045_Part_1_7762AF_Notes**
Induction and synchronous machines & control G043+G045 Lesson 1 AC Machine Introduction.zip http://www.filefactory.com/file/c0bf660/n/G043_G045_Lesson_1_AC_Machine_Introduction.zip G043+G045 Lesson 2 Slip+Equivalent Ckt.zip http://www.filefactory.com/file/c0bf7b9/n/G043_G045_Lesson_2_Slip_Equivalent_Ckt.zip G043+G045 Lesson 3 Power Transfer.zip http://www.filefactory.com/file/c0bf773/n/G043_G045_Lesson_3_Power_Transfer.zip

G043+G045 Lesson 4 Test for equivalent ckt.zip

http://www.filefactory.com/file/c0b03f9/n/G043_G045_Lesson_4_Test_for_equivalent_ckt.zip

G043+G045 Lesson 5 Equivalent Ckt Problems.zip

http://www.filefactory.com/file/c0bf842/n/G043_G045_Lesson_5_Equivalent_Ckt_Problems.zip

G043+G045 Lesson 6 Motor starting and control.zip

http://www.filefactory.com/file/c0bf90e/n/G043_G045_Lesson_6_Motor_starting_and_control.zip

G043+G045 Lesson 7 Synchronous machine introduction.zip

http://www.filefactory.com/file/c0bf92d/n/G043_G045_Lesson_7_Synchronous_machine_introduction.zip

G043+G045 Lesson 8 Synchronous machine ckt problems.zip

http://www.filefactory.com/file/c0bf955/n/G043_G045_Lesson_8_Synchronous_machine_ckt_problems.zip
G043+G045 Lesson 9 Synchronous machine starting.zip

http://www.filefactory.com/file/c0b0342/n/G043_G045_Lesson_9_Synchronous_machine_starting.zip

G043+G045 Lesson 10 Single phase motor.zip

http://www.filefactory.com/file/c0b0362/n/G043_G045_Lesson_10_Single_phase_motor.zip

G043+G045 Lesson 11 Factors affecting motor operation.zip

http://www.filefactory.com/file/c0b037b/n/G043_G045_Lesson_11_Factors_affecting_motor_operation.zip

Induction and synchronous machines & control

DC MACHINES

1	Elect Fundamental E029+G012+G001+G002+G060.zip http://www.filefactory.com/file/c0b6601/n/Elect_Fundamental_E029_G012_G001_G002_G060.zip Elect Machine-G043+G044+G045.zip

	http://www.filefactory.com/file/c0b6668/n/Elect_Machine-G043_G044_G045.zip
2	E029_Motor_Control_1 E029_Motor_Control_2 E047Mech G044_7762AC1 G044_7762AC2

TRANSFORMERS

Power Transformer+Line-G040.zip **http://www.filefactory.com/file/c0b7bd2/n/Power_Transformer_Line-G040.zip**
G040_7762AD_Notes
As_1
As_2
G040 Lesson 1 Power transformer rating 1.zip **http://www.filefactory.com/file/c0bcff1/n/G040_Lesson_1_Power_transformer_rating_1.zip** **G040 Lesson 1 Power transformer rating 2.zip** **http://www.filefactory.com/file/c0bcf9b/n/G040_Lesson_1_Power_transformer_rating_2.zip** **G040 Lesson 2 Open circuit short circuit test.zip** **http://www.filefactory.com/file/c0bc0b9/n/G040_Lesson_2_Open_circuit_short_circuit_test.zip** **G040 Lesson 3 Transformer regulation.zip** **http://www.filefactory.com/file/c0bc0d1/n/G040_Lesson_3_Transformer_regulation.zip** **G040 Lesson 4 Power transformer connection.zip** **http://www.filefactory.com/file/c0bc09a/n/G040_Lesson_4_Power_transformer_connection.zip** **G040 Lesson 5 Maximum efficiency.zip** **http://www.filefactory.com/file/c0bc1db/n/G040_Lesson_5_Maximum_efficiency.zip** **G040 Lesson 6 Transformer parallel operation.zip** **http://www.filefactory.com/file/c0bc164/n/G040_Lesson_6_Transformer_parallel_operation.zip** **G040 Lesson 7 Harmonic in transformer.zip** **http://www.filefactory.com/file/c0bc2ab/n/G040_Lesson_7_Harmonic_in_transformer.zip** **G040 Lesson 8 Transformer problem + auto transformer.zip** **http://www.filefactory.com/file/c0bc2cb/n/G040_Lesson_8_Transformer_problem_auto_transformer.zip**

G040_Lesson_9_Transformer_rating_cooling_connection_tap_changing.zip **http://www.filefactory.com/file/c0bc294/n/G040_Lesson_9_Transformer_rating_cooling_connection_tap_changing.zip** **G040 Lesson 10 Phase shift transformer.zip** **http://www.filefactory.com/file/c0bc2f5/n/G040_Lesson_10_Phase_shift_transformer.zip**

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Textbook

Prescribed Texts:

Wildi, T 2006, *Electrical Machines, Drives and Power Systems* 6th or latest edition. Pearson Prentice Hall, Australia

http://www.filefactory.com/file/7hcvfk7cai6b/Electrical_Machines_drive_power_system_pdf

http://www.filefactory.com/file/2ua3qpynkv43/ENELE202A-Principle_of_Elect_Meachine_pdf

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Tutorial Exercises

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Further Readings

Subjects	Points	Competency Units
Advanced Electro-magnetics Field & Materials		Electromagnetism

Advanced Electro-magnetics Field & Materials

Readings

Electro-magnetics Field

Electromagnetism

Electro-magetism Examples

Electro-mechanics (2 pt)

Part (1) Overview Knowledge of the subject

Folder					Advanced Engineering Mathematics
					Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated

File name	Chapter		Page		Topics
					Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
Theory					
chap01_emd.pdf			All		Electro-mechanic -1.0.1 Scope of application • Electro-magnetic theory 1.1.1a Magnetic field system, Table 1.1 1.1.1.b Electric field system Table 1.2
chap02_emd.pdf			All		Lumped electro-mechanical elements
chap03_sec_emd.pdf			All		Lumped parameter-electro-mechanic
chap04_sec_emd.pdf			All		Rotating machines
chap05_sec_emd.pdf			All		Lumped parameter-electro mechanical dynamics
Problems					
chap02_prb_emd.pdf			All		Example problems
chap03_prb_emd.pdf			All		Example problems
chap04_prb_emd.pdf			All		Example problems
chap05_prb_emd.pdf			All		Example problems
emdsoln_01.pdf			All		Solutions for all example problems

Electrical Machines
Machine Principle

Folder				Electrical Machines
File				Electrical Machines
				Instruction Study the notes, calculate the example problems

				then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
	45			DC Generator, Example problems
	58			DC Motors, Example problems
	121			Efficiency & heating of electrical machines, Example problems
	131			Three phase transformer, Example problems
	142			Three phase induction motors, Example problems
	177			Synchronous generators, Example problems
	194			Synchronous motors, Example problems
	229			Basic of industrial motor control, Example problems

Machine Principle

Folder				Machine Principle
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
2	114			Rotating machines
3	116			Machinery mounting
4	118			Balancing
6	124			Bearing
7	139			Power transmission

Advanced Electro-magnetics Field & Materials

Folder					Advanced Electro-magnetic Field & Materials
File					
					Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated

File name	Chapter		Page		Topics
					Note- PDF File page number and the page number of the scanned

					document may be different. The student need to check both as necessary
Pre-readings					
em01.pdf	1		All		Electric field
em02.pdf	2		All		Electrostatic potential
em03.pdf	3		All		Dipole and quadrature pole movements
em04.pdf	4		All		Batteries, resistors, ohm laws
em05.pdf	5		All		Capacitors
em06.pdf	6		All		Magnetic effect of an electric current
em07.pdf	7		All		Force on current in a magnetic field
em08.pdf	8		All		Electro-dynamics of moving bodies
em09.pdf	9		All		Magnetic potential
em10.pdf	10		All		Electro-magnetic Induction
em11.pdf	11		All		Dimensions
em12.pdf	12		All		Properties of magnetic materials
em13.pdf	13		All		Alternating current
em14.pdf	14		All		Laplace transform
em15.pdf	15		All		Maxwell Equation
em16.pdf	16		All		CGS Electricity & Magnetism
em17.pdf	17		All		Magnetic dipole movement
Highlight Points					
Lecture1.pdf			All		Outlines
Lecture 2.pdf			All		Electric field
Lecture 3.pdf			All		Electrostatic Energy
Lecture 4.pdf			All		Laplace's equation (1)
Lecture 5.pdf			All		Laplace's equation (2)
Lecture 6.pdf			All		Remarks on units
Lecture 7.pdf			All		Green's functions
Lecture 8.pdf			All		Multipole expansion
Lecture 9.pdf			All		Electro-static in matter
Lecture 10.pdf			All		Boundary condition
Lecture 11.pdf			All		Magneto statics (1)
Lecture 12.pdf			All		Magneto statics (2)
Lecture 13.pdf			All		Macroscopic magneto statics
Lecture 14.pdf			All		Maxwell's equation
Lecture 15.pdf			All		DISC movement
Lecture 16.pdf			All		Electro-magnetic plane

					waves
Lecture 17.pdf			All		Reflection & refraction
Lecture 18.pdf			All		Casual relation between D & E
Lecture 19.pdf			All		Wave guides and load cavities
Lecture 20.pdf			All		Electromagnetic radiation and scattering (1)
Lecture 21.pdf			All		Electromagnetic radiation and scattering (2)
Lecture 22.pdf			All		Scattering by small di-electric sphere
Lecture 27.pdf			All		Electro-magnetism
Lecture 28.pdf			All		Electro magnetic fields and moving charges
Formulas					
CW950212_1.pdf			All		Multipole expansion
CW950320_1.pdf			All		Magnetic constants and materials
CW950329_1.pdf			All		Ampere law
CW950128_3.pdf			All		Brief history of electro magnetism
CW950219_2.pdf			All		Gauss's law
CW950313_2.pdf			All		Numerical solutions to Laplace's equation
CW960430_2.pdf			All		Small current loop
CW970129_3.pdf			All		Curvilinear co-ordinate system
CW970210_1.pdf			All		Problems
CW970303_1.pdf			All		Dielectric tensors and constants
CW970317_2.pdf			All		Analytic solution to Laplace equation
CW970606_1.pdf			All		Magnetostatic boundary condition
CW970606_1.pdf			All		Electrostatic boundary condition
Symbols					
CW970606_3.pdf			All		Electromagnetic field
CW980205_2.pdf			All		The gradient vector
Di-electric.pdf			All		Maxwell's equation
Propagation.pdf			All		Electro-magnetic wave propagation

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Online Practicals

Practicals Work performance and practical instruction

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ENELE 203A Electronics and Power Control

Course Outline

In this subject you will learn about electronics and power control. You will develop specialised knowledge and skills relating to:

Semiconductors, diodes, transistors and integrated circuits:

- Semiconductor materials and junctions
- Diode construction, operation, ratings and applications
- Transistor construction, operation, ratings and applications
- Integrated circuit construction, operation, ratings and applications especially as related to operational amplifiers

Linear regulated dc power supplies:

- Basic power supplies (ac to dc and dc to dc), circuits and applications
- Regulation requirements and applications

Switching power control circuits:

- Basic types, operation
- Critical issues, solutions and applications

Digital electronics

- Digital logic, circuits and power control applications

Power Inverters (DC to AC):

- Basic types, operation
- Critical issues, solutions and applications.

Study Guide

Lesson Power Points

POWER ELECTRONICS

Power Electronics -H025+H026.zip **http://www.filefactory.com/file/c0b6857/n/Power_Electronics_-H025_H026.zip**
H025_Operational_Amplifier H026_3_Ph_Power_Control_Electronics_1 H026_3_Ph_Power_Control_Electronics_2 H026_3_Ph_Power_Control_Electronics_3 H026_3_Ph_Power_Control_Electronics_4 In **Stage 3 Part 6.zip** **http://www.filefactory.com/file/c0cce63/n/Stage_3_Part_6.zip**
Operational_amplifier+ single phase power control equipments H025_Lesson_1-Differential_Amplifier.zip http://www.filefactory.com/file/c20fef9/n/H025_Lesson_1-Differential_Amplifier.zip H025_Lesson_2-Comparator.zip http://www.filefactory.com/file/c0b072e/n/H025_Lesson_2-Comparator.zip H025 Lesson 3-Timer IC.zip http://www.filefactory.com/file/c0b077e/n/H025_Lesson_3-Timer_IC.zip H025 Lesson 4-Op Amp Circuit 1 & 2.zip http://www.filefactory.com/file/c0b08c8/n/H025_Lesson_4-Op_Amp_Circuit_1_2.zip H025 Lesson 5-Op amp characteristics+Band widthe compensation.zip http://www.filefactory.com/file/c0b09da/n/H025_Lesson_5-Op_amp_characteristics_Band_widthe_compensation.zip H025 Lesson 6-Op amp diode characteristics.zip http://www.filefactory.com/file/c0b09e1/n/H025_Lesson_6-Op_amp_diode_characteristics.zip

H025 Lesson 7-Sine & square wave oscillators.zip

http://www.filefactory.com/file/c0b090a/n/H025_Lesson_7-Sine_square_wave_oscillators.zip

H025 Lesson 8-Op amp ckt-Integrator+Differentiator.zip

http://www.filefactory.com/file/c0b0909/n/H025_Lesson_8-Op_amp_ckt-Integrator_Differentiator.zip

H025 Lesson 9-Active filter.zip

http://www.filefactory.com/file/c0b0916/n/H025_Lesson_9-Active_filter.zip

H025 Lesson 10-Multistage Op amp ckt.zip

http://www.filefactory.com/file/c0b0948/n/H025_Lesson_10-Multistage_Op_amp_ckt.zip

H025 Lesson 11-Transducers.zip

http://www.filefactory.com/file/c0b0978/n/H025_Lesson_11-Transducers.zip

H025 Lesson 12-Introduction to control.zip

http://www.filefactory.com/file/c0b0986/n/H025_Lesson_12-Introduction_to_control.zip

Operational amplifier+ single phase power control equipments

Power Electronics -H025+H026.zip

http://www.filefactory.com/file/c0b6857/n/Power_Electronics_-H025_H026.zip

Three phase power control equipments

H026 Lesson 1-Single &Three phase power control.zip

http://www.filefactory.com/file/c0b1ac9/n/H026_Lesson_1-Single_Three_phase_power_control.zip

H026 Lesson 2-Solid state switching devices.zip

http://www.filefactory.com/file/c0b1af2/n/H026_Lesson_2-Solid_state_switching_devices.zip

H026 Lesson 3-Inverter Converter.zip

http://www.filefactory.com/file/c0b1a59/n/H026_Lesson_3-Inverter_Converter.zip

H026 Lesson 4-Power Diodes.zip

http://www.filefactory.com/file/c0b1a8f/n/H026_Lesson_4-Power_Diodes.zip

H026 Lesson 5-AC Motor speed control.zip

http://www.filefactory.com/file/c0b1ba7/n/H026_Lesson_5-AC_Motor_speed_control.zip

H026 Lesson 6-Current fed inverter.zip

http://www.filefactory.com/file/c0b1b0d/n/H026_Lesson_6-Current_fed_inverter.zip

Three phase power control equipments

ANALOG ELECTRONICS

H045 Lesson 1 Op-amp.zip
http://www.filefactory.com/file/c0b1b3a/n/H045_Lesson_1_Op-amp.zip
H045 Lesson 1 Op-amp

H045 Lesson 2 DC Non idealities.zip
http://www.filefactory.com/file/c0b1b5b/n/H045_Lesson_2_DC_Non_idealities.zip

H045 Lesson 3 Bias compensation.zip
http://www.filefactory.com/file/c0b1b86/n/H045_Lesson_3_Bias_compensation.zip

H045 Lesson 4 Slew rate.zip
http://www.filefactory.com/file/c0b1ca0/n/H045_Lesson_4_Slew_rate.zip

H045 Lesson 5 AC Noise.zip
http://www.filefactory.com/file/c0b1cb2/n/H045_Lesson_5_AC_Noise.zip

H045 Lesson 5 AC Noise
http://uploading.com/files/6dmm1ccf/H045%2BLesson%2B5%2BAC%2BNoise.zip/

H045 Lesson 6 Source noise resistance.zip
http://www.filefactory.com/file/c268af2/n/H045_Lesson_6_Source_noise_resistance.zip

H045 Lesson 7 Signal to noise ratio.zip
http://www.filefactory.com/file/c0b1cff/n/H045_Lesson_7_Signal_to_noise_ratio.zip

H045 Lesson 8 Frequency compensation.zip
http://www.filefactory.com/file/c0b1c0e/n/H045_Lesson_8_Frequency_compensation.zip

H045_Lesson_9_Stability_analysis.zip
http://www.filefactory.com/file/c0b1c95/n/H045_Lesson_9_Stability_analysis.zip

H045 Lesson 10 Feedforward compensation.zip
http://www.filefactory.com/file/c0b1c56/n/H045_Lesson_10_Feedforward_compensation.zip

Analogue Electronics

H045 Lesson 1 Op-amp.zip

http://www.filefactory.com/file/c0b1b3a/n/H045_Lesson_1_Op-amp.zip

H045 Lesson 2 DC Non idealities.zip

http://www.filefactory.com/file/c0b1b5b/n/H045_Lesson_2_DC_Non_idealities.zip

H045 Lesson 3 Bias compensation.zip

http://www.filefactory.com/file/c0b1b86/n/H045_Lesson_3_Bias_compensation.zip

H045 Lesson 4 Slew rate.zip

http://www.filefactory.com/file/c0b1ca0/n/H045_Lesson_4_Slew_rate.zip

H045 Lesson 5 AC Noise.zip

http://www.filefactory.com/file/c0b1cb2/n/H045_Lesson_5_AC_Noise.zip

H045 Lesson 6 Source noise resistance.zip

http://www.filefactory.com/file/c268af2/n/H045_Lesson_6_Source_noise_resistance.zip

H045 Lesson 7 Signal to noise ratio.zip

http://www.filefactory.com/file/c0b1cff/n/H045_Lesson_7_Signal_to_noise_ratio.zip

H045 Lesson 8 Frequency compensation.zip

http://www.filefactory.com/file/c0b1c0e/n/H045_Lesson_8_Frequency_compensation.zip

H045_Lesson_9_Stability_analysis.zip

http://www.filefactory.com/file/c0b1c95/n/H045_Lesson_9_Stability_analysis.zip

H045 Lesson 10 Feedforward compensation.zip

http://www.filefactory.com/file/c0b1c56/n/H045_Lesson_10_Feedforward_compensation.zip

AMPLIFIER

http://www.filefactory.com/file/c0cb6a8/n/Additional_3.zip

DC Power Supply

http://www.filefactory.com/file/4f92zgjjzg7j/DC%20Power%20Supply.pdf

Password- **Joe2013**

Textbook

Prescribed Texts:

Meade, R, Diffenderfer, R 2006, *Foundations of Electronics: Circuits and Devices* (Conventional Flow), 5th or latest edition, Delmar Cengage Learning, USA

http://www.filefactory.com/file/2yu0qvkoqppn/Electronic%20Devices.pdf

Password- **Joe2013**

Tutorial Exercises

Password- **joe2013**

Further Readings

Analog & Digital Electronics 1

http://www.filefactory.com/file/27alnx6skg2x/BAE408Wk1.zip

Analog & Digital Electronics 2

http://www.filefactory.com/file/3vpyub43h53p/n/BAE408Wk2_zip

Analog & Digital Electronics 3

http://www.filefactory.com/file/4c6snjh05cel/n/BAE408Wk3_zip

Control 1

http://www.filefactory.com/file/4lahmzh0qf3b/n/BAE502_Wk_1_zip

Control 2

http://www.filefactory.com/file/46t9zbh859rl/BAE502_Wk_2.zip

Control 3

http://www.filefactory.com/file/15qea45hhvxx/n/BAE502_Wk_3_zip

Control 4

http://www.filefactory.com/file/22cy88iyi78f/n/BAE503Wk1PPT_zip

Control 5

http://www.filefactory.com/file/2d82bvgvzgx3/n/BAE503Wk2PPT_zip

Control 6

http://www.filefactory.com/file/3v7x6hmksvnf/n/BAE503Wk3PPT_zip

Password- joe2013

Online Practicals

Practicals Work performance and practical instruction

Click HERE to download practicals

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ENPRA101A Engineering Practice

Course Outline

In this subject you will learn about the practices of an engineering professional within a multidisciplinary framework. You will develop basic knowledge and skills relating to electrical and other engineering specialisations, including:

Introduction to the Regulatory System:

- Electricity Act
- Electricity Regulation Australian
- Standards State Regulators
- Workplace Health and Safety
- Engineers Code of Ethics

Drawings And Specifications:

- Drawing Interpretation
- Overview of Computer Aided Design (CAD)
- Writing a Specification

Generation and Distribution:

- Generating Plant
- Transmission Grid
- Substations

Fasteners and Fastening Methods:

- Methods of securing electrical equipment to various surfaces

Wiring Systems:

- Load Calculations
- Max. Demand
- Cables and Systems
- AS3008

Control and Protection:

- Earthing
- Protection for safety
- Faults and overloads
- Protective devices and methods

Illumination:

Study Guide

Lesson Power Points
AUSTRALIAN ELECTRICIAN TRAINING

G033+G063+G107 (Week 1 to 6 Lessons)(G033)

G106 Cable Termination

G106+G033 Practical

G063 Wk 7+8

http://www.filefactory.com/file/423vowj4o34b/G063_Wk_7_8_zip

G033+G063+G107 Week 10 to 15

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to do	Resources
Main	study	Additional study	Main exercise		Additional exercises		
EE07 Unit	EE011 Unit	For EE07+EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011		
UEENEEE005B Fix and secure equipment	**UEENEEE105A Fix and secure electrotechnology equipment**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiri

	ng_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	(2) Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase **IN THE LINK INDICATED IN ROLL 11**
10	Fixing Equipments E002_E005.zip **IN THE LINK INDICATED IN ROLL 11**
11	**BACK UP FOR 9 & 10** Stage 1 Part 1.zip http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip Stage 1 Part 5.zip

	http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to	Resources
Main	study	Additional study	Main exercise		Additional exercises	do	
EE07 Unit	EE011 Unit	For EE07+EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011		
UEENEEE007B **Use drawings, diagrams, schedules and manuals**	**UEENEEE107A** **Use drawings, diagrams, schedules, standards, codes and specifications**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip

2	ElectricalDrawing1 ElectricalDrawing2 ElectricalDrawing3 Stage 1 Part 3.zip http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip GeneralDrawing1 GeneralDrawing2 Stage 1 Part 4.zip http://www.filefactory.com/file/c0cc1cd/n/Stage_1_Part_4.zip
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	ElectricalDrawing1 ElectricalDrawing2 ElectricalDrawing3 Stage 1 Part 3.zip http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip GeneralDrawing1 GeneralDrawing2 Stage 1 Part 4.zip http://www.filefactory.com/file/c0cc1cd/n/Stage_1_Part_4.zip
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip

	http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	(2) Click HERE to download other Exercises
7	Stage_1_Electrical_workshop_practicals.pdf
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face session Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase in Stage 1 Part 3.zip http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip
10	ElectricalDrawing1 ElectricalDrawing2 ElectricalDrawing3 Stage 1 Part 3.zip http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip GeneralDrawing1 GeneralDrawing2 Stage 1 Part 4.zip http://www.filefactory.com/file/c0cc1cd/n/Stage_1_Part_4.zip
11	**BACK UP FOR 9 & 10** Stage 1 Part 3.zip http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to	Resources
Main	study	Additiona	Main		Additio	do	

		l study	exercise		nal exercises		
EE07 Unit	**EE011 Unit**	**For EE07+EE011 +Video**	**Study Option (1) EE-07**	**Study Option (2) EE-07**	**for EE011**		
UEENEEE008B Lay wiring/cabling and terminate accessories for extra-low voltage circuits	**UEENEEE108A Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip

	http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	2) Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face session Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase **IN THE LINK INDICATED IN ROLL 11**
10	Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008 **IN THE LINK INDICATED IN ROLL 11**
11	**BACK UP for 9 & 10** Stage 1 Part 5.zip http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip Stage 1 Part 1.zip http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to	Resources
Main	study	Additional study	Main exercise		Additional exercises	do	
EE07 Unit	EE011 Unit	For EE07+EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011		
UEENEEE033B Document occupation	**UEENEEE137A Document and apply**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below

al hazards and risks in electrical work	**measures to control OHS risks associated with electrotechnology work**						
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Less

	on_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	2) Click HERE to download other Exercises
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8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
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10	Electrical_safe_working.zip NREL_Disconnect_Reconnect.zip **IN THE LINK INDICATED IN ROLL 11**
11	**BACK UP for 9 & 10** Stage 1 Part 5.zip http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip Stage 1 Part 1.zip http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip

Study Guide EE07 & EE011

What to	**study**		**Which**	**exercises to do**		**What practical to**	**Resources**
Main	**study**	**Additional study**	**Main exercise**		**Additional exercises**	**do**	
EE07 Unit	**EE011 Unit**	**For EE07+EE011 +Video**	**Study Option (1) EE-07**	**Study Option (2) EE-07**	**for EE011**		
	UEENEEG106A Terminate cables, cords and accessories for low voltage circuits	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	

Study Option 2	Study Option 2						
See 2 below	See 4 below						

4	ELV_Cable_termination in Stage 2 Part 2A.zip http://www.filefactory.com/file/c0cca4a/n/Stage_2_Part_2A.zip
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	
7	Only practical assessment in class

8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	Attend face to face class http://www.filefactory.com/file/2f8e3fph9trr/n/G106_G033_Practical_zip
10	ELV_Cable_termination Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008 ElectricalDrawing1.zip ElectricalDrawing2.zip ElectricalDrawing3.pdf **IN THE LINK INDICATED IN ROLL 11**
11	**BACK UP** Stage 2 Part 2A.zip http://www.filefactory.com/file/c0cca4a/n/Stage_2_Part_2A.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to do	Resources
Main	study	Additional study	Main exercise		Additional exercises		
EE07 Unit	EE011 Unit	For EE07+EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011		
	UEENEEG063A Arrange circuits, control and protection for general electrical installations	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	Study Option 1						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	Study Option 2						
See 2 below	See 4 below						

1	
2	
3	
4	
5	**Electrical wiring + Electrical Installation requirement** G003+G004+G007 Lesson 1 Electrical installation protection.zip http://www.filefactory.com/file/c35d2f2/n/G003_G004_G007_Lesson_1_Electrical_installation_protection.zip G003+G004+G007 Lesson 2 Electrical system safety.zip http://www.filefactory.com/file/cf937ac/n/G003_G004_G007_Lesson_2_Electrical_system_safety.zip G003+G004+G007 Lesson 3 Heating+Cable ckt protection exercise.zip http://www.filefactory.com/file/c0abfe8/n/G003_G004_G007_Lesson_3_Heating_Cable_ckt_protection_exercise.zip G003+G004+G007 Lesson 4 Wiring system.zip http://www.filefactory.com/file/cf939f0/n/G003_G004_G007_Lesson_4_Wiring_system.zip G003+G004+G007 Lesson 5 Hazardous area electrical system.zip http://www.filefactory.com/file/cf94af8/n/G003_G004_G007_Lesson_5_Hazardous_area_electrical_system.zip G003+G004+G007 Lesson 6 Overload protection RCD.zip http://www.filefactory.com/file/cf94bcf/n/G003_G004_G007_Lesson_6_Overload_protection_RCD.zip

	G003+G004+G007 Lesson 7 RCD + Metering.zip http://www.filefactory.com/file/cf94cae/n/G003_G004_G007_Lesson_7_RCD_Metering.zip G003+G004+G007 Lesson 8 Switch board installation.zip http://www.filefactory.com/file/cf94c40/n/G003_G004_G007_Lesson_8_Switch_board_installation.zip G003+G004+G007 Lesson 9 Cable selection+Maximum demand.zip http://www.filefactory.com/file/cf94dbb/n/G003_G004_G007_Lesson_9_Cable_selection_Maximum_demand.zip G003+G004+G007 Lesson 10 Electrical installation safety testing.zip http://www.filefactory.com/file/cf94123/n/G003_G004_G007_Lesson_10_Electrical_installation_safety_testing.zip
6	
7	**EE07 & EE011 units mapping for Theory study & Exercises** Only face to face class assessment
8	Only face to face class assessment
9	EE07 & EE011 units mapping for Theory study & Exercises Attend face to face class PRACTICAL Workshop 2+3 WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip OTHER PRACTICALS ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip

	Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf **IN THE LINK INDICATED IN ROLL 11**
10	Construction ElectricalSafety.zip InserviceTesting.zip Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008 IN THE LINK INDICATED IN ROLL 11
11	**BACK UP FOR 9 & 10** Stage 2 Part 1B.zip http://www.filefactory.com/file/c0ccac0/n/Stage_2_Part_1B.zip Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip Stage 2 Part 6.zip http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip Stage 3 Part 4.zip http://www.filefactory.com/file/c0ccd9a/n/Stage_3_Part_4.zip Stage 4 Part 8.zip http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip Stage 4 Part 9.zip http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip Stage 4 Part 10.zip http://www.filefactory.com/file/c0cc5f8/n/Stage_4_Part_10.zip Stage 3 Part 5.zip http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip Stage 3 Part 9.zip http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to	Resources
Main	study	Additional study	Main exercise		Additional exercises	do	
EE07 Unit	EE011 Unit	For EE07+EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011		

UEENEEG007A Select wiring systems and cables for low voltage general electrical installations	**UEENEEG107A Select wiring systems and cables for low voltage general electrical installations**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	AS3000-2007Overview.zip AS3000_AS3008TablesExtract.zip WiringRules.zip Part (1) Study the following notes Installation_Requirement_1-A.zip Installation_Requirement_1-B.zip Installation_Requirement_2-A.zip Installation_Requirement_2-B.zip Stage_2_Wiring.zip In Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip Stage 2 Part 6.zip http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip Stage 3 Part 1B.zip http://www.filefactory.com/file/c0ccc42/n/Stage_3_Part_1B.zip Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip Stage 3 Part 4.zip http://www.filefactory.com/file/c0ccd9a/n/Stage_3_Part_4.zip

	Stage 3 Part 5.zip http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip Stage 3 Part 6.zip http://www.filefactory.com/file/c0cce63/n/Stage_3_Part_6.zip Stage 3 Part 9.zip http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip Stage 4 Part 7.zip http://www.filefactory.com/file/c0cc479/n/Stage_4_Part_7.zip Stage 4 Part 8.zip http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip Stage 4 Part 9.zip http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip Stage 4 Part 14.zip http://www.filefactory.com/file/c0cc684/n/Stage_4_Part_14.zip
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	AS3000-2007Overview.zip AS3000_AS3008TablesExtract.zip WiringRules.zip Part (1) Study the following notes Installation_Requirement_1-A.zip Installation_Requirement_1-B.zip Installation_Requirement_2-A.zip Installation_Requirement_2-B.zip Stage_2_Wiring.zip in www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING
5	**G007** G007 Lesson 1 AS3000 Wiring rule overview.zip http://www.filefactory.com/file/cf94220/n/G007_Lesson_1_AS3000_Wiring_rule_overview.zip G007 Lesson 2 Maximum Demand calculation.zip

	http://www.filefactory.com/file/cf9456f/n/G007_Lesson_2_Maximum_Demand_calculation.zip G007 Lesson 3 Cable selection.zip http://www.filefactory.com/file/cf9465c/n/G007_Lesson_3_Cable_selection.zip G007 Lesson 4 Cable voltage drop calculation.zip http://www.filefactory.com/file/cf9479e/n/G007_Lesson_4_Cable_voltage_drop_calculation.zip G007 Lesson 5 Derating of cable part 1.zip http://www.filefactory.com/file/cf95acb/n/G007_Lesson_5_Derating_of_cable_part_1.zip G007 Lesson 6 Derating of cable part 2.zip http://www.filefactory.com/file/cf95a6b/n/G007_Lesson_6_Derating_of_cable_part_2.zip G007 Lesson 7 Derating of cable for HRC fuse protection.zip http://www.filefactory.com/file/cf95cd7/n/G007_Lesson_7_Derating_of_cable_for_HRC_fuse_protection.zip G007 Lesson 8 Final subcircuit fault loop impedance.zip http://www.filefactory.com/file/cf95dd1/n/G007_Lesson_8_Final_subcircuit_fault_loop_impedance.zip **Electrical Installation requirement**
6	Click HERE to download the other exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises** Do the assignments from the following book & submit the assignment (1) Cable_Installation.zip Do the assignments from the following book & submit the assignment (2) Regulatory_Requirement.zip
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	EE07 & EE011 units mapping for Theory study & Exercises PRACTICAL Workshop 2+3 WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip

	WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip OTHER PRACTICALS ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf In www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING
10	
11	**BACK UP FOR 9 & 10** Stage 2 Part 1B.zip http://www.filefactory.com/file/c0ccac0/n/Stage_2_Part_1B.zip Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip Stage 2 Part 6.zip http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip Stage 3 Part 4.zip http://www.filefactory.com/file/c0ccd9a/n/Stage_3_Part_4.zip Stage 3 Part 5.zip http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip Stage 3 Part 9.zip http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip Stage 4 Part 7.zip http://www.filefactory.com/file/c0cc479/n/Stage_4_Part_7.zip Stage 4 Part 8.zip http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip Stage 4 Part 9.zip http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip Stage 4 Part 10.zip http://www.filefactory.com/file/c0cc5f8/n/Stage_4_Part_10.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to	Resources
Main	study	Additional study	Main exercise		Additional exercises	do	
EE07 Unit	EE011 Unit	For EE07+EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011		
UEENEEG003A Install low voltage wiring and accessories	**UEENEEG103A Install low voltage wiring and accessories**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip **G103+104 Notes+Lessons** http://www.filefactory.com/file/2bg8qift6nzh/n/G103_G104_zip
4	Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008 Fixing Equipments

	E002_E005.zip Lighting.zip E_trade_1.zip E_trade_2.zip E_trade_3.zip E_trade_4.zip G008_General_Notes_1.zip G008_General_Notes_2.zip Hazard_Identification.zip G003_G004_Wiring_2_Part_1.zip G003_G004_Wiring_2_Part_2.zip Cable_CktProt_E_Accessories.zip Cable_Conduit_E_Accessories.zip Elect_Installation_Protection_Method_Devices.zip Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_2.zip ElectricInstallationDesign.zip ElectSystSafety1.zip ElectSystSafety2.zip FireProtHeatingTestingEarthing.zip GeneralWiring.zip HazardLightingPanel.zip PanelRCDWireSpecial_Installation.zip ProtectionMethods.zip in www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING
5	**Electrical wiring + Electrical Installation requirement** G003+G004+G007 Lesson 1 Electrical installation protection.zip http://www.filefactory.com/file/c35d2f2/n/G003_G004_G007_Lesson_1_Electrical_installation_protection.zip G003+G004+G007 Lesson 2 Electrical system safety.zip http://www.filefactory.com/file/cf937ac/n/G003_G004_G007_Lesson_2_Electrical_system_safety.zip G003+G004+G007 Lesson 3 Heating+Cable ckt protection exercise.zip http://www.filefactory.com/file/c0abfe8/n/G003_G004_G007_Lesson_3_Heating_Cable_ckt_protection_exercise.zip

	G003+G004+G007 Lesson 4 Wiring system.zip http://www.filefactory.com/file/cf939f0/n/G003_G004_G007_Lesson_4_Wiring_system.zip G003+G004+G007 Lesson 5 Hazardous area electrical system.zip http://www.filefactory.com/file/cf94af8/n/G003_G004_G007_Lesson_5_Hazardous_area_electrical_system.zip G003+G004+G007 Lesson 6 Overload protection RCD.zip http://www.filefactory.com/file/cf94bcf/n/G003_G004_G007_Lesson_6_Overload_protection_RCD.zip G003+G004+G007 Lesson 7 RCD + Metering.zip http://www.filefactory.com/file/cf94cae/n/G003_G004_G007_Lesson_7_RCD_Metering.zip G003+G004+G007 Lesson 8 Switch board installation.zip http://www.filefactory.com/file/cf94c40/n/G003_G004_G007_Lesson_8_Switch_board_installation.zip G003+G004+G007 Lesson 9 Cable selection+Maximum demand.zip http://www.filefactory.com/file/cf94dbb/n/G003_G004_G007_Lesson_9_Cable_selection_Maximum_demand.zip G003+G004+G007 Lesson 10 Electrical installation safety testing.zip http://www.filefactory.com/file/cf94123/n/G003_G004_G007_Lesson_10_Electrical_installation_safety_testing.zip
6	Click HERE to download the other exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises** Assessment Read the above notes files and do the assignments for the following tutorial file. WiringPracticals.zip G003G004Tutorial.zip in www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face class PRACTICAL http://www.filefactory.com/file/54l4d5rif1z3/n/Advanced_Wiring_Part_1_zip **Advanced Wiring Part 1+2—G103** http://www.filefactory.com/file/1xb18xg1gaz1/n/Advanced_Wiring_Part_1_and_2_zip **Electrical Installation Safety Testing** http://www.filefactory.com/file/5mv9s6dx174h/n/Electrical_Installation_Safety_Testing_zip Workshop 2+3 WorkShop_Part_2_Practical_1_to_6_.zip

	WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip OTHER PRACTICALS ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf
10	Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip Power Distribution Trade Power_Distribution_Trade.zip Metering Metering.zip
11	**BACK UP FOR 9 & 10** Stage 2 Part 1B.zip http://www.filefactory.com/file/c0ccac0/n/Stage_2_Part_1B.zip Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip Stage 2 Part 6.zip http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip Stage 3 Part 4.zip http://www.filefactory.com/file/c0ccd9a/n/Stage_3_Part_4.zip Stage 3 Part 5.zip http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip Stage 3 Part 9.zip http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip Stage 4 Part 7.zip http://www.filefactory.com/file/c0cc479/n/Stage_4_Part_7.zip Stage 4 Part 8.zip http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip Stage 4 Part 9.zip http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip Stage 4 Part 10.zip http://www.filefactory.com/file/c0cc5f8/n/Stage_4_Part_10.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to	Resources
Main	study	Additional study	Main exercise		Additional exercises	do	
EE07	EE011 Unit	For	Study	Study	for		

Unit		EE07+EE011 +Video	Option (1) EE-07	Option (2) EE-07	EE011		
	UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1		
2		
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip **G033** http://www.filefactory.com/file/1b2utxydvcx7/n/G033_zip	
4	Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008 Fixing Equipments E002_E005.zip Lighting.zip E_trade_1.zip E_trade_2.zip E_trade_3.zip E_trade_4.zip G008_General_Notes_1.zip G008_General_Notes_2.zip Hazard_Identification.zip	

	G003_G004_Wiring_2_Part_1.zip G003_G004_Wiring_2_Part_2.zip Cable_CktProt_E_Accessories.zip Cable_Conduit_E_Accessories.zip Elect_Installation_Protection_Method_Devices.zip Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_2.zip ElectricInstallationDesign.zip ElectSystSafety1.zip ElectSystSafety2.zip FireProtHeatingTestingEarthing.zip GeneralWiring.zip HazardLightingPanel.zip PanelRCDWireSpecial_Installation.zip ProtectionMethods.zip In www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING	
5	**Electrical wiring + Electrical Installation requirement** G003+G004+G007 Lesson 1 Electrical installation protection.zip http://www.filefactory.com/file/c35d2f2/n/G003_G004_G007_Lesson_1_Electrical_installation_protection.zip G003+G004+G007 Lesson 2 Electrical system safety.zip http://www.filefactory.com/file/cf937ac/n/G003_G004_G007_Lesson_2_Electrical_system_safety.zip G003+G004+G007 Lesson 3 Heating+Cable ckt protection exercise.zip http://www.filefactory.com/file/c0abfe8/n/G003_G004_G007_Lesson_3_Heating_Cable_ckt_protection_exercise.zip G003+G004+G007 Lesson 4 Wiring system.zip http://www.filefactory.com/file/cf939f0/n/G003_G004_G007_Lesson_4_Wiring_system.zip	

	G003+G004+G007 Lesson 5 Hazardous area electrical system.zip http://www.filefactory.com/file/cf94af8/n/G003_G004_G007_Lesson_5_Hazardous_area_electrical_system.zip G003+G004+G007 Lesson 6 Overload protection RCD.zip http://www.filefactory.com/file/cf94bcf/n/G003_G004_G007_Lesson_6_Overload_protection_RCD.zip G003+G004+G007 Lesson 7 RCD + Metering.zip http://www.filefactory.com/file/cf94cae/n/G003_G004_G007_Lesson_7_RCD_Metering.zip G003+G004+G007 Lesson 8 Switch board installation.zip http://www.filefactory.com/file/cf94c40/n/G003_G004_G007_Lesson_8_Switch_board_installation.zip G003+G004+G007 Lesson 9 Cable selection+Maximum demand.zip http://www.filefactory.com/file/cf94dbb/n/G003_G004_G007_Lesson_9_Cable_selection_Maximum_demand.zip G003+G004+G007 Lesson 10 Electrical installation safety testing.zip http://www.filefactory.com/file/cf94123/n/G003_G004_G007_Lesson_10_Electrical_installation_safety_testing.zip **Electrical wiring + Electrical Installation requirement**	
6	Click HERE to download the other exercises	
7	EE07 & EE011 units mapping for Theory study & Exercises Assessment Read the above notes files and do the assignments for the following tutorial file. WiringPracticals.zip G003G004Tutorial.zip www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING	
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf	
9	Attend the face to face class http://www.filefactory.com/file/2f8e3fph9trr/n/G106_G033_Practical_zip	

10	Power Distribution Trade Power_Distribution_Trade.zip Metering Metering.zip PRACTICAL Workshop 2+3 WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip OTHER PRACTICALS ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf In www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING	
11	**BACK UP FOR 9 & 10** Stage 2 Part 1B.zip http://www.filefactory.com/file/c0ccac0/n/Stage_2_Part_1B.zip Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip Stage 2 Part 6.zip http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip Stage 3 Part 4.zip http://www.filefactory.com/file/c0ccd9a/n/Stage_3_Part_4.zip Stage 3 Part 5.zip http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip Stage 3 Part 9.zip http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip Stage 4 Part 7.zip http://www.filefactory.com/file/c0cc479/n/Stage_4_Part_7.zip Stage 4 Part 8.zip http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip Stage 4 Part 9.zip http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip Stage 4 Part 10.zip http://www.filefactory.com/file/c0cc5f8/n/Stage_4_Part_10.zip	

Password- **Joe2013**

Textbook

Prescribed Texts:

TAFE NSW Higher Education 2012, *Engineering Practices (ENPRA101A) Lecture Notes and Workbook*, lecture notes distributed in Engineering Practices

Recommended Readings:

Hampson, J 2006, *Electrical Trade Principles*, Pearson Education Australia (Chapter 6)

Pethebridge, K & Neeson I 2009, *Electrical Wiring Practice Vol 1*, 7th or latest edition, McGraw Hill, Australia (Chapters 1, 4 and 7)

Pethebridge, K & Neeson I 2002, *Electrical Wiring Practice Vol 2*, 6th or latest edition, McGraw Hill, Australia (Section 22.6)

Standards Australia *AS/NZS 3000:Electrical installations (Wiring Rules)*

Standards Australia *AS/NZS 3008 Electrical installations—Selection of cables*

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Tutorial Exercises

Password- **joe2013**

Further Readings

Password- **joe2013**

Online Practicals

Password- **joe2013**

Text Books for

ENEMP101A Introduction to Engineering Mathematics and Physics
ENEMP102A Foundation Engineering Mathematics and Physics
ENEMP201A Intermediate Engineering Mathematics and Physics
ENEMP202A Advanced Engineering Mathematics and Physics

Giancoli, DC, 2000, Physics For Scientists And Engineers, 4th or latest edition, Volumes 1,2,3, ISBN: 9780132273596.

http://www.filefactory.com/file/7c514m4yw0ov/Giancoli_-_Physics_6th_Solutions_pdf

http://www.filefactory.com/file/1588szswdljx/Giancoli_-_Physics_6th_pdf

Bird, J, 2007, Engineering Mathematics, 4th or latest edition, Newnes Publishing, ISBN: 0-7506-5776-6,

http://www.filefactory.com/file/2z1jzorebdwx/2-john-bird-higher-engineering-mathematics_pdf

http://www.filefactory.com/file/2z1jzorebdwx/2-john-bird-higher-engineering-mathematics_pdf

http://www.filefactory.com/file/6oh03k3msqv1/Basics_of_MATLAB_and_Beyond_pdf

http://www.filefactory.com/file/28cbwzhk6ral/Engineering_Mathematics_4E_pdf

http://www.filefactory.com/file/6uizsgnh2snp/Essentials_of_MATLAB_Programming_pdf

http://www.filefactory.com/file/2z1jzorebdwx/2-john-bird-higher-engineering-mathematics_pdf

http://www.filefactory.com/file/4ljoibd9h6dv/Learning_MATLAB_pdf

http://www.filefactory.com/file/45ftpkh77jsf/MATLAB_Programming_For_Engineers_pdf

http://www.filefactory.com/file/729l3my8kcsp/matlab_quickref_pdf

http://www.filefactory.com/file/2179ehdxp9g5/MatlabNotes_pdf

Text Books for

ENMCC 101A Foundation Mechanical & Civil Engineering Principle
ENMCC 201A Advanced Mechanical & Civil Engineering Principle

http://www.filefactory.com/file/724kx95f2ayf/27767685-Materials-Engineers-Technicians_pdf

http://www.filefactory.com/file/7analtqujo7z/59446893-A-Textbook-of-Engineering-Mechanics-by-R-K-Bansal_pdf

http://www.filefactory.com/file/4k7yvsvt47jr/123974244-strength-of-material-by-r-k-bansal_pdf

http://www.filefactory.com/file/3h4q2snf4kgd/Fluid_Mechanics_and_Thermodynamics_of_Turbomachinery_4E_pdf

http://www.filefactory.com/file/4can70505quj/RE001%2BENERGY%20101A.pdf

http://www.filefactory.com/file/4f92zgjjzg7j/DC%20Power%20Supply.pdf

Part (3) Qualified (2) Course

RE 501-Control of Solar Energy System
RE502- Biomass Gasification
RE503- Energy Management in Industrial and Commercial Facilities
RE504- Engineering Solution for Sustainability
RE505- Green Building Design
RE506- Low Emission Power Generation Technologies
RE507- Offshore Wind Turbines
RE508- Solar Hydrogen Energy System
RE509- Applied Photovoltaics
RE510- Water Conservation
RE511- Sustaining Earth Energy resourcres

A written report between 10,000 – 12,000 words that covers both theory & practical knowledges of the above units.

RE 501-Control of Solar Energy System.pdf (13.93MB)
http://www.filefactory.com/file/16zy6ploevjp/n/RE_501-Control_of_Solar_Energy_System.pdf

Download now!
RE507- Offshore Wind Turbines.pdf (9.4MB)
http://www.filefactory.com/file/2mtdemeyzub/n/RE507-_Offshore_Wind_Turbines.pdf

Download now!
RE511- Sustaining Earth Energy resourcres.pdf (8.43MB)
http://www.filefactory.com/file/38jctruglh59/n/RE511-_Sustaining_Earth_Energy_resourcres.pdf

Download now!
RE503- Energy Management in Industrial and Commercial Facilities.pdf (2.89MB)
http://www.filefactory.com/file/3elg8jedxa4l/n/RE503-_Energy_Management_in_Industrial_and_Commercial_Facilities.pdf

Download now!
RE502- Biomass Gasification.pdf (9.76MB)
http://www.filefactory.com/file/4jvkf83l8qpl/n/RE502-_Biomass_Gasification.pdf

Download now!
RE510- Water Conservation.pdf (10.19MB)
http://www.filefactory.com/file/4xhmdkdc9y1x/n/RE510-_Water_Conservation.pdf

Download now!
RE505- Green Building Design.pdf (13.06MB)
http://www.filefactory.com/file/5e245s2iqyu3/n/RE505-_Green_Building_Design.pdf

Download now!

RE509- Applied Photovoltaics.pdf (5.06MB)
http://www.filefactory.com/file/5gksowteu2ul/n/RE509-_Applied_Photovoltaics.pdf

Download now!
RE504- Engineering Solution for Sustainability.pdf (4.72MB)
http://www.filefactory.com/file/5ifk2mm5tz1r/n/RE504-_Engineering_Solution_for_Sustainability.pdf

Download now!
RE508- Solar Hydrogen Energy System.pdf (1.85MB)
http://www.filefactory.com/file/6d3qf2lc2zu1/n/RE508-_Solar_Hydrogen_Energy_System.pdf

Download now!
RE506- Low Emission Power Generation Technologies.pdf (22.75MB)
http://www.filefactory.com/file/6o1sfltodgc7/n/RE506-_Low_Emission_Power_Generation_Technologies.pdf

Download now!

Part (4) Final Thesis

Res 601 Research Method
MAE 602 Thesis
http://www.filefactory.com/file/1l1r1k0ftawt/n/11.Research+Thesis_(ICT_605).zip

This course guides the student, step by step, through the research process, from problem selection through writing up results. It provides all of the basics necessary to complete a research project in any discipline.

Outline. The following aspects are reflected in this course:

- What is research?
- Tools of research
- The problem: the heart of the research process
- Review of the related literature
- Planning your research design
- Writing the research proposal
- Qualitative research
- Historical research
- Descriptive research
- Experimental and causal - comparative designs
- Statistical techniques for analyzing quantitative data
- Technical details: style, format, and organization of the research report

Masters Research Proposal

Synopsis: Research students are expected to present a written research proposal within three months after commencement. The proposal is handed in to the study leader. Assessors of this proposal are selected by the faculty for their understanding of the field and the research involved. The purpose of a research is to set out a plan for conducting the research and writing the dissertation within the available time. It should take account of the availability and guidance of the study leader. The starting point for a research proposal is the topic, which is the field of interest in which the research is to be carried out. In introducing the topic, the proposal should clarify the field that it falls into and the specific part that field which the research will explore. It should clarify why the topic is of interest and importance, and how the proposed research will contribute to the filed of knowledge or profession. The proposal should clarify the research questions, ensuring that these are specific and answerable. It is important to show how these questions relate to the topic are, and how they will advance the student's contribution. The proposal should detail the research to be carried out, and clarify the research methods, the timeframe and the reasons for selecting particular methods. Where a period of literature review or research should precede any empirical research, this should be factored in as part of the research. It is important to estimate any periods of field research and to flag their duration and cost in your research proposal.

MAE 601 Professional Engineering Practice

MENG6003 Selective I: management subject (45 hrs) 3 credits

MENG6004 Selective II: management subject (45 hrs) 3 credits

Res 601 Research Method

MENG6005 Quantitative Methods and Statistics (45 hrs) 3 credits

MAE 602 Thesis

Engineering Project/Thesis 24 credits

Candidates need to complete a 60000-words engineering dissertation (in Myanmar or English) and a 3000-words executive portfolio (in English).

This program requires the candidates to complete a dissertation as part of the assessment for the MSc (RE) degree. Doing a thesis means that instead of knowledge and information being presented and following a prescribed route for answering questions, candidates are thrust into an active role of managing an investigation into a topic area. This means researching and discovering things for themselves. They will have to set their own targets and parameters, pose their own central research questions and decide on the appropriate sources of information to support the research. It therefore requires the use of the higher-level cognitive skills of analysis, synthesis and evaluation. Candidates may choose an area of particular interest to them within the scope of course title. A dissertation is an individual effort and the candidate, academic tutor and the course professor will work together on constructing an approved topic (research question) and methodologies.

Engineering Dissertation Defense 9 credits

It is expected of Master's candidates to defend their thesis by means of a colloquium doctum (academic discussion). The purpose of the meeting is for the candidates to convince a panel of experts in the field of the dissertation how well they have done in the conducting of their research study and the preparation of their dissertation

Program Total Credits 48 credits

Candidates need to complete all course assessments with the results of Grade B+ or above.

IQY Master Diploma in Engineering Study Program

(240 credits including 120 Credits for Professional Diploma/ BE degree/ City & Guild Level 6 Diploma)

(St Clements University -Master of Applied Engineering)

PART (A) IQY Master Diploma in Engineering Part 1- 80 credits

(St Clements University's Graduate Diploma in Applied Engineering)

(STC Technological University Graduate Diploma in Engineering)

http://www.highlightcomputer.com/GraduateDiplomaEngineeringPractice.htm

BAE 701 Engineering Fundamental 10 Credits

The candidates need to down load the textbooks from given link

For every topic, you need to write the short note on what you understand, formula, summary, outlines and at least 2 problems solution (Please note, each problem is solved in short form, you need to clearly reproduce them by step by step)

After having done all above tasks, BAE 701 Engineering Fundamental will be completed.

BAE 702 Engineering Management 10 Credits

See the given site

View the videos, down load the lessons, study and then do the exercises.

BAE 703 Leadership & Human Resources Management 10 Credits

See the given site

View the videos, down load the lessons, study and then do the exercises,

BAE 704 Risk Management & Industrial Safety 10 Credits

See the given site

View the videos, down load the lessons, study and then do the exercises,

BAE 705 Engineering Competency Development 10 Credits

See the given site

View the videos, down load the lessons, study and then do the exercises,

Assignment

During your study

- List the subjects that you have learnt in your study at college/ university
- List the subjects that you have achieved the good mark and explain why and how you got it
- List the subjects that you just marginally passed and explain why it happened
- List the practical tasks that you have done at college/ university
- List any reference books, tuition classes, practical books that you have read at college/ university

After Graduation

- If you are working, provide your CV that shows the detailed of your employment
- If you have not worked, list any training, engineering books , online websites, online videos etc that you study

Your future plan

- Provide an outline what you want to be, what training you will attend, what practical tasks you will do. If you have already attended the trainings and courses, provide the certificates

BAE705 will be completed when you have done the above tasks

BAE 706 Engineering Report Writing 10 Credits

Study the given report format.

You need to read one news paper article or web information or if you can , visit a practical work site and then write a report by following steps

- Title
- Brief description of topics
- Contents
- Detailed information
- Reference data, photos, tables, diagrams to be inserted
- Conclusion
- Reference list

BAE706 will be completed when you have done the above tasks

BAE 707 Engineering Ethics 10 Credits

Society of Professional Engineers-UK

http://www.professionalengineers-uk.org/index.php/the-society/code-of-professional-conduct

Code of Professional Conduct

All individuals registered as Professional Engineers and those aspiring to become registered Professional Engineers shall deliver services in accordance with the Society's Code of Professional Conduct and shall:

1. Competence

a) only undertake professional tasks for which they are competent and will at all times exercise all reasonable professional skill and care to prevent avoidable danger to health or safety and the creation of adverse impacts on the environment.

b) maintain and broaden their knowledge, experience and competence and encourage others to do so.

2. Integrity

a) treat all persons fairly with respect and without bias

b) avoid where possible real or perceived conflict of interest and advise affected parties should such conflicts arise.

c) observe the proper duties of confidentiality owed to appropriate parties.

d) discharge their professional duties with integrity, impartiality and objectivity and have no involvement with any form of bribery.

3. Responsibility

a) accept appropriate responsibility for work carried out under their supervision.

b) assess relevant risks and liability and, if appropriate, have in force appropriate liability insurances.

c) notify the Society within 28 days:

- if convicted of a criminal offence other than parking fines or convictions for exceeding the speed limit:
- upon becoming bankrupt or disqualified as a Company Director:
- if they are removed from the membership of another professional body as the result of a matter relating to conduct.

d) notify the Society of any significant violation of the Code of Conduct by any Professional Engineer on the register or any aspiring member seeking to gain access to the register.

4. Information

a) co-operate with the Society and provide such information as may be requested to facilitate any investigation into the conduct of any Professional Engineer on the register or any aspiring member seeking to gain access to the register.

5. Relationships

a) have due regard to their duty of care to clients and not take advantage of any client or potential client for whatever cause or reason in obtaining and carrying out instructions.

b) put all terms of engagement in writing and state the fees to be charged; whenever practicable, these should be issued to the client before a project is begun.

c) inform his/her client immediately if it appears that his/her estimate as to the total fees to be charged is likely to be or will be exceeded.

d) take care not to mislead a client as to the range of services that a quoted fee is intended to cover and the amount of future fees which may be involved.
Note in respect of relationships: Any Professional Engineer on the register or any aspiring member seeking to gain access to the register shall not:

- accept a professional assignment if he/she is aware or has reasonable cause to suspect that another member is acting for the client in respect of the same assignment, until either the first contract has been determined by the client, or the other member has consented to him acting.

- induce a client to agree to pay sums of money which are not justified by reference to the work which the member has carried out or has been instructed to carry out.

- offer or give any fee, commission, discount or other inducement (financial or otherwise) to a third party in return for the introduction of clients or particular professional assignments unless, before entering into a legally binding agreement

  with that client he/she makes full disclosure to the relevant client of the nature or amount of such fee, commission, discount or inducement and the name of the person or persons to whom such fee, commission, discount or inducement was offered or given.

6. Practice

a) Ensure that in respect of any firm in which he/she is or is held out to be a sole proprietor, partner or a director or through which he/she practises or conducts business:

- the composition (list of partners or directors) is clearly stated on all appropriate documentation and that where there has been a material alteration to the composition, all clients of the firm or company are notified of the change promptly;
- the style or title does not adversely reflect upon his/her professional status as a Professional Engineer and the dignity and reputation of the engineering profession;
- the name is not misleading or liable to cause confusion with the public, nor does it imply any partnership arrangement with or endorsement of services by the Society.

b) Titles associated with the registration of Professional Engineers such as "PEng" and "PEng(UK)" and membership of the Society such as "Fellow of the Society of Professional Engineers", "Member of the Society of Professional Engineers", and all others relating to membership of the Society of Professional Engineers, and the designations FSPE, MSPE, Hon.FSPE, Hon.MSPE shall only be used or authorised to be used in connection with a partnership or company

- in the name of any partnership in which such member practises provided all the member's partners are similarly entitled to use the Title and designatory letters
- to describe the name of any company provided only that all the shareholders and/or members of such company and all the directors of such company are similarly entitled to use the Title.
- to describe the name of a firm or business which is not a partnership or company in which he/she practises provided such use of the Title does not give the impression that any other person or persons with whom such member is carrying on business or whom such member employs or with whom such member is associated in any way is entitled to use the same Relevant Title or, if the impression referred to is given, such other person or persons is or are similarly entitled to use the Title.

7. Managerial responsibility

a) In addition to the responsibilities referred to in the Rules of Professional Conduct, but subject to the following, any Professional Engineer on the register or any aspiring member seeking to gain access to the register shall be prima facie

responsible, as a matter of professional conduct, for the acts or omissions including, in particular, breach of any of the provisions of the Articles and Bye-Laws of the Society or these Rules of Professional Conduct of:

- any firm in which the member is, or holds him/herself out to be, or allows him/herself to be held out as a partner, or any firm which the member allows to use his/her name and/or style and title or designatory letters in any of its advertisements, publicity material or notepaper; and
- any company of which he/she is a director or any co-director of that company or any company which the member allows to use his/her name and/or style and title or designatory letters in any of its advertisements, publicity material or notepaper.

b) If any Professional Engineer on the register or any aspiring member seeking to gain access to the register is able to show that, without default on his/her part, he/she was not aware, and there was no reason for him to be aware at the time of any breach of these provisions by any firm or company referred to above and he/she had, prior to the breach, taken all reasonable steps to ensure that such a breach would not occur, then he/she shall not be in breach of this Rule.

8 Publicity and Advertising

a) Any Professional Engineer on the register or any aspiring member seeking to gain access to the register may publicise his/her services or permit another person to do so, but in doing so the member must have due regard to the standards set by the Advertising Standards Authority and any standards set by any other regulatory or governmental authority in relation to advertising and ensure that any publicity for which he/she is in any way responsible is neither inaccurate nor misleading.

b) In all advertising, publicity material or public statements for which any Professional Engineer on the register or any aspiring member seeking to gain access to the register is in any way responsible, he/she shall avoid all claims of superiority over, or critical comparisons of, the services provided by other engineers and shall avoid any direct comparison of fees and charges levied by other engineers.

c) Any Professional Engineer on the register or any aspiring member seeking to gain access to the register may only refer to the name of a client in any advertising, publicity material or public statement if the prior written consent of that client is first obtained.

d) Advertisements or other publicity material issued by any Professional Engineer on the register or any aspiring member seeking to gain access to the register or

by a firm in which they are held out to be a partner or director or a company through which they practise or conducts their business may state (subject to compliance with any other relevant regulations or legal requirements) either expressly or implied that they, the firm or the company (as the case may be) offers expertise or specialist advice in relation to a particular field of engineering provided only that this is the case.

ASSIGNMENT

From newspaper, journal, internet, online chatting groups, show one event that signify the breach of engineering ethics such as use of substandard materials, breach of safety law, breach of fair practice, attempt to monopolizing , use of law and authority for safeguarding own benefits or personal associates , depressing others and highlight how engineering ethics are breached.

BAE 708 Engineering Knowledge 10 Credits

See the given site

From the list of the subject, select two subjects, ask me to send the e-Book. Then you have to do the followings

The students will have to write 20 pages study report for each of the subjects outlined below.
The report needs to include
 Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts

 Own idea on how to apply those concepts in real practical applications.

 Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)

 Your comment on each book

BAE708 will be completed when you have done the above tasks

PART (B) IQY Master Diploma in Engineering Part 2- (40 credits)

(St Clements University's Master of Applied Engineering)

(STC Technological University Master of Engineering)

BAE709-Design Project (40 credits)

You need to do a supervised design. In this unit, Singapore Institute of Engineering Technologists can provide the supervised design which is a part of Professional Engineers (UK) Assessment. If you do not want to apply for part of Professional Engineers (UK), IQY Technical College itself will provide design supervision that you can later use it to apply for Professional Engineers (UK)

See the given links for required engineering handbooks

You can ask the teacher to send you the e-Books if you want to use it for your selected design

IQY Master Diploma in Applied Science (Information Technology)

(240 credits including 120 Credits for Professional Diploma/ BE degree/ City & Guild Level 6 Diploma)

Master of Applied Science (Information Technology)

(St Clements University)

(240 credits including 120 Credits for Professional Diploma/ BE degree/ City & Guild Level 6 Diploma)

Follow the instructions in

http://www.highlightcomputer.com/MAppSCIT.pdf

The candidates will need to request the e-book for study

IQY Master Diploma in Renewable Energy Engineering

Master of Applied Engineering (St Clements University)

Master of Engineering (Renewable Energy)(STC Technological University)

(240 credits including 120 Credits for Professional Diploma/ BE degree/ City & Guild Level 6 Diploma)

Follow the instructions in

http://www.highlightcomputer.com/MScRE.pdf

The candidates will need to request the e-book for study

ADDITIONAL COURSE

Doctoral Research Studies

IQY Master Diploma in Research Studies

http://www.highlightcomputer.com/Master_of_Engineering.pdf

Only St Clements University will confer the Doctoral Degree while IQY Technical College will provide the joint supervision.

Dissertation for Doctorate

MAE 601 Research Method

MAE602 Thesis

http://www.filefactory.com/file/1l1r1k0ftawt/n/11.Research+Thesis_(ICT_605).zip

MAE601 Research Method

This course guides the student, step by step, through the research process, from problem selection through writing up results. It provides all of the basics necessary to complete a research project in any discipline.

Outline. The following aspects are reflected in this course:

What is research?

Tools of research

The problem: the heart of the research process

Review of the related literature

Planning your research design

Writing the research proposal

Qualitative research

Historical research

Descriptive research

Experimental and causal - comparative designs

Statistical techniques for analyzing quantitative data

Technical details: style, format, and organization of the research report

Doctoral Research Proposal

Synopsis: Research students are expected to present a written research proposal within three months after commencement. The proposal is handed in to the study leader.

Assessors of this proposal are selected by the faculty for their understanding of the field and the research involved. The purpose of a research is to set out a plan for conducting the research and writing the dissertation within the available time. It should take account of the availability and guidance of the study leader.

The starting point for a research proposal is the topic, which is the field of interest in which the research is to be carried out. In introducing the topic, the proposal should clarify the field that it falls into and the specific part that field which the research will explore.

It should clarify why the topic is of interest and importance, and how the proposed research

will contribute to the filed of knowledge or profession. The proposal should clarify the research questions, ensuring that these are specific and answerable.

It is important to show how these questions relate to the topic are, and how they will advance the student's contribution. The proposal should detail the research to be carried out, and clarify the research methods, the timeframe and the reasons for selecting particular methods.

Where a period of literature review or research should precede any empirical research, this should be factored in as part of the research. It is important to estimate any periods of field research and to flag their duration and cost in your research proposal.

MAE 602 Thesis

Thesis Dissertation for Doctorate

Candidates need to complete a 60000-words dissertation (in Myanmar or English) and a 3000-words executive portfolio (in English).

This program requires the candidates to complete a thesis as part of the assessment for the Doctorate

Doing a thesis / dissertation means that instead of knowledge and information being presented and following a prescribed route for answering questions, candidates are thrust into an active role of managing an investigation into a topic area. This means researching and discovering things for themselves.

They will have to set their own targets and parameters, pose their own central research questions and decide on the appropriate sources of information to support the research. It therefore requires the use of the higher-level cognitive skills of analysis, synthesis and evaluation. Candidates may choose an area of particular interest to them within the scope of course title.

Doctoral dissertation

A dissertation is an individual effort and the candidate, academic tutor and the course professor will work together on constructing an approved topic (research question) and methodologies.

Dissertation Defence for doctorate

It is expected of Doctoral candidates to defend their thesis by means of a colloquium (academic discussion). The purpose of the meeting is for the candidates to convince a panel of experts in the field of the dissertation how well they have done in the conducting of their research study and the preparation of their dissertation

Candidates need to complete all course assessments with the results of Grade B+ or above.

Weblink

www.highlightcomputer.com/iqymasterdiploma2.pdf

IQY Professional Diploma in Renewable Energy Engineering/
BE(Renewable Energy) STC Technological University-Online study

Pre-requisites
Year 10 to 12

Year 1-Diploma in Renewable Energy Engineering

List of subjects (Total 30 credits)
RE001- Foundation Studies in Renewable Energy and Sustainability
RE002- Grid Connected Photovoltaic Power Systems
RE003- Solar and Thermal Energy Systems
RE004- Energy Storage Systems
RE005- Renewable Energy Resource Analysis
RE006- Wind Energy Conversion Systems
RE007- Energy System Efficiency

Year 2 Advanced Diploma in Electro-Mechanical Engineering (Renewable Energy Construction) (Total 60 Credits)

Semester (1)
RE008-Mathematics & Physics (I)
RE009-Mathematics & Physics (II)
RE010-Engineering Materials
RE011-Civil & Mechanical Engineering
Semester (2)
RE012-Electrical Engineering
RE013-Electrical Machines
RE014-Electronics Control
RE015-Electrical Project
Final Project
RE016-Design & Management

Year 3+4 Bachelor of Applied Engineering Technology(Renewable Energy Engineering)

(2 points / unit x 15 units = 30 points)

Year 3

RE101	Mathematics 1A (MATH1131)
RE102	Mathematics 1B (MATH1231)
RE103	Physics 1A (PHYS1121)
RE104	Physics 1B (PHYS1221)
RE105	Engineering Design (ENGG1000)
RE106	Electronics & Telecomm Engineering (1) (ELEC1111)
RE107	Sustainable Energy (SOLA1070)

Year 4

RE201	Electronics & Telecomm Engineering (2) (ELEC1111)
RE202	Numerical Methods & Statistics (MATH2089)
RE203	Engineering Materials and Chemistry (MATS1101)
RE204	Project in PV and Solar Energy (SOLA2051)
RE205	Sustainable & Renewable. Energy. Technology (SOLA2053)
RE206	Introduction to Electronics Devices (SOLA2060)
RE207	Applied Photo Voltaics (SOLA2540)
RE208	Project Presentation

Bachelor of Engineering (Renewable Energy Engineering)
(2 points / unit x 15 units = 60 points+ Thesis)

Year 5

RE301	Low Energy Buildings and PV (SOLA3010)
RE302	PV Technology & Manufacturing (SOLA3020)
RE303	Software Engineering (COMP3111)
RE304	Analogue Electronics (ELEC2133)
RE305	Power Electronics (ELEC4614)
RE306	Electromagnetic Engineering (ELEC3115)
RE307	Circuits and Signals (ELEC2134)
RE308	Control Systems (ELEC3114)

Year 6

RE401	Fluid Mechanics (MMAN2600)
RE402	Thermodynamics (MMAN2700)
RE403	Computational Fluid Dynamics (MECH9620)
RE404	Strategic Leadership & Ethics (ELEC4122)
RE405	Grid-Connect PV System (SOLA4012)
RE406	Wind Energy Converters (SOLA5053)
RE407	Semiconductor Devices (SOLA5055)
RE408	Thesis

Total 120 Points + Thesis for award of Professional Diploma/Bachelor of Engineering (Renewable Energy Engineering)

ASSESSMENT MODE- Submission of Study Records/ Assignments/ Test in some subjects/ Project , Thesis

ONLINE ENROLMENT

http://www.iqytechnicalcollege.com/enrolment.htm

IQY Professional Diploma in Renewable Energy Engineering/
BE(Renewable Energy) STC Technological University-Online study

Pre-requisites
Year 10 to 12

Year 1-Diploma in Renewable Energy Engineering

List of subjects (Total 30 credits)
RE001- Foundation Studies in Renewable Energy and Sustainability
RE002- Grid Connected Photovoltaic Power Systems
RE003- Solar and Thermal Energy Systems
RE004- Energy Storage Systems
RE005- Renewable Energy Resource Analysis
RE006- Wind Energy Conversion Systems
RE007- Energy System Efficiency

Year 2 Advanced Diploma in Electro-Mechanical Engineering (Renewable Energy Construction) (Total 60 Credits)

Semester (1)
RE008-Mathematics & Physics (I)
RE009-Mathematics & Physics (II)
RE010-Engineering Materials
RE011-Civil & Mechanical Engineering
Semester (2)
RE012-Electrical Engineering
RE013-Electrical Machines
RE014-Electronics Control
RE015-Electrical Project
Final Project
RE016-Design & Management

Year 3+4 Bachelor of Applied Engineering Technology(Renewable Energy Engineering)

(2 points / unit x 15 units = 30 points)

Year 3

RE101	Mathematics 1A (MATH1131)
RE102	Mathematics 1B (MATH1231)
RE103	Physics 1A (PHYS1121)
RE104	Physics 1B (PHYS1221)
RE105	Engineering Design (ENGG1000)
RE106	Electronics & Telecomm Engineering (1) (ELEC1111)
RE107	Sustainable Energy (SOLA1070)

Year 4

RE201	Electronics & Telecomm Engineering (2) (ELEC1111)
RE202	Numerical Methods & Statistics (MATH2089)
RE203	Engineering Materials and Chemistry (MATS1101)
RE204	Project in PV and Solar Energy (SOLA2051)
RE205	Sustainable & Renewable. Energy. Technology (SOLA2053)
RE206	Introduction to Electronics Devices (SOLA2060)
RE207	Applied Photo Voltaics (SOLA2540)
RE208	Project Presentation

Bachelor of Engineering (Renewable Energy Engineering)
(2 points / unit x 15 units = 60 points+ Thesis)

Year 5

RE301	Low Energy Buildings and PV (SOLA3010)
RE302	PV Technology & Manufacturing (SOLA3020)
RE303	Software Engineering (COMP3111)
RE304	Analogue Electronics (ELEC2133)
RE305	Power Electronics (ELEC4614)
RE306	Electromagnetic Engineering (ELEC3115)
RE307	Circuits and Signals (ELEC2134)
RE308	Control Systems (ELEC3114)

Year 6

RE401	Fluid Mechanics (MMAN2600)
RE402	Thermodynamics (MMAN2700)
RE403	Computational Fluid Dynamics (MECH9620)
RE404	Strategic Leadership & Ethics (ELEC4122)
RE405	Grid-Connect PV System (SOLA4012)
RE406	Wind Energy Converters (SOLA5053)
RE407	Semiconductor Devices (SOLA5055)
RE408	Thesis

Total 120 Points + Thesis for award of Professional Diploma/Bachelor of Engineering (Renewable Energy Engineering)

ASSESSMENT MODE- Submission of Study Records/ Assignments/ Test in some subjects/ Project , Thesis

ONLINE ENROLMENT

http://www.iqytechnicalcollege.com/enrolment.htm

IQY Technical College Languages

www.iqytechnicalcollege.com/language.htm

MYANMAR ETHNICS LANGUAGES

Myanmar

Karen

Kachin

Chin

Shan

Mon

Kayah

Rakhine

Wa

Palaung

INTERNATIONAL LANGUAGES

English

French

Spanish

Chinese

Bengali

Danish

Finnish

Irish

Norwegian

Polish

Turkish

Urdu

Japanese

Korean

Hindi

Arabic

Greek

Italian

Russian

Hebrew

Thai

Khamer

Malay

Portuguese

Dutch

German

Farsi (Persian)

Vietnamese

Laotian

Indonesian

Mongolian

Filipino (Tagalog)

Icelandic

Serbian+Croatian

Tamil

Sinhala

Bhutanese(Dzongkha)

Nepali

Swedish

Finnish

Tibetan

Austrian

Albanian

Hungarian

Romanian

Fijian

Bulgarian

Diploma/ Advanced Diploma in Marine Engineering + Professional Diploma in Engineering (Marine & Mechanical)
Bachelor of Engineering (Marine & Mechanical)

Objective

The course prepares students for careers in

- Marine and Offshore Engineering - the selection, deployment and commissioning of machinery, machinery systems and operational systems for merchant and naval vessels plus offshore floating and fixed vessels/structures. Building on core fundamental engineering units, this degree specialises in associated mechanical and mechanical-electrical power generation, machinery and operational systems.

Diploma/ Advanced in Marine Engineering is 30 to 60 credit points diploma. Depending on the amount of study, the graduates can achieve Diploma or Advanced Diploma in Marine Engineering

The students who completed this diploma can proceed to third year and fourth year of Professional Diploma in Mechanical Engineering and can be graduated with Professional Diploma in Marine and Mechanical Engineering OR BE(Marine & Mechanical)

Please see

http://www.highlightcomputer.com/BEwithRE.pdf

http://www.highlightcomputer.com/Dip_Mar_E_Course_outline.pdf

Diploma/ Advanced Diploma in Automotive Engineering

Professional Diploma in Engineering (Automotive & Mechanical)
Bachelor of Engineering (Automotive & Mechanical)

Diploma/ Advanced in Automotive Engineering is 30 to 60 credit points diploma. Depending on the amount of study, the graduates can achieve Diploma or Advanced Diploma in Automotive Engineering

The students who completed this diploma can proceed to third year and fourth year of Professional Diploma in Mechanical Engineering and can be graduated with Professional Diploma in Automotive and Mechanical Engineering OR BE(Automotive& Mechanical)

Please see

http://www.highlightcomputer.com/BEwithRE.pdf

http://www.highlightcomputer.com/Dip_AE_Course_Outline.pdf

Professional Diploma in Engineering
(Naval Architecture)
Bachelor of Engineering (Naval Architecture)

Objective

The course prepares students for careers in

Naval Architecture - the shipbuilding industry, high-speed ferry industry, marine consultancy firms and in government in areas of commercial shipping, transport policy and administration and in the insurance sector.

Learning Outcomes

1. NavArch: Rationally apply comprehensive knowledge of the fundamental principles underpinning maritime engineering, with advanced knowledge of **ocean vehicle design, hydrodynamics, ship structures, and/or on-board systems and equipment** specific to the naval architecture discipline, using creativity, critical thinking and judgement.

   OceanEng: Rationally apply comprehensive knowledge of the fundamental principles underpinning maritime engineering, with advanced knowledge of **the design of offshore to coastal installations, subsea platforms and additional equipment and techniques for operations in the maritime environment** specific to the ocean engineering discipline, using creativity, critical thinking and judgement.

   MarOffEng: Rationally apply comprehensive knowledge of the fundamental principles underpinning maritime engineering, with advanced knowledge of **the design, procurement and installation of mechanical, electrical and thermal systems**, specific to the marine and offshore engineering discipline, using creativity, critical thinking and judgement.

2. Apply knowledge of research principles and management methods to devise, plan and execute a piece of engineering research with limited supervision.

3. Apply problem solving, design and decision-making methodologies to identify complex problems in both the maritime and wider engineering fields and to formulate innovative solutions with intellectual independence.

4. NavArch: Apply abstraction and analysis to complex problems specific to **ship design and construction industries and the wider maritime sector** whilst concurrently considering the implications of the solution in a global and sustainable context using appropriate engineering methods and tools.

   OceanEng: Apply abstraction and analysis to complex problems specific to **the design and development of offshore, subsea and coastal infrastructure and operations in the wider maritime sector** whilst concurrently considering the implications of the solution in a global and sustainable context using appropriate engineering methods and tools.

   MarOffEng: Apply abstraction and analysis to complex problems specific to **the maritime engineering industries** whilst concurrently considering the implications of the solution in a global and sustainable context using appropriate engineering methods and tools.

5. Demonstrate a high level of communication skills in professional practice and articulate complex knowledge, by written and oral means, to specialist and nonspecialist audiences; including clients, multi-disciplinary and multi-cultural project teams and stakeholders.

6. Demonstrate entrepreneurship and creativity, professional accountability and ethical conduct through the application of design, research and project management techniques while concurrently displaying an awareness of professional engineering practice.

7. Review personal performance, demonstrate independent initiatives and leadership as a means of managing continuing professional development, wellbeing and lifelong learning through engagement with stakeholders, colleagues and members of other professions.

Program of study

To qualify for the Professional Diploma/Bachelor of Engineering (Naval Architecture)

a student must complete 120 Credits

GENERAL STUDIES- 60 Credits

ENGR1204-Electronics (6pt)---------- -BAE405/408(EE)

ENGR1401 Professional Skills (2 pt)----------BAE608 (ME Yr 4)

ENGR1711 Engineering Design (2 pt) ----------BAE614 (ME Yr 4)

ENGR1721 Engineering Programming (2 pt)----------BAE601 (ME Yr 4)

ENGR1722Engineering Physics and Materials (4 pt)-----RE010+ EE204 (EE Adv Dip)

ENGR1732 Engineering Mechanics (4 pt)----------ME103 (Adv Dip ME) / BAE403 (Common Yr 3 BE)

MATH1121 Mathematics 1A (4 pt)---------- EE201/302 (EE Adv Dip)

MATH1122 Mathematics 1B (2 pt)---------- BAE401(Common Yr 3 BE)

ENGR2703 Mechanical Practice Certificate (6 pt) PC5 Certificate in Fitting/Machining, PC6 Certificate in Welding/ PC8 Certificate in Air-conditioning Refrigeration & Basic Servicing

ENGR2711 Engineering Mathematics (2 pt) ----------BAE402 (Common Yr 3)

ENGR2722 Analysis of Engineering Systems (6 pt)-----BAE502/BAE50 (Linear System+ Control System) (EE)/ME203 (Adv Dip ME)

ENGR2741 Mechanics and Structures (4 pt)----------RE011a/b Civil & Mechanical Engineering (Mechanical/Civil) (Common Yr 3 BE)

ENGR2751 Fluid Mechanics (2 pt units)----------BAE423 Fluid Mechanics (Civil)

ENGR2771 Dynamics (2 pt)----------BAE614 (ME Yr 4)
ENGR2776 Hydrostatics (2 pt) ----------ME201 (Adv Dip ME)

ENGR3781 Elements of Shipboard Safety (ESS) Certificate (4 units) MarE106 (Dip Mar E)

PHYS2712 Thermodynamics and Energy Systems (2 pt)------BAE404 (Common Yr 3 BE)

ME634 Pnuematics (2 pt) (Adv Dip ME)

ME303 Computer Aided Design (2 pt) (Adv Dip ME)

NAVAL ARCHITECTURE AND RELATED STUDY 60 Credits

ENGR2766 Ship Design and Construction ----------MarE113N (Dip Mar E)

NArch 601Ship Construction (Naval Architecture) Theory 40 Credits

Each 2 credits

MarE113NA Ship Repairing

MarE113NB Ship Construction Engineering

MarE113NC Principle of Ship Stability

ME206 Introduction to Turbo Machinery

Mar E 110 General Engineering Knowledge

Mar E 111 Motor Engineering Knowledge

Mar E 107 Marine Electrical Practice

ME 305 Corrosion Prevention

NArch 501 Naval Architecture

NArch 502 Ship Design and Construction

NArch 503 Practical Ship Design

NArch 504 Ship Stability Control

NArch 505 History of Ship Design Calculations

NArch 506 Ship Technology

NArch 507 Ship Building Methods.pdf

NArch 508 Ship Design Research

Mgt 508 Project Management

Mgt 605 Management

Mgt505 Quality Management

NArch 509 Ship Propulsion

NArch 602 Ship Construction (Naval Architecture) Project 20 Credits

Detailed Contents

ENGR1201 Electronics

Topic Description	Electronics provides students with an understanding of basic electronics. It includes: 1. Digital Electronics: digital design concepts, number systems and signed numbers, combinational logic and design, minimisation of logic expressions, hazards, sequential logic and design, finite state machines 2. Analog Electronics: circuit variables and elements, simple resistive circuits, techniques of circuit analysis 3. Microprocessors: introduction to microprocessors, sensors and motors, microprocessor programming 4. Workshop Practice: bonding methods, soldering and flux, planning and designing electronic equipment, printed circuit boards and microelectronics
Educational Aims	This topic aims 1. To provide students with a thorough understanding of the principles of combinational and sequential digital logic 2. To develop the fundamental theoretical and practical skills required to carry out the design and analysisof digital electronic circuits 3. To introduce the elements and basic operation of a microprocessor 4. To introduce the manufacture and processes of thick and thin film microelectronics, printed circuit boards, and surface mount packages, the processes, practice, and assessment of soldering, component mounting and other connection methods, and fire safety
Expected Learning Outcomes	At the completion of this topic, students are expected to be able to: 1. Analyse, design and construct simple digital circuits 2. Analyse, design and construct simple finite state machines 3. Understand and apply basic principles of electric circuit theory 4. Understand and use electrical components and instruments 5. Have knowledge and understanding of microprocessors, motors and sensors 6. Write simple programs for a microcontroller 7. Have knowledge and understanding of microelectronics, printed circuit boards and surface mount technology 8. Perform and assess electronics assembly tasks, such as soldering and wiring

ENGR1401 Professional Skills

Topic Description	This topic provides an introduction to engineering with a focus on the role of the engineering team in providing a range of products and services. The initiation, planning and development of engineering projects including such subjects as feasibility studies, design and performance specifications, construction, testing and evaluation, operation and maintenance of engineering systems and the optimum use of resources. Aside from technical considerations, the topic will consider the social, economic, political, environmental and ethical issues related to engineering projects as well as the relevant communication and interpersonal skills.
Educational Aims	The aim of this topic is to introduce students to the general nature of engineering and the core professional practices associated with an engineering project. The topic is to develop an understanding of the nature of engineering a range of transferable skills and knowledge including engineering project planning, feasibility and design, oral and written communication skills, meeting procedures, and the ability to work as a group.
Expected Learning Outcomes	At the completion of the topic, students are expected to be able to: 1. Understand the role of engineers in society and the purposes of engineering projects 2. Understand the basic processes involved in engineering planning and design 3. Apply systems concepts and elementary optimisation theory to the modelling of engineering processes 4. Use decision theory and basic economic analysis for the evaluation of engineering projects 5. Work effectively in a group on a complex problem 6. Demonstrate an ability to apply scientific and engineering methodology 7. Work effectively as part of a team, in project formulation and the execution of feasibility studies 8. Have taken account of environmental and social issues and the human factor in analysing and designing engineering or other complex systems 9. Understand the principles of sustainable development 10. Have a basic competency in the use of word processors, spreadsheets, graphics packages and project management software 11. Use a style guide, write a report, present a set of logically related ideas in spoken and written form, implement appropriate meeting procedures, and prepare and deliver a seminar

ENGR1711 Engineering Design

Topic Description	Initiation, planning and development of engineering projects including such subjects as feasibility studies, design and performance specifications, creativity, decision theory, construction, testing and evaluation, operation, maintenance and sustainability of engineering systems and the optimum use of resources. Social, economic, political, international and environmental issues related to engineering projects. Drawing and documentation standards, theory and practice, including design and modelling software.
Educational Aims	This topic introduces students to the general nature of and the core professional practices associated with engineering design in the context of engineering projects, with emphasis on the social, economic, political, international and environmental issues. The topic also develops skills in drawing and documentation.
Expected Learning Outcomes	At the completion of the topic, students are expected to be able to: 1. Appreciate the role of engineers in society and the purposes of engineering projects 2. Understand the basic processes involved in engineering planning and design 3. Apply systems concepts and elementary optimisation theory to the modelling of engineering processes 4. Use decision theory and basic economic analysis for the evaluation of engineering projects 5. Identify and consider the social, economic, political, international and environmental dimensions of an engineering project 6. Apply the principles of sustainable development 7. Use software tools for engineering drawing, modelling and documentation

ENGR1721 Engineering Programming

Topic Description	The topic is intended as a first course in programming for students who intend to major in engineering. It aims to introduce students to the basic tools and techniques of software development and engineering packages such as Matlab. The topic will cover the following material: the structure of a program, sequence, selection, iteration, assignment and expressions, arrays, operations, input and output, and principles of design and development, testing, and maintenance.
Educational Aims	The topic aims to help develop: 1. An understanding of the nature of programming 2. The ability to read, comprehend and write simple programs 3. The application of appropriate development tools 4. An appreciation of the process by which software systems are developed, including their specification, design, implementation, testing and maintenance
Expected Learning Outcomes	At the completion of this topic, students are expected to be able to: 1. Demonstrate that they can comprehend basic program control constructs of sequence, selection, and iteration 2. Demonstrate that they can use programming development environments and tools within a defined context 3. Demonstrate that they can read pseudo-code and translate it into a readable, working program

	4. Demonstrate that they know the basics of testing and debugging 5. Demonstrate that they can apply programming principles to solve domain-specific problems

ENGR1722 Engineering Physics and Materials

Topic Description	Engineering Materials: 1. Atomic structure and bonding 2. Structure of metals, ceramics, polymers and composites 3. Material properties 4. Application of Materials 5. Economic, environmental, and societal Issues Electromagnetism: 1. Electric charge and electric field 2. Electric potential 3. Electric current and resistance 4. Magnetism 5. Introduction to Electromagnetic waves
Educational Aims	This topic aims to provide students with: 1. A basic understanding of the underlying science and the engineering performance of materials used in engineering applications 2. An understanding of the fundamental principles of electromagnetism
Expected Learning Outcomes	At the completion of this topic, students are expected to be able to: 1. Understand the classification, structure and application of materials 2. Evaluate the mechanical properties of materials with regards to elastic and plastic deformation 3. Understand the economic, environmental, and societal Issues related to materials use 4. Understand and communicate the basic principles of electromagnetism 5. Apply the concepts of electromagnetism for solving engineering problems

ENGR1732 Engineering Mechanics

Topic Description	Statics: Force Vectors (vector operations, vector addition of forces, addition of a system of coplanar forces, Cartesian vectors, addition of Cartesian vectors, position vectors, force vector directed along a line, dot product); Force System Resultants (moment of a force, scalar and vector formulations, principle of moments, moment of a force about a specified axis, moment of a couple, simplification of a force and couple system); Equilibrium of a Rigid Body (equilibrium and free-body diagrams 2D/3D, equations of equilibrium (2D/3D), two- and three-force members); Dry Friction (theory of dry friction, equilibrium, impending motion, motion, characteristics of dry friction, problems involving dry friction). Particle Dynamics: Kinematics (rectilinear kinematics: continuous motion, general curvilinear motion - rectangular components, motion of a projectile); Kinetics - Force and Acceleration (Newton's 2nd Law of Motion, equation of motion for a system of particles, equation of motion - rectangular coordinates), Work and Energy (work of a force, principle of work and energy for a system of particles, power and efficiency, conservative forces and potential energy, conservation of energy); Impulse and Momentum (principal of linear impulse and momentum, conservation of linear momentum, impact).
Educational Aims	This topic is a fundamental topic upon which most of the later year engineering topics build. This topic aims to ensure that the students understand both basic laws as they apply to static and dynamic mechanical systems and the theory and laws applicable to fundamental electrical circuits.
Expected Learning Outcomes	At the completion of this topic, students are expected to be able to: 1. Understand concepts of static force systems (machines and structures) 2. Understand in depth the skills to analyse these force systems and the physical meaning of force and moment equilibrium 3. Acquire the skill to draw free-body diagrams and apply the equations of equilibrium for 2D and 3D rigid bodies 4. Understand the characteristics of dry friction and how to analyse problems involving dry friction 5. Understand the dynamic properties of particles and rigid bodies 6. Write the relevant equations of motion associated with Force, Torque and Acceleration, Work and Energy, Impulse and Momentum 7. Solve engineering problems dealing with the static and dynamical motion of particles subject to forces and accelerations

MATH1121 Mathematics 1A

Topic Description	This topic together with MATH1122 Mathematics 1B is designed for students who have studied SACE Stage 2 Mathematics and who wish to proceed to a degree in any discipline which requires higher level mathematics. It is the standard prerequisite for all higher level topics in mathematics that require knowledge of first year mathematics. The material covered includes: functions, limits and continuity, differential calculus, computation of derivatives, the chain rule, Intermediate Value and Mean Value Theorems. Applications to graphing, rates of change, maxima and minima. Complex numbers, Euler's formula, complex exponential. Three-dimensional analytic geometry, matrices, systems of linear equations, vectors, equations of lines and planes.
Educational Aims	This topic introduces the basic concepts and techniques of differential calculus, complex numbers, linear algebra, systems of equations and matrices and provides the foundation for all areas requiring first year university mathematics. Intensive hands-onapproach in the workshops aims to provide the students the essential skills in mathematical manipulations within the context of the course. The topic aims to develop a modelling and problem solving approach to mathematics and its applications through an appropriate combination of the underlying concepts and the facility of mathematical software.
Expected Learning Outcomes	At the completion of the topic, students are expected to be able to: 1. Understand the key concepts which underlie single-variable differential calculus and linear algebra 2. Be familiar with the basic facilities available in Maplemathematical software 3. Use problem solving, critical and reasoning abilities

MATH1122 Mathematics 1B

Topic Description	This topic is a continuation of material of MATH1121 Mathematics 1A and together with MATH1121 Mathematics 1A is intended to provide access to all higher level mathematics topics which require knowledge of standard first year mathematics. The emphasis is on a modelling approach to mathematics and its applications within a coherent framework. The material covered includes elementary transcendental functions. Integral calculus, fundamental theorem of the calculus, standard techniques of integration including substitution, parts, partial fractions, application to motion, arclength, area, volumes and solids of revolution, Taylor polynomials, series, power series, introduction to elementary differential equations, simple harmonic motion. Systems of linear equations, Gaussian elimination, matrix algebra and determinants.
Educational Aims	This topic is a continuation of the material of MATH1121 Mathematics 1A. This topic develops the properties of elementary transcendental functions and introduces key ideas and applications of integral calculus, matrix algebra and linear algebra.
Expected Learning Outcomes	At the completion of this topic, students are expected to be able to: 1. Have a knowledge of the basic properties of the elementary transcedental functions 2. Understand and apply the key ideas and methods of integral calculus 3. Understand and analyse the relation between differential and integral calculus

	4. Understand and apply key ideas from linear and matrix algebra to the solution of systems of linear equations 5. Develop further skills in the use of computational technology 6. Have enhanced problem solving, criical and reasoning abilities 7. Appreciate the historical context underlying the development of modern mathematical principles and ideas 8. Have an informed appreciation of the wide applicability of integral calculus and matrix algebra in other areas of Science and Engineering

ENGR2703 Mechanical Practice Certificate

Topic Description	The topic covers exposure and practice in common mechanical and materials techniques including occupational health and safety, heat treatment, gas metal arc welding, manual metal arc welding, fabrication techniques, gas tungsten arc welding, machining techniques, marking off and hand tools.
Educational Aims	To give students an understanding of, practice in and an understanding of the safety requirements of common mechanical engineering techniques.
Expected Learning Outcomes	At the completion of this topic, students are expected to be able to have received traning on OH&S and practical skills essential to being a mechanical engineer, specifically heat treatment, gas metal arc welding, manual metal arc welding, fabrication techniques, gas tungsten arc welding, machining techniques, marking off and hand tools.

ENGR2711 Engineering Mathematics

Assumed Knowledge	An understanding of fundamental concepts of calculus and linear algebra.
Topic Description	First order ODE (Existence and uniqueness, separable, exact equations), linear ODE (Existence and Uniqueness, constant coefficient homogenous, variable coefficient homogenous, constant coefficient nonhomogeneous), boundary value problems. Vectors and the geometry of Space, dot and cross product, equations of lines and planes; Vector Functions, derivatives and integrals of vector functions, velocity and acceleration in space; Partial Derivatives, tangent planes and approximation, chain rule, directional derivatives, maximum and minimum values. Double and Triple Integrals. Vector Fields, Line integrals. Curl and Divergence, Stokes' Theorem. The Divergence Theorem.
Educational Aims	This topic equips the students with the skills needed to solve mathematical problems with several variables, linear systems, and differential equations. These provide the mathematical pre-requisites that the student needs for the second and higher year Engineering topics. The focus is on the application of the mathematical ideas to Engineering problems.
Expected Learning Outcomes	At the completion of the topic, students are expected to be able to: 1. Understand and be able to apply Multivariate Calculus to Engineering problems 2. Understand and be able to apply Differential Equations to Engineering problems

ENGR2722 Analysis of Engineering Systems

Topic Description	Review of linear systems, vector spaces, orthogonality, eigenvalues and eigenvectors, linear transformations. Continuous and discrete time signals, unit impulse and unit step signals, impulse response, step response, linear time invariant (LTI) systems, convolution, correlation, system transfer function, frequency response, Fourier transform, DFT (Discrete Fourier Transform), Periodic signals, Fourier series, Nyquist frequency, sampling theorem, aliasing, Laplace transform, bilinear transfer functions, magnitude and phase responses, Bode plots.
Educational Aims	This topic is an introduction to the concepts and theories of linear algebra and signal analysis and their application to engineering systems.
Expected Learning Outcomes	At the completion of this topic, students are expected to be able to: 1. Understand Linear Algebra and Signal Analysis from a Mathematical perspective 2. Be able to apply Linear Algebra and Signal Analysis to Engineering problems

ENGR2741 Mechanics and Structures

Topic Description	Principles of Statics (Review); Centre of Gravity, Centroid and Moment of Inertia; Distributed Forces; Stress and Strain; Mechanical Properties of Materials: Ductile/Brittle Materials, Hooke's Law, Poisson's Ratio; Axial load; Torsion; Bending: Shear Force and Bending Moment Diagrams; Stress Concentrations; Transverse Shear; Combined Loadings; Transformation of Stress and Strain: Mohr's Circle; Design of Beams and Shafts.
Educational Aims	This topic gives students an understanding of the basic statics concepts associated with engineering mechanics and structures.
Expected Learning Outcomes	At the completion of this topic, students are expected to be able to: 1. Develop and employ principles of Statics in solving problems 2. Learn how to determine centroids and moment of inertias and how to find resultant of distributed loadings 3. Understand concepts of stress, strain and mechanical properties of materials 4. Analyse axial, torsional, bending, transverse stresses and their combinations in structures and machine components 5. Calculate in-plane stresses and strains, their orientations and transformations through Mohr's circle, and calculate principal stresses and strains 6. Develop methods for designing beams to resist both bending and shear loads; prismatic and fully stressed beam designs

ENGR2751 Fluid Mechanics

Topic Description	Fluid Mechanics: Fluid properties; Hydrostatics; One dimensional flow of incompressible fluids; Continuity, momentum and energy equations; Laminar and turbulent flows in pipes and ducts; free surface and channel flows; hydraulic jump; weir and waterfall; Dimensional analysis; Flow measurements and fluid machinery.
Educational Aims	This topic aims to ensure that the students understand the following: 1. Modelling the flows of fluids 2. Measurements of the flows of fluids 3. Heat transferred to and from a fluid
Expected Learning	At the completion of this topic, students are expected to be able to:

Outcomes	1. Understand the basic properties of gases and liquids 2. Write the relevant equations of motion for fluids in pipes and channels 3. Solve simple flow problems 4. Understand how flow measurements are made in practice 5. Understand the flows in pumps and turbines

ENGR2771 Dynamics

Topic Description	1. Particle dynamics: Curvilinear motion, Force and acceleration, Work and Energy, Impulse and Momentum 2. Rigid body dynamics: Planar Kinematics, Force, Torque and Acceleration, Work and Energy, Linear and Angular Impulse and Momentum 3. Vibrations
Educational Aims	This topic aims to ensure that the students understand Kinematics and Kinetics as applied to particles and rigid bodies; and vibration.
Expected Learning Outcomes	At the completion of this topic, students are expected to be able to: 1. Understand the dynamic properties of particles and rigid bodies 2. Write the relevant equations of motion associated with Force, Torque and Acceleration, Work and Engery, Impulse and Momentum 3. Understand the creation and effects of vibration

ENGR2776 Hydrostatics

Topic Description	Geometry of surface vessels; Tabular methods of integration; Mass addition, removal and transfer; Elementary principle of transverse intact stability; Heeling moments and angles, and free surface effects; Inclining experiment; Elementary principles of trim; The Intact Stability Booklet; partially-afloat condition; Damage stability.
Educational Aims	This topic aims to ensure that the students understand the following: 1. Fundamentals of hydrostatics and concepts of statical stability, and trim of intact and damaged vessels 2. Introduction to the practical implications and applications of hydrostatic concepts 3. Generation of all relevant stability criteria data required for both design development and operational purposes 4. Introduction and development of a working knowledge of stability regulations
Expected Learning Outcomes	At the completion of the topic, students are expected to be able to: 1. Calculate hydrostatic data for any floating structure and predict the influence of geometric parameters on a vessel's stability characteristics 2. Interpret a vessel's response to any loading condition from lever and moment curves 3. Calculate and assess a vessel's damage stability response 4. Undertake an inclining experiment according to industry best practice

ENGR3781 Elements of Shipboard Safety (ESS) Certificate

Topic Description	Course content: 1. Elements of fire prevention on board the vessel 2. Theory of combustion and methods of extinguishing fire 3. Practical training in the use of portable fire fighting appliances 4. Practical training in launching, boarding and survival in an inflatable life raft, including man overboard procedures 5. Elements of accident prevention as they apply to the shipboard work place, particularly as they apply to falls, working in close proximity to machinery and moving objects, confined spaces, personal protective equipment and hygiene
Educational Aims	To ensure that students understand basic safety requirements when on board a vessel.
Expected Learning Outcomes	Understand the elements of fire prevention on board the vessel, including the theory of combustion and methods of extinguishing fire. Practical training in the use of portable fire fighting appliances. Practical training in launching, boarding and survival in an inflatable life raft, including man overboard procedures. Elements of accident prevention.

PHYS2712 Thermodynamics and Energy Systems

Topic Description	1. Concepts and Definitions of Thermodynamics 2. Energy and the First Law of Thermodynamics 3. Properties of Substances 4. Ideal and Real Gases 5. Control Volume Analysis Using Energy 6. The Second Law of Thermodynamics 7. Entropy and Entropy Balance for Closed Systems and Control Volumes; Cycle Processes 8. Thermodynamic Equilibrium 9. Phase Diagrams 10. Vapour Power Systems 11. Gas Power Systems 12. Refrigeration and Heat Pump Systems
Educational Aims	In this topic students will learn the fundamentals of Thermodynamics. The students will learn how to apply the concepts to solve experimental problems. Students will learn how to apply the fundamental principles of thermodynamics to predict the behaviour of energy systems and properly design required energy systems.
Expected Learning Outcomes	At the completion of this topic, students are expected to be able to: 1. Demonstrate the understanding of the concepts of Thermodynamics and to apply them to experiments 2. Understand how solids, liquids and gases behave under different temperature and pressure conditions

	3. Apply thermodynamic concepts to energy systems 4. Analyse thermodynamic cycles such as power and refrigeration cycles 5. Apply the concepts of Thermodynamics to laboratory experiments

ENGR2766 Ship Design and Construction

Topic Description	DESIGN: Vessel Types. Design Process & Constraints. Design Analyses & Techniques. Hull Form. Introduction to Propulsor Options. Introduction to Prime Mover Options. Introduction to Structural Systems. Primary Deck Machinery and Installation Considerations. Terminologies and Definitions. CONSTRUCTION: Environmental Framework: Commercial, industrial, legal and regulatory aspects of the ship production industry. Assembly Methodologies: Historical, current and alternative methods adopted in the construction of steel and aluminium vessels. Modular and parallel production methods. Composite Vessel Production: Materials and construction methods for composite vessels and components. Dimensional Control: Referencing moulded dimensions. Symbologies of structural and working drawings. Construction, Launching and Repair Facilities: Shipyard facilities, arrangement and strategic equipment, launching and docking methods. Fabrication Technologies: Cutting, welding and forming technologies. Production and Quality Management: Introduction to the requirement and tools available for production co-ordination and quality assurance.
Educational Aims	1. To provide an introduction to issues influencing a vessel's design 2. To introduce certain fundamental aspects of the rational and engineering approach to marine design 3. Establish an understanding of the considerations essential in the determination of hull characteristics, general arrangement and requisite systems 4. To provide the student with an understanding of the overall philosophy and techniques involved in the manufacture of ships and the context in which the processes are carried out 5. To provide practical experience with commercial surface modelling software and illustrate the scope of Computer Aided Design And Manufacture
Expected Learning Outcomes	At the completion of the topic, students are expected to be able to: 1. Demonstrate a basic knowledge of regulatory, practical and economic constraints on design and production of an ocean vehicle 2. Develop a concept design based on an appraisal of operational requirements via a clearly structured and rational process 3. Identify issues regarding the methodology and efficiency of production for any particular vessel and recognise the concepts of ship production system design and main hardware elements of shipyards 4. Effectively combine the use of conventional design tools with naval architecture design software to produce a limited set of design drawings and models in accordance with industry standards and codes of practice

ENGR2768 Offshore Engineering

Topic Description	Marine Sciences - a) Meteorology: regional weather systems and seasonal variations. Global pressure, air mass movement and circulation patterns. Prediction of local weather. Storms and tropical cyclones. b) Physical Oceanography: ocean structure, physical and chemical properties. Global ocean circulations, tides, waves, winds and currents. Marine resources - mineral, biological and energy. c) Marine Geology: geomorphology of the ocean floors, margins and shelves. Sedimentation and origins of hydrocarbons and minerals in the oceans. Formation and classification of coastal regions Ocean Renewable Energy - Renewable energy systems - wave power, wind power, thermal power and tidal power. Marine Transportation - Environmental forces and voyage planning. Introduction to work vessels and offshore structures. Structures - loading, stability and ballast control. Load-out and sea-transport of modules. Loads during transit and sea-fastening design. Operational codes and practices. Construction and Installation - Installation of fixed, floating and subsea structures. Lifting operations and mooring systems. Diving and ROV operations. Maintenance and repair of offshore installations. Removal and salvage of offshore production facilities. Risk assessment and management on offshore operations and on structures.
Educational Aims	The aim of this unit is to provide students with general skills and knowledge on the range of engineering operational activities in the offshore sector. The scope of the unit encompasses the essential theories of marine science and basic knowledge to plan and manage marine operations, including offshore installation, inspection and maintenance.
Expected Learning Outcomes	At the completion of this topic, students are expected to be able to: 1. Demonstrate a fundamental knowledge of marine geology, physical oceanography and marine meteorology and its applications to a range of offshore technical problems 2. Describe the equipment, technology and methods that are fundamental to common offshore engineering activities 3. Apply scientific knowledge to solve a range of engineering problems 4. Understand the differences between designing and building offshore structures from terrestrial structures

Master of Engineering (St Clements University) together with Professional Diploma in Engineering

This program is designed as Practical Engineers and Technicians who are working in Industries without BE/BTech Qualifications but possesses the experience and need the formal qualification papers.

On completion of this program, the graduates will receive the followings

- Professional Diploma in Engineering (IQY Technical College)
- Master Diploma in Engineering (IQY Technical College)
- Bachelor of Engineering (STC Technological University)
- Master of Engineering (St Clements University)

Entry Requirements

- Any Diploma/ Degree other than BE/BTech/AGTI

Study Stage 1

Teaching plan for Advanced Diploma/ Professional Diploma in Engineering . The detailed contents can be flexibility negotiated between the candidate and supervisor that the candidate is allowed to choose the most relevant contents for their work.

The subjects can be chosen from the following link

http://www.iqytechnicalcollege.com/offeredcourses.htm

On completion of Stage 1, Professional Diploma in Engineering (IQY Technical College) and Bachelor of Engineering (STC Technological University) will be issued.

Specific Discipline-

Based on the subjects that you chose, the appropriate discipline will be written on your testamur which will be sent electronically and you need to download/ print in colour and laminate it.

The list of graduates will also be expressed on our IQY website

Study Stage 2 Part A

IQY Master Diploma in Engineering

(240 credits including Bachelor Degree 120 credits)

(St Clements University -Master of Applied Engineering)
(STC Technological University-Master of Engineering)

Study Program

PART (A) IQY Master Diploma in Engineering Part 1-

(St Clements University's Graduate Diploma in Applied Engineering)

(STC Technological University Graduate Diploma in Engineering) (80 credits at 10 credits/ unit)

Download from given link

BAE 701 Engineering Fundamental

Download from given link

The candidates need to down load the following textbooks

Electrical

Download from given link

Then study **Section 4-Electrical Engineering (PDF File Page 885)**

For every topic, you need to write the short note on what you understand, formula, summary, outlines and at least 2 problems solution (Please note, each problem is solved in short form, you need to clearly reproduce them by step by step)

Mechanical

Then study **Section 3-Mechanical Engineering (PDF File Page 307)**

For every topic, you need to write the short note on what you understand, formula, summary, outlines and at least 2 problems solution (Please note, each problem is solved in short form, you need to clearly reproduce them by step by step)

Civil

Download from given link

Section 1-Civil Engineering (PDFFile Page 7)

Section 6- Water & Waste Water Engineering (PDF File Page 1041)

Section 7-Environmental Engineering (PDF File Page 1078)

For every topic, you need to write the short note on what you understand, formula, summary, outlines and at least 2 problems solution (Please note, each problem is solved in short form, you need to clearly reproduce them by step by step)

Telecommunication

Myanmar Text Books

DTE301M Part A-Network Management-Telecom Circuit Analysis

Download from given link

DTE301M Part B-Network Management-Telecommunication Network Analysis-LC Calculation

Download from given link

DTE303M Part A-Telecom Engg-Line Communication Theory Part 1

Download from given link

DTE303M Part B-Telecom Engg-Line Communication Theory Part 2

Download from given link

DTE306-Wireless Communication

Download from given link

For every topic, you need to write the short note on what you understand, formula, summary, outlines and at least 2 problems solution (Please note, each problem is solved in short form, you need to clearly reproduce them by step by step)

After having done all above tasks, BAE 701 Engineering Fundamental will be completed.

Renewable Energy Engineering

BAE701 and BAE708 can be concurrently completed , the list of units that you need to study will be advised. You need to study at least one unit for BAE701 and at least one unit for BAE708

Reference links

Download from given link

BAE701

For every topic, you need to write the short note on what you understand, formula, summary, outlines and at least 2 problems solution (Please note, each problem is solved in short form, you need to clearly reproduce them by step by step)

After having done all above tasks, BAE 701 Engineering Fundamental will be completed.

BAE708

From the list of the subject, select two subjects, ask me to send the e-Book. Then you have to do the followings

The students will have to write 20 pages study report for each of the subjects outlined below.
The report needs to include
 Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts

 Own idea on how to apply those concepts in real practical applications.

 Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)

 Your comment on each book

ICT Engineering

BAE701 and BAE708 can be concurrently completed , the list of units that you need to study will be advised. You need to study at least one unit for BAE701 and at least one unit for BAE708

Reference links

Download from given link

BAE701

For every topic, you need to write the short note on what you understand, formula, summary, outlines and at least 2 problems solution (Please note, each problem is solved in short form, you need to clearly reproduce them by step by step)

After having done all above tasks, BAE 701 Engineering Fundamental will be completed.

BAE708

From the list of the subject, select two subjects, ask me to send the e-Book. Then you have to do the followings

The students will have to write 20 pages study report for each of the subjects outlined below.
The report needs to include
 Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts

 Own idea on how to apply those concepts in real practical applications.

 Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)

 Your comment on each book

BAE 702 Engineering Management

See the site

Download from given link

View the videos, down load the lessons, study and then do the exercises in

Exercises Download Link

Download from given link

BAE 703 Leadership & Human Resources Management

See the site

Download from given link

View the videos, down load the lessons, study and then do the exercises in

Exercises Download Link

Study Guide

Download from given link

Download from given link

BAE 704 Risk Management & Industrial Safety

Download from given link

View the videos, down load the lessons, study and then write an essay

" How I will assess the risks in my workplace" You can write 3 to 5 pages.

BAE 705 Engineering Competency Development

Download from given link

View the videos, down load the lessons, study

Assignment

During your study

- List the subjects that you have learnt in your study at college/ university
- List the subjects that you have achieved the good mark and explain why and how you got it
- List the subjects that you just marginally passed and explain why it happened
- List the practical tasks that you have done at college/ university
- List any reference books, tuition classes, practical books that you have read at college/ university

After Graduation

- If you are working, provide your CV that shows the detailed of your employment
- If you have not worked, list any training, engineering books , online websites, online videos etc that you study

Your future plan

- Provide an outline what you want to be, what training you will attend, what practical tasks you will do. If you have already attended the trainings and courses, provide the certificates

BAE705 will be completed when you have done the above tasks

BAE 706 Engineering Report Writing

Study Download from given link

You need to read one news paper article or web information or if you can , visit a practical work site and then write a report by following steps

- Title
- Brief description of topics

- Contents
- Detailed information
- Reference data, photos, tables, diagrams to be inserted
- Conclusion
- Reference list

BAE706 will be completed when you have done the above tasks

BAE 707 Engineering Ethics

Society of Professional Engineers-UK

http://www.professionalengineers-uk.org/index.php/the-society/code-of-professional-conduct

Code of Professional Conduct

All individuals registered as Professional Engineers and those aspiring to become registered Professional Engineers shall deliver services in accordance with the Society's Code of Professional Conduct and shall:

1. Competence

a) only undertake professional tasks for which they are competent and will at all times exercise all reasonable professional skill and care to prevent avoidable danger to health or safety and the creation of adverse impacts on the environment.

b) maintain and broaden their knowledge, experience and competence and encourage others to do so.

2. Integrity

a) treat all persons fairly with respect and without bias

b) avoid where possible real or perceived conflict of interest and advise affected parties should such conflicts arise.

c) observe the proper duties of confidentiality owed to appropriate parties.

d) discharge their professional duties with integrity, impartiality and objectivity and have no involvement with any form of bribery.

3. Responsibility

a) accept appropriate responsibility for work carried out under their supervision.

b) assess relevant risks and liability and, if appropriate, have in force appropriate liability insurances.

c) notify the Society within 28 days:

- if convicted of a criminal offence other than parking fines or convictions for exceeding the speed limit:
- upon becoming bankrupt or disqualified as a Company Director:
- if they are removed from the membership of another professional body as the result of a matter relating to conduct.

d) notify the Society of any significant violation of the Code of Conduct by any Professional Engineer on the register or any aspiring member seeking to gain access to the register.

4. Information

a) co-operate with the Society and provide such information as may be requested to facilitate any investigation into the conduct of any Professional Engineer on the register or any aspiring member seeking to gain access to the register.

5. Relationships

a) have due regard to their duty of care to clients and not take advantage of any client or potential client for whatever cause or reason in obtaining and carrying out instructions.

b) put all terms of engagement in writing and state the fees to be charged; whenever practicable, these should be issued to the client before a project is begun.

c) inform his/her client immediately if it appears that his/her estimate as to the total fees to be charged is likely to be or will be exceeded.

d) take care not to mislead a client as to the range of services that a quoted fee is intended to cover and the amount of future fees which may be involved.
Note in respect of relationships: Any Professional Engineer on the register or any aspiring member seeking to gain access to the register shall not:

- accept a professional assignment if he/she is aware or has reasonable cause to suspect that another member is acting for the client in respect of the same assignment, until either the first contract has been determined by the client, or the other member has consented to him acting.

- induce a client to agree to pay sums of money which are not justified by reference to the work which the member has carried out or has been instructed to carry out.

- offer or give any fee, commission, discount or other inducement (financial or otherwise) to a third party in return for the introduction of clients or particular professional assignments unless, before entering into a legally binding agreement

  with that client he/she makes full disclosure to the relevant client of the nature or amount of such fee, commission, discount or inducement and the name of the person or persons to whom such fee, commission, discount or inducement was offered or given.

6. Practice

a) Ensure that in respect of any firm in which he/she is or is held out to be a sole proprietor, partner or a director or through which he/she practises or conducts business:

- the composition (list of partners or directors) is clearly stated on all appropriate documentation and that where there has been a material alteration to the composition, all clients of the firm or company are notified of the change promptly;

- the style or title does not adversely reflect upon his/her professional status as a Professional Engineer and the dignity and reputation of the engineering profession;

- the name is not misleading or liable to cause confusion with the public, nor does it imply any partnership arrangement with or endorsement of services by the Society.

b) Titles associated with the registration of Professional Engineers such as “PEng” and “PEng(UK)” and membership of the Society such as “Fellow of the Society of Professional Engineers”, “Member of the Society of Professional Engineers”, and all others relating to membership of the Society of Professional Engineers, and the designations FSPE, MSPE, Hon.FSPE, Hon.MSPE shall only be used or authorised to be used in connection with a partnership or company

- in the name of any partnership in which such member practises provided all the member's partners are similarly entitled to use the Title and designatory letters
- to describe the name of any company provided only that all the shareholders and/or members of such company and all the directors of such company are similarly entitled to use the Title.
- to describe the name of a firm or business which is not a partnership or company in which he/she practises provided such use of the Title does not give the impression that any other person or persons with whom such member is carrying on business or whom such member employs or with whom such member is associated in any way is entitled to use the same Relevant Title or, if the impression referred to is given, such other person or persons is or are similarly entitled to use the Title.

7. Managerial responsibility

a) In addition to the responsibilities referred to in the Rules of Professional Conduct, but subject to the following, any Professional Engineer on the register or any aspiring member seeking to gain access to the register shall be prima facie responsible, as a matter of professional conduct, for the acts or omissions including, in particular, breach of any of the provisions of the Articles and Bye-Laws of the Society or these Rules of Professional Conduct of:

- any firm in which the member is, or holds him/herself out to be, or allows him/herself to be held out as a partner, or any firm which the member allows to use his/her name and/or style and title or designatory letters in any of its advertisements, publicity material or notepaper; and
- any company of which he/she is a director or any co-director of that company or any company which the member allows to use his/her name and/or style and title or designatory letters in any of its advertisements, publicity material or notepaper.

b) If any Professional Engineer on the register or any aspiring member seeking to gain access to the register is able to show that, without default on his/her part, he/she was not aware, and there was no reason for him to be aware at the time of any breach of these provisions by any firm or company referred to above and he/she had, prior to the breach, taken all reasonable steps to ensure that such a breach would not occur, then he/she shall not be in breach of this Rule.

8 Publicity and Advertising

a) Any Professional Engineer on the register or any aspiring member seeking to gain access to the register may publicise his/her services or permit another person to do so, but in doing so the member must have due regard to the standards set by the Advertising Standards Authority and any standards set by any other regulatory or governmental authority in relation to advertising and ensure that any publicity for which he/she is in any way responsible is neither inaccurate nor misleading.

b) In all advertising, publicity material or public statements for which any Professional Engineer on the register or any aspiring member seeking to gain access to the register is in any way responsible, he/she shall avoid all claims of superiority over, or critical comparisons of, the services provided by other engineers and shall avoid any direct comparison of fees and charges levied by other engineers.

c) Any Professional Engineer on the register or any aspiring member seeking to gain access to the register may only refer to the name of a client in any advertising, publicity material or public statement if the prior written consent of that client is first obtained.

d) Advertisements or other publicity material issued by any Professional Engineer on the register or any aspiring member seeking to gain access to the register or by a firm in which they are held out to be a partner or director or a company through which they practise or conducts their business may state (subject to compliance with any other relevant regulations or legal requirements) either expressly or implied that they, the firm or the company (as the case may be) offers expertise or specialist advice in relation to a particular field of engineering provided only that this is the case.

ASSIGNMENT

From newspaper, journal, internet, online chatting groups, show one event that signify the breach of engineering ethics such as use of substandard materials, breach of safety law, breach of fair practice, attempt to monopolizing , use of law and authority for safeguarding own benefits or personal associates , depressing others and highlight how engineering ethics are breached.

BAE 708 Engineering Knowledge

Civil

Download from given link

Master Diploma resources

Download from given link

From the list of the subject, select two subjects, ask me to send the e-Book. Then you have to do the followings

The students will have to write 20 pages study report for each of the subjects outlined below.
The report needs to include
 Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts

 Own idea on how to apply those concepts in real practical applications.

 Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)

 Your comment on each book

Electrical

http://www.highlightcomputer.com/MasterofEngineeringElectricalCourseWorkGraduateDiplomaSyllabus.pdf

Master Diploma resources

Download from given link

From the list of the subject, select two subjects, ask me to send the e-Book. Then you have to do the followings

The students will have to write 20 pages study report for each of the subjects outlined below.
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 Own idea on how to apply those concepts in real practical applications.

 Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)

 Your comment on each book

Mechanical

http://www.highlightcomputer.com/MasterofEngineeringMechanicalCourseWorkGraduateDiplomaSyllabus.pdf

Master Diploma resources

Download from given link

From the list of the subject, select two subjects, ask me to send the e-Book. Then you have to do the followings

The students will have to write 20 pages study report for each of the subjects outlined below.
The report needs to include
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 Own idea on how to apply those concepts in real practical applications.

 Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)

 Your comment on each book

BAE708 will be completed when you have done the above tasks

Telecommunication

Download from given link

Go to the end and access the following units

DTE301 Network Management.zip

DTE302 Photonics.zip

DTE303 Telecom Engg.zip

DTE304 TCPIP.zip

DTE305 Optical Comm.zip

DTE306 Wireless Comm.zip

DTE307 Settlite Comm.zip

DTE308 Mobile Comm.zip

DTE309 VOIP.zip

DTE310 Customer Premise Installation.zip

DTE311 OFDMCDMA.zip

DTE312 SDHSONET.zip

From the list of the subject, select two subjects, ask me to send the e-Book. Then you have to do the followings

The students will have to write 20 pages study report for each of the subjects outlined below.
The report needs to include
 Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts

 Own idea on how to apply those concepts in real practical applications.

 Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)

 Your comment on each book

BAE708 will be completed when you have done the above tasks

Study Stage 2 Part B

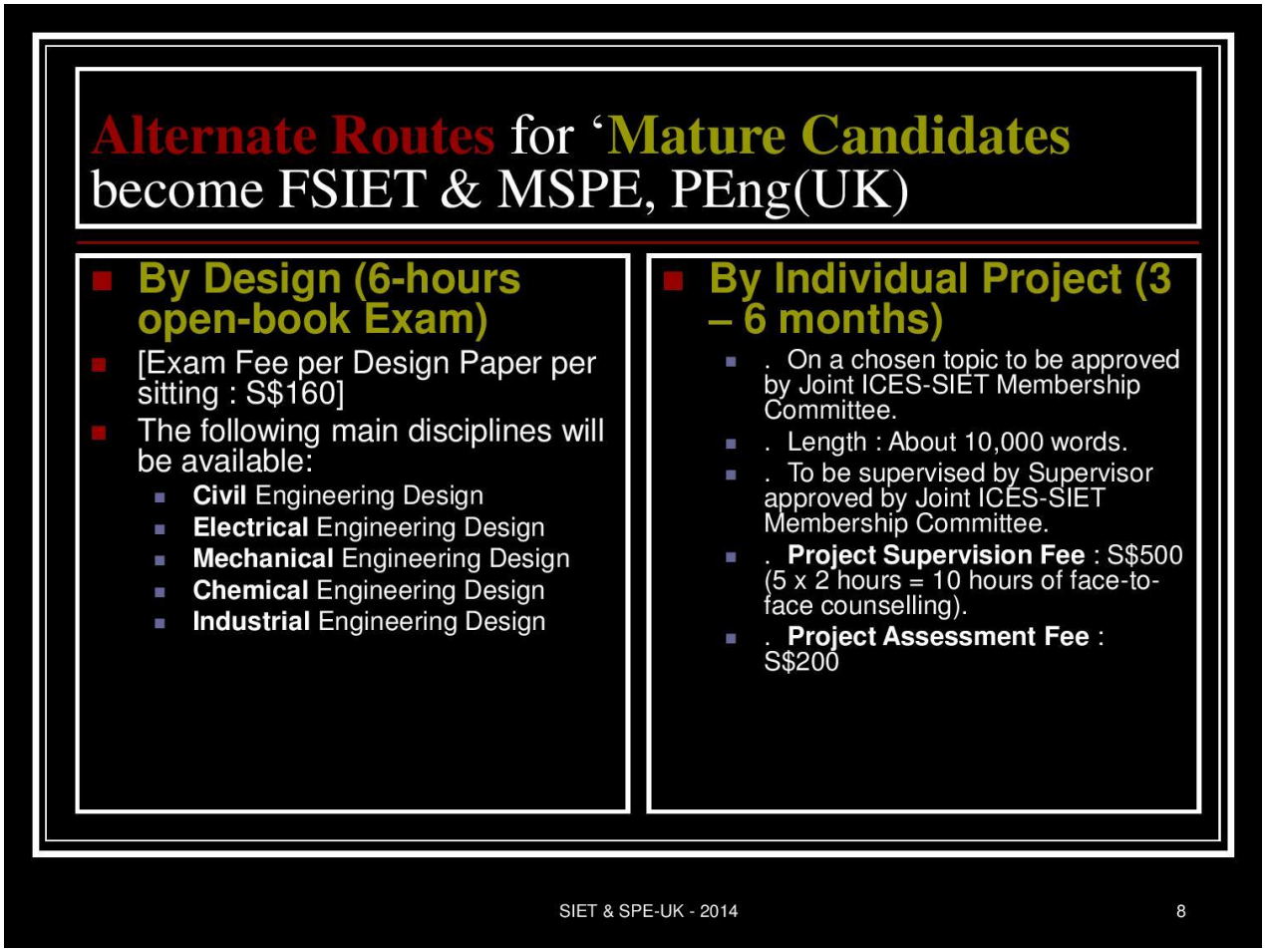
PART (B) IQY Master Diploma in Engineering Part 2-

(St Clements University's Master of Applied Engineering)

(STC Technological University Master of Engineering

BAE709 Design Project (40 Credits)

You need to do a supervised design. In this unit, Singapore Institute of Engineering Technologists can provide the supervised design which is a part of Professional Engineers (UK) Assessment. If you do not want to apply for part of Professional Engineers (UK), IQY Technical College itself will provide design supervision that you can later use it to apply for Professional Engineers (UK)



The followings are required engineering handbooks

2.Building Services Engineering Spreadsheets

This contains Building Service/ Air Con heat flow problems

Download from given link

3.Electrical Engineering formulae & tables

Download from given link

4.Mathematics-The Civil Engineering Handbook

Download from given link

5.McGraw-Hill_-_Civil_Engineering_Formulas__2002__Tlf

Download from given link

6.Mech_Eng_Calculations

Download from given link

Dynamics

Download from given link

This contains all Mechanical Engineering Calculations

7.Newnes Electrical Power Engineer Handbook

Download from given link

8.Newnes_Electrical_Engineers_Handbook

www.mongroupsydney1.com/8.pdf

Those are basic handbooks. Furthermore you can explore wider books in the following links.

You can ask the teacher to send you the e-Books if you want to use it for your selected design

Download from given link

Civil

Download from given link

Electrical/ Electronics

Download from given link

Mechanical

Download from given link

For other disciplines, the links to download the resources will be sent when you start doing the design project

IQY Master Diploma in Applied Science (Information Technology)

Master of Applied Science (Information Technology)

(St Clements University and STC Technological University)

Follow the instructions in

Download from given link

The candidates will need to request the e-book for study

IQY Master Diploma in Renewable Energy Engineering

Master of Applied Engineering (St Clements University)

Master of Engineering (STC Technological University)

Follow the instructions in

Download from given link

The candidates will need to request the e-book for study

ADDITIONAL COURSE

Doctoral Research Studies

IQY Master Diploma in Research Studies

Download from given link

Only St Clements University will confer the Doctoral Degree while IQY Technical College will provide the joint supervision.

Dissertation for Doctorate

MAE 601 Research Method

MAE602 Thesis

http://www.filefactory.com/file/1l1r1k0ftawt/n/11.Research+Thesis_(ICT_605).zip

MAE601 Research Method

This course guides the student, step by step, through the research process, from problem selection through writing up results. It provides all of the basics necessary to complete a research project in any discipline.

Outline. The following aspects are reflected in this course:

What is research?

Tools of research

The problem: the heart of the research process

Review of the related literature

Planning your research design

Writing the research proposal

Qualitative research

Historical research

Descriptive research

Experimental and causal - comparative designs

Statistical techniques for analyzing quantitative data

Technical details: style, format, and organization of the research report

Doctoral Research Proposal

Synopsis: Research students are expected to present a written research proposal within three months after commencement. The proposal is handed in to the study leader.

Assessors of this proposal are selected by the faculty for their understanding of the field and the research involved. The purpose of a research is to set out a plan for conducting the research and writing the dissertation within the available time. It should take account of the availability and guidance of the study leader.

The starting point for a research proposal is the topic, which is the field of interest in which the research is to be carried out. In introducing the topic, the proposal should clarify the field that it falls into and the specific part that field which the research will explore.

It should clarify why the topic is of interest and importance, and how the proposed research will contribute to the filed of knowledge or profession. The proposal should clarify the research questions, ensuring that these are specific and answerable.

It is important to show how these questions relate to the topic are, and how they will advance the student's contribution. The proposal should detail the research to be carried out, and clarify the research methods, the timeframe and the reasons for selecting particular methods.

Where a period of literature review or research should precede any empirical research, this should be factored in as part of the research. It is important to estimate any periods of field research and to flag their duration and cost in your research proposal.

MAE 602 Thesis

Thesis Dissertation for Doctorate

Candidates need to complete a 60000-words dissertation (in Myanmar or English) and a 3000-words executive portfolio (in English).

This program requires the candidates to complete a thesis as part of the assessment for the Doctorate

Doing a thesis / dissertation means that instead of knowledge and information being presented and following a prescribed route for answering questions, candidates are thrust into an active role of managing an investigation into a topic area. This means researching and discovering things for themselves.

They will have to set their own targets and parameters, pose their own central research questions and decide on the appropriate sources of information to support the research. It therefore requires the use of the higher-level cognitive skills of analysis, synthesis and evaluation. Candidates may choose an area of particular interest to them within the scope of course title.

Doctoral dissertation

A dissertation is an individual effort and the candidate, academic tutor and the course professor will work together on constructing an approved topic (research question) and methodologies.

Dissertation Defence for doctorate

It is expected of Doctoral candidates to defend their thesis by means of a colloquium (academic discussion). The purpose of the meeting is for the candidates to convince a panel of experts in the field of the dissertation how well they have done in the conducting of their research study and the preparation of their dissertation

Candidates need to complete all course assessments with the results of Grade B+ or above.

Weblink

www.highlightcomputer.com/iqymasterdiploma.pdf

IQY TECHNICAL COLLEGE

STC TECHNOLOGICAL UNIVERSITY

ST CLEMENTS UNIVERSITY MYANMAR COLLEGE

IPEM TECHNOLOGICAL UNIVERSITY

MASTERS DEREE LEARNING SUPPORT

There are two types of Masters Programs in Engineering

1. Master of Engineering Practice
2. Master of Engineering

(1) Master of Engineering Practice (240 credits, 120 credits for BE degree)

Master of Engineering Practice is for experienced engineers . It will include the following subjects of 10 credits each

- BAE 701 Engineering Fundamental
- BAE 702 Engineering Management
- BAE 703 Leadership & Human Resources Management
- BAE 704 Risk Management & Industrial Safety
- BAE 705 Engineering Competency Development
- BAE 706 Engineering Report Writing
- BAE 707 Engineering Ethics
- BAE 708 Engineering Knowledge

Completion of the above subjects will earn Graduate Diploma in Engineering Practice (80 credits at Masters level +120 Credits for Bachelors degree level total 200 credits. Completion of two or more units can earn Graduate Certificate in Engineering.

The candidate will need to do Engineering Design Project of 40 credits to complete Master of Engineering Practice of 240 credits

The followings are study instruction

Form 15

IQY Master Diploma

BAE701 to 708, you will complete the Graduate Diploma

Then submit the design project to complete the Masters

From the above links, textbooks can be downloaded. Choose Civil Engineering

Form 45 St Clements University Master of Engineering for Non standard Entry Study Support

The following link shows the example of the tasks that you need to do

Form 46 Master Diploma Civil Worked Example

The following link contains the Masters Course References.

Form 18

Master Diploma resources

(1) Master of Engineering (Professional Engineering)

(240 credits, 120 credits for BE degree)

Masters of Engineering (Professional Engineering) program is for recent graduates who have completed their BE degrees.

It will include the following 24 subjects of 5 credits each

The students will have to write 20 pages study progress report for each of the subjects outlined below.

The report needs to include

- Date and chapters that the candidate reads (The student will need to read the book
- at least 4 days per week)

- Highlight the key concepts, key formula, key theory & practical application concepts .
- Notes of the topic that you read.
- Key diagrams, formula, problem solutions
- Power point slides to express the key topics

There are 24 units in Masters of Engineering (Professional Engineering) Program, the candidate will need to complete one unit per month so that the whole program will be completed within 24 months. (120 credits at Masters level and 120 Credits for Bachelors degree total 240 credits).

As Master of Professional Engineering in delivered entirely in English and very intensive program, to encourage the students to earn the Graduate Diploma and Masters degree, the following arrangements are also made.

Graduate Diploma in Engineering (140 credits)

Completion of the compulsory 4 subjects will earn Graduate Diploma in Engineering (20 credits at Masters level +120 Credits for Bachelors degree level total 140 credits. Completion of two or more units can earn Graduate Certificate in Engineering.

Master of Engineering Science

Completion of the compulsory 6 subjects will earn Master of Engineering Science (30 credits at Masters level +120 Credits for Bachelors degree level total 150 credits.

Master of Engineering

Completion of the compulsory 6 subjects PLUS project (30 credits) will earn Master of Engineering (60 credits at Masters level +120 Credits for Bachelors degree level total 180 credits.

Master of Engineering from SCPU School of Engineering registered in Switzerland

Please note that the candidates who want to get the Master of Engineering from SCPU School of Engineering registered in Switzerland must complete

Masters of Engineering (Professional Engineering) by either studying the lectures of entire English medium of language instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Electrical Compulsory Subjects

- BAE 655-Wireless Communications
- BAE656 Advanced Digital Signal Processing
- BAE 670-Power System Engineering
- BAE 661-Design of Electrical Services for Buildings
- BAE 677-Photovoltaic Systems
- BAE 660-Control Engineering

The above subjects will be provide with English and Myanmar Instructions and guidance. The candidates can choose the other subjects from the available subjects but they are entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Instead of doing the project, the following options are also open for the students.

Option (1) Self study or two more subjects

The students can select choose two more subjects from the available subjects in same discipline or other discipline , follow the entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Option (2) Complete any two of the following subjects by submitting the assignments

- BAE 702 Engineering Management
- BAE 703 Leadership & Human Resources Management
- BAE 704 Risk Management & Industrial Safety
- BAE 707 Engineering Ethics

Civil Compulsory Subjects

BAE 631-Advanced Concrete Technology

BAE 634-Building Construction

BAE 636-Building Technology Electrical Mechanical System (BAE661-Design of Electrical Services for Buildings)

BAE 650-Steel Design

BAE 635-Building Survey

BAE 644-Estimating

The above subjects will be provide with English and Myanmar Instructions and guidance. The candidates can choose the other subjects from the available subjects but they are entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Instead of doing the project, the students can select choose two more subjects from the available subjects in same discipline or other discipline , follow the entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Mechanical Compulsory Subjects

BAE 678A/B-Machine Design

BAE 689A/B-Mechanical Design

BAE 698-Thermal Engineering

BAE 694-Control Engineering

BAE 699-Rotating Machinery Vibration

BAE 690-Mechanical Estimating

The above subjects will be provide with English and Myanmar Instructions and guidance. The candidates can choose the other subjects from the available subjects but they are entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Instead of doing the project, the students can select choose two more subjects from the available subjects in same discipline or other discipline , follow the entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

IQY TECHNICAL COLLEGE

STC TECHNOLOGICAL UNIVERSITY

ST CLEMENTS UNIVERSITY MYANMAR COLLEGE

IPEM TECHNOLOGICAL UNIVERSITY

MASTERS DEREE LEARNING SUPPORT

There are two types of Masters Programs in Engineering

1. Master of Engineering Practice
2. Master of Engineering

(1) Master of Engineering Practice (240 credits, 120 credits for BE degree)

Master of Engineering Practice is for experienced engineers . It will include the following subjects of 10 credits each

- BAE 701 Engineering Fundamental
- BAE 702 Engineering Management
- BAE 703 Leadership & Human Resources Management
- BAE 704 Risk Management & Industrial Safety
- BAE 705 Engineering Competency Development
- BAE 706 Engineering Report Writing
- BAE 707 Engineering Ethics
- BAE 708 Engineering Knowledge

Completion of the above subjects will earn Graduate Diploma in Engineering Practice (80 credits at Masters level +120 Credits for Bachelors degree level total 200 credits. Completion of two or more units can earn Graduate Certificate in Engineering.

The candidate will need to do Engineering Design Project of 40 credits to complete Master of Engineering Practice of 240 credits

The followings are study instruction

Form 15

IQY Master Diploma

BAE701 to 708, you will complete the Graduate Diploma

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From the above links, textbooks can be downloaded. Choose Civil Engineering

Form 45 St Clements University Master of Engineering for Non standard Entry Study Support

The following link shows the example of the tasks that you need to do

Form 46 Master Diploma Civil Worked Example

The following link contains the Masters Course References.

Form 18

Master Diploma resources

(1) Master of Engineering (Professional Engineering)

(240 credits, 120 credits for BE degree)

Masters of Engineering (Professional Engineering) program is for recent graduates who have completed their BE degrees.

It will include the following 24 subjects of 5 credits each

The students will have to write 20 pages study progress report for each of the subjects outlined below.

The report needs to include

- Date and chapters that the candidate reads (The student will need to read the book
- at least 4 days per week)

- Highlight the key concepts, key formula, key theory & practical application concepts .
- Notes of the topic that you read.
- Key diagrams, formula, problem solutions
- Power point slides to express the key topics

There are 24 units in Masters of Engineering (Professional Engineering) Program, the candidate will need to complete one unit per month so that the whole program will be completed within 24 months. (120 credits at Masters level and 120 Credits for Bachelors degree total 240 credits).

As Master of Professional Engineering in delivered entirely in English and very intensive program, to encourage the students to earn the Graduate Diploma and Masters degree, the following arrangements are also made.

Graduate Diploma in Engineering (140 credits)

Completion of the compulsory 4 subjects will earn Graduate Diploma in Engineering (20 credits at Masters level +120 Credits for Bachelors degree level total 140 credits. Completion of two or more units can earn Graduate Certificate in Engineering.

Master of Engineering Science

Completion of the compulsory 6 subjects will earn Master of Engineering Science (30 credits at Masters level +120 Credits for Bachelors degree level total 150 credits.

Master of Engineering

Completion of the compulsory 6 subjects PLUS project (30 credits) will earn Master of Engineering (60 credits at Masters level +120 Credits for Bachelors degree level total 180 credits.

Master of Engineering from SCPU School of Engineering registered in Switzerland

Please note that the candidates who want to get the Master of Engineering from SCPU School of Engineering registered in Switzerland must complete

Masters of Engineering (Professional Engineering) by either studying the lectures of entire English medium of language instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Electrical Compulsory Subjects

- BAE 655-Wireless Communications
- BAE656 Advanced Digital Signal Processing
- BAE 670-Power System Engineering
- BAE 661-Design of Electrical Services for Buildings
- BAE 677-Photovoltaic Systems
- BAE 660-Control Engineering

The above subjects will be provide with English and Myanmar Instructions and guidance. The candidates can choose the other subjects from the available subjects but they are entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Instead of doing the project, the following options are also open for the students.

Option (1) Self study or two more subjects

The students can select choose two more subjects from the available subjects in same discipline or other discipline , follow the entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Option (2) Complete any two of the following subjects by submitting the assignments

- BAE 702 Engineering Management
- BAE 703 Leadership & Human Resources Management
- BAE 704 Risk Management & Industrial Safety
- BAE 707 Engineering Ethics

Civil Compulsory Subjects

BAE 631-Advanced Concrete Technology

BAE 634-Building Construction

BAE 636-Building Technology Electrical Mechanical System (BAE661-Design of Electrical Services for Buildings)

BAE 650-Steel Design

BAE 635-Building Survey

BAE 644-Estimating

The above subjects will be provide with English and Myanmar Instructions and guidance. The candidates can choose the other subjects from the available subjects but they are entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Instead of doing the project, the students can select choose two more subjects from the available subjects in same discipline or other discipline , follow the entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Mechanical Compulsory Subjects

BAE 678A/B-Machine Design

BAE 689A/B-Mechanical Design

BAE 698-Thermal Engineering

BAE 694-Control Engineering

BAE 699-Rotating Machinery Vibration

BAE 690-Mechanical Estimating

The above subjects will be provide with English and Myanmar Instructions and guidance. The candidates can choose the other subjects from the available subjects but they are entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Instead of doing the project, the students can select choose two more subjects from the available subjects in same discipline or other discipline , follow the entire English medium of instruction or self study in provided textbooks written in English which they need to do self study and submit the study report.

Professional Engineer Support

Master of Professional Engineering Practice

(120 Credits)

6688901

Course Objective

This course aims to provide both engineering fundamental knowledge and engineering application practice for Professional Engineer.

Contents

BAE701S Engineering Fundamental (16 Credits)

BAE 708S Engineering Knowledge (16 Credits)

BAE 705S Engineering Competency Development(16 Credits)

BAE 706S Engineering Report Writing(16 Credits)

BAE 707S Engineering Ethics(16 Credits)

BAE709 Design Project (40 Credits)

Assessment

Professional report/ Project/ Presentation/ Practical based design project

Master of Information Technology

This degree is designed for the experienced professionals who wish the develop their skills and knowledge as Information Technology professionals.

Graduate Diploma in Information Technology

Compulsory Modules
ICT 501 Programming in Visual C++ PLUS ICT 507 Visual Computing
ICT 502 Database Systems
ICT 503 Business System Development
ICT 504 Business Data Communications
ICT 505 Applied Computing I
ICT 506 Applied Computing II PLUS ICT 508 Object-Oriented Analysis & Design

Master of Science (Information Technology)

Electives

ICT 601 Programming in Java
ICT 602 E-Commerce
ICT 603 Software Engineering
ICT 604 Multimedia Systems
ICT 605 IT Management**Project/Thesis**

A written report between 10,000 – 12,000 words that covers both theory & practical knowledges of the above units.

To qualify for a MSc.IT degree, a student must take and pass 10 modules from the above list of modules, 6 modules are compulsory and the rest are electives.

Additionally, the student must undertake and pass a research-based or work-related project.

Master of Information Technology

This degree is designed for the experienced professionals who wish the develop their skills and knowledge as Information Technology professionals.

Graduate Diploma in Information Technology

Compulsory Modules
ICT 501 Programming in Visual C++ PLUS ICT 507 Visual Computing
ICT 502 Database Systems
ICT 503 Business System Development
ICT 504 Business Data Communications
ICT 505 Applied Computing I
ICT 506 Applied Computing II PLUS ICT 508 Object-Oriented Analysis & Design

Master of Science (Information Technology)

Electives

ICT 601 Programming in Java
ICT 602 E-Commerce
ICT 603 Software Engineering
ICT 604 Multimedia Systems
ICT 605 IT Management**Project/Thesis**

A written report between 10,000 – 12,000 words that covers both theory & practical knowledges of the above units.

To qualify for a MSc.IT degree, a student must take and pass 10 modules from the above list of modules, 6 modules are compulsory and the rest are electives.

Additionally, the student must undertake and pass a research-based or work-related project.

Master of Management

This program has been developed to fulfill the needs for those who are seeking a degree at the master's level and whom wish to specialize in a particular field of endeavor not usually available as a study option.

The main scope of this program is to emphasize the usual administrative aspects of management at the appropriate master's degree level. The Master of Management is today a professional degree and one of the most popular degree programs in the managerial or administrative fields of endeavor.

Our program has been designed to focus on major study areas of management and administration. The core courses forming the basis of the degree program equips the student with the usual fundamental aspects of management and administration applicable to the master's degree level.

The Graduate Diploma course section is common to all the majors and students must continue a masters study after completion of Graduate Diploma.

Graduate Diploma in Management (8 units)

Mgt 501 Organizational Change Management

Mgt 502 Strategic Plans Development & Implementation

Mgt 503 Leadership in Organization

Mgt 504 Innovation & Continuous Improvement

Mgt 505 Risk Management

Mgt 506 Knowledge & Information Management

Mgt 507 Human Resources Management & Strategic Planning

Mgt 508 Employee Relations Management

Master Of Management (5 units)

All Graduate Diploma Subjects PLUS

Mgt 601 Logistics Management

Mgt 602 Project Management

Mgt 603 Financial Management

PLUS

Res 601 Research Methods

PLUS

Mgt 604 Thesis

Master of Management

This program has been developed to fulfill the needs for those who are seeking a degree at the master's level and whom wish to specialize in a particular field of endeavor not usually available as a study option.

The main scope of this program is to emphasize the usual administrative aspects of management at the appropriate master's degree level. The Master of Management is today a professional degree and one of the most popular degree programs in the managerial or administrative fields of endeavor.

Our program has been designed to focus on major study areas of management and administration. The core courses forming the basis of the degree program equips the student with the usual fundamental aspects of management and administration applicable to the master's degree level.

The Graduate Diploma course section is common to all the majors and students must continue a masters study after completion of Graduate Diploma.

Graduate Diploma in Management (8 units)

Mgt 501 Organizational Change Management

Mgt 502 Strategic Plans Development & Implementation

Mgt 503 Leadership in Organization

Mgt 504 Innovation & Continuous Improvement

Mgt 505 Risk Management

Mgt 506 Knowledge & Information Management

Mgt 507 Human Resources Management & Strategic Planning

Mgt 508 Employee Relations Management

Master Of Management (5 units)

All Graduate Diploma Subjects PLUS

Mgt 601 Logistics Management

Mgt 602 Project Management

Mgt 603 Financial Management

PLUS

Res 601 Research Methods

PLUS

Mgt 604 Thesis

Graduate Diploma in Architectural Engineering Course Work

To complete the Graduate Diploma in Engineering, the students will have to complete 12 units with each 8 credit points totalling 96 credit points.

By adding Masters thesis of 24 credit points, they will complete 120 credit points . Total credit points for Masters degree is (Bachelor degree 120 credit points+ Graduate Diploma+ Masters degree 120 credit points Total 240 Credit points).

Graduate Diploma is pre-requisite for Masters degree.

Follow the instruction for Professional Diploma in Civil Engineering

www.highlightcomputer.com/profdipcivilengg.htm

Then complete the architecture units

http://www.highlightcomputer.com/turesources.htm#i

Also refer the followings which are not included in the above link.

- Professional Diploma in Civil and Architectural Engineering will be awarded , if 4 Architecture units are completed. 80 points at 20 points each
- Professional Diploma in Civil Engineering and Professional Diploma in Architectural l Engineering will be awarded if 6 Architecture units are completed. (120 points at 20 points each)
- If 8 Architecture Units are completed , Graduate Diploma in Architectural Engineering will be awarded (160 points at 20 points each)
- If 12 Architecture Units are completed , Master Diploma in Architectural Engineering will be awarded (ME-Architecture award by STC Technological University) (240 points)

Year 4 BE (Architectural Engineering)

AchE401 Architecture Theory

AchE402 Architectural Design

AchE403 Building Construction

AchE404 Building Services

AchE405 Construction Materials

AchE406 Sustainable Building Design

AchE407 Architectural Drafting

AchE408 Construction Quantity Surveying

Year 5 BE/ME(Year) (Architectural Engineering)

AchE501 Architectural Management

AchE502 Interior Design

AchE503 Green Building Design

AchE504 Construction Contract

AchE505 Solar Architecture & Smart House Design

AchE506 Architecture Commercial Design

AchE507 Urban Design

AE508 Landscape Design

Year 6 BE/ME (Year 2) (Architectural Engineering)

AchE601 Architectural Design & Ethics

AchE602 Building Survey & Reporting

AchE603 Building Control Systems

AchE604 Sustainable Architecture

AchE605 Details Design

AchE606 Outdoor Structure Design

Course Work Plan

The students will have to write 20 pages study report for each of the subjects outlined below.

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

BAE 655-Wireless Communications

BAE 656-Advanced Digital Signal Processing

BAE 657-Advanced Electromagnetics

BAE 658-Real-time Systems

BAE 659-Computer-aided Control Systems

BAE 660-Control Engineering

BAE 661-Design of Electrical Services for Buildings

BAE 662-Design of Rotating Electrical Machines

BAE 663-Digital Electronics

BAE 664-Distributed Generation in Power System

BAE 665-Embedded Digital Signal Processing Systems

BAE 666- Low Emission Electricity Generation

BAE 667-Industrial Control System

BAE 668-Photonics

BAE 669-Power Electronics and Instrumentation Engineering

BAE 670-Power System Engineering

BAE 671-Satellite Communications and Navigation Systems

BAE 672-Industrial & System Engineering

BAE 673-Frequency Stability

BAE 674-Intelligent Systems

BAE 675-Nanoelectronics

BAE 676-Failure Analysis

BAE 677-Photovoltaics System

Graduate Diploma in Chemical Engineering Course Work

Professional Diploma (BE)/ Master Diploma (ME) in Chemical Engineering /Metallurgy/Petroleum

Follow the instruction for Professional Diploma in Chemical Engineering

http://www.highlightcomputer.com/profdipchemengg.htm

Then do specialized additional studies in Metallurgy/ Explosion Protection/ Petroleum

Based on the units selection and amount of studies, the following qualifications can be issued

Professional Diploma/ Master Diploma in Metallurgical Engineering and Petroleum Engineering

- Professional Diploma in Chemical and Metallurgical Engineering will be awarded , if 4 Metallurgy units are completed. 80 points at 20 points each
- Professional Diploma in Chemical Engineering and Professional Diploma in Metallurgical Engineering will be awarded if 6 Metallurgy units are completed. (120 points at 20 points each)
- If 8 Metallurgy Units are completed , Graduate Diploma in Metallurgical Engineering will be awarded (160 points at 20 points each)
- If 12 Metallurgy Units are completed , Master Diploma in Metallurgical Engineering will be awarded (ME-Metallurgical award by STC Technological University) (240 points)
- Professional Diploma in Chemical and Petroleum Engineering will be awarded , if 4 Petroleum units are completed. (80 points at 20 points each)
- Professional Diploma in Chemical Engineering and Professional Diploma in Petroleum Engineering will be awarded if 6 Petroleum units are completed. (120 points at 20 points each)
- If 8 Petroleum Units are completed , Graduate Diploma in Petroleum Engineering will be awarded (160 points at 20 points each)
- If 12 Petroleum Units are completed , Master Diploma in Metallurgical Engineering will be awarded (ME-Petroleum award by STC Technological University) (240 points at 20 points each)

Graduate Diploma & Master Diploma in Chemical Engineering

- Graduate Diploma in Chemical Engineering will be awarded if the following additional units are completed
    1. PE 41014+42014+Natural Gas Processing-PE 51024Natural Gas Engineering
    2. PE 21002+22002-Drilling Fluids

3. Met507 Explosive Engineering

From http://www.highlightcomputer.com/profdiphazardous.htm

4. BAE 637E Hazardous Chemical Management
5. BAE 638E Environmental Engineering in Hazardous Areas
6. BAE 636 E Hazardous Area Inspection
7. BAE 634 Explosion Protection
8. BAE 633E Hazardous Area Safety Audits (160 points at 20 points each)

Then complete Chemical Engineering Thesis to complete Master Diploma in Chemical Engineering (ME-Chemical)

Course Work Plan

The students will have to write 20 pages study report for each of the subjects outlined below.

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

Graduate Diploma in Chemical Engineering Course Work

Professional Diploma (BE)/ Master Diploma (ME) in Chemical Engineering /Metallurgy/Petroleum

Follow the instruction for Professional Diploma in Chemical Engineering

http://www.highlightcomputer.com/profdipchemengg.htm

Then do specialized additional studies in Metallurgy/ Explosion Protection/ Petroleum

Based on the units selection and amount of studies, the following qualifications can be issued

Professional Diploma/ Master Diploma in Metallurgical Engineering and Petroleum Engineering

- Professional Diploma in Chemical and Metallurgical Engineering will be awarded , if 4 Metallurgy units are completed. 80 points at 20 points each
- Professional Diploma in Chemical Engineering and Professional Diploma in Metallurgical Engineering will be awarded if 6 Metallurgy units are completed. (120 points at 20 points each)
- If 8 Metallurgy Units are completed , Graduate Diploma in Metallurgical Engineering will be awarded (160 points at 20 points each)
- If 12 Metallurgy Units are completed , Master Diploma in Metallurgical Engineering will be awarded (ME-Metallurgical award by STC Technological University) (240 points)
- Professional Diploma in Chemical and Petroleum Engineering will be awarded , if 4 Petroleum units are completed. (80 points at 20 points each)
- Professional Diploma in Chemical Engineering and Professional Diploma in Petroleum Engineering will be awarded if 6 Petroleum units are completed. (120 points at 20 points each)
- If 8 Petroleum Units are completed , Graduate Diploma in Petroleum Engineering will be awarded (160 points at 20 points each)
- If 12 Petroleum Units are completed , Master Diploma in Metallurgical Engineering will be awarded (ME-Petroleum award by STC Technological University) (240 points at 20 points each)

Graduate Diploma & Master Diploma in Chemical Engineering

- Graduate Diploma in Chemical Engineering will be awarded if the following additional units are completed
    1. PE 41014+42014+Natural Gas Processing-PE 51024Natural Gas Engineering
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From http://www.highlightcomputer.com/profdiphazardous.htm

4. BAE 637E Hazardous Chemical Management
5. BAE 638E Environmental Engineering in Hazardous Areas
6. BAE 636 E Hazardous Area Inspection
7. BAE 634 Explosion Protection
8. BAE 633E Hazardous Area Safety Audits (160 points at 20 points each)

Then complete Chemical Engineering Thesis to complete Master Diploma in Chemical Engineering (ME-Chemical)

Course Work Plan

The students will have to write 20 pages study report for each of the subjects outlined below.

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

Graduate Diploma in Civil Engineering Course Work

To complete the Graduate Diploma in Engineering, the students will have to complete 12 units with each 8 credit points totalling 96 credit points.

By adding Masters thesis of 24 credit points, they will complete 120 credit points . Total credit points for Masters degree is (Bachelor degree 120 credit points+ Graduate Diploma+ Masters degree 120 credit points Total 240 Credit points).

Graduate Diploma is pre-requisite for Masters degree.

Course Work Plan

The students will have to write 20 pages study report for each of the subjects outlined below.

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

BAE 631-Advanced Concrete Technology

BAE 632-Architectural Design

BAE 633-Bridge Construction

BAE 634-Building Construction

BAE 635-Building Survey

BAE 636-Building Technology Electrical Mechanical System

BAE 637-Composite Structure of Steel & Concrete

BAE 638-Construction Drawing

BAE 639-Construction Materials

BAE 640-Construction Mathematics

BAE 641-Construction Site Planning

BAE 642-Design of Reinforce Concrete

BAE 643-Earthquake Resistant Structure

BAE 644-Estimating

BAE 645-Geotechnics

BAE 646- Highway Engineering

BAE 647-Piling Engineering

BAE 648-Railways Bridges

BAE 649-Soil & Rock Mechanic

BAE 650-Steel Design

BAE 651-Strom & Waste Water

BAE 652-Structural Analysis

BAE 653-Surveying

BAE 654-Theory & Design of Bridges

Graduate Diploma in Electrical Engineering Course Work

To complete the Graduate Diploma in Engineering, the students will have to complete 12 units with each 8 credit points totalling 96 credit points.

By adding Masters thesis of 24 credit points, they will complete 120 credit points . Total credit points for Masters degree is (Bachelor degree 120 credit points+ Graduate Diploma+ Masters degree 120 credit points Total 240 Credit points).

Graduate Diploma is pre-requisite for Masters degree.

Course Work Plan

The students will have to write 20 pages study report for each of the subjects outlined below.

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

BAE 655-Wireless Communications

BAE 656-Advanced Digital Signal Processing

BAE 657-Advanced Electromagnetics

BAE 658-Real-time Systems

BAE 659-Computer-aided Control Systems

BAE 660-Control Engineering

BAE 661-Design of Electrical Services for Buildings

BAE 662-Design of Rotating Electrical Machines

BAE 663-Digital Electronics

BAE 664-Distributed Generation in Power System

BAE 665-Embedded Digital Signal Processing Systems

BAE 666- Low Emission Electricity Generation

BAE 667-Industrial Control System

BAE 668-Photonics

BAE 669-Power Electronics and Instrumentation Engineering

BAE 670-Power System Engineering

BAE 671-Satellite Communications and Navigation Systems

BAE 672-Industrial & System Engineering

BAE 673-Frequency Stability

BAE 674-Intelligent Systems

BAE 675-Nanoelectronics

BAE 676-Failure Analysis

BAE 677-Photovoltaics System

Graduate Diploma in Mechanical Engineering Course Work

To complete the Graduate Diploma in Engineering, the students will have to complete 12 units with each 8 credit points totalling 96 credit points.

By adding Masters thesis of 24 credit points, they will complete 120 credit points . Total credit points for Masters degree is (Bachelor degree 120 credit points+ Graduate Diploma+ Masters degree 120 credit points Total 240 Credit points).

Graduate Diploma is pre-requisite for Masters degree.

Course Work Plan

The students will have to write 20 pages study report for each of the subjects outlined below.

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

BAE 625- Structural Engineering Mechanics

BAE 678A/B-Machine Design

BAE 679- Materials Science

Composite Materials & Joining Technology

BAE 680-Quality Control

BAE 681- Welding Engineering

BAE 682-Assembly Automation & Product Design

BAE 683-Material Engineering

BAE 684-Computerised Engine Control

BAE 685-Electric Vehicle Technology

BAE 686-Electro-Mechanical Manufacturing

BAE 687-Lasers in Manufacturing

BAE 688-Manufacturing Management

BAE 689A/B-Mechanical Design

BAE 690-Mechanical Estimating

BAE 691-Mechatronics

BAE 692-Metallurgy

BAE 693-Piping System

BAE 694-Control Engineering

BAE 695-Random Vibration

BAE 696-Specification Development

BAE 697-Structural Foundation Design

BAE 698-Thermal Engineering

BAE 699-Rotating Machinery Vibration

Graduate Diploma in Metallurgical Engineering Course Work

To complete the Graduate Diploma in Engineering, the students will have to complete 12 units with each 8 credit points totalling 96 credit points.

By adding Masters thesis of 24 credit points, they will complete 120 credit points . Total credit points for Masters degree is (Bachelor degree 120 credit points+ Graduate Diploma+ Masters degree 120 credit points Total 240 Credit points).

Graduate Diploma is pre-requisite for Masters degree.

Course Work Plan

The students will have to write 20 pages study report for each of the subjects outlined below.

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book
- Metallurgical Engineering
- Met501 Mechanical Estimating
- Met502 Mechanical Properties of Metals
- Met503 Metallurgy
- Met504 Engineered Metals
- Met505 Metallurgical Alloys
- Met507 Explosive Engineering
- Met508 Metallic Materials
- Met509 Stress Assessment in Metallurgy
- Met601 Metallurgical Processing
- Met602 Machineries Failure Analysis
- Met603 Materials Selection in Mechanical Design
- Met604 Strain Testing

- Met605 Applied Metallurgy

Graduate Diploma in Metallurgical Engineering Course Work

To complete the Graduate Diploma in Engineering, the students will have to complete 12 units with each 8 credit points totalling 96 credit points.

By adding Masters thesis of 24 credit points, they will complete 120 credit points . Total credit points for Masters degree is (Bachelor degree 120 credit points+ Graduate Diploma+ Masters degree 120 credit points Total 240 Credit points).

Graduate Diploma is pre-requisite for Masters degree.

Course Work Plan

The students will have to write 20 pages study report for each of the subjects outlined below.

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, key formula, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of engineering designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book
- Metallurgical Engineering
- Met501 Mechanical Estimating
- Met502 Mechanical Properties of Metals
- Met503 Metallurgy
- Met504 Engineered Metals
- Met505 Metallurgical Alloys
- Met507 Explosive Engineering
- Met508 Metallic Materials
- Met509 Stress Assessment in Metallurgy
- Met601 Metallurgical Processing
- Met602 Machineries Failure Analysis
- Met603 Materials Selection in Mechanical Design
- Met604 Strain Testing

- Met605 Applied Metallurgy

Master Diploma in Education/ Master of Education

IQY Technical College/ St Clements University/ STC Technological University

www.highlightcomputer.com/medcourse.htm

Course Overview

This program is designed to develop and support the careers of teachers who are teaching professionals, educational administrators, researchers and policymakers.

The students can choose to complete your course with units of study that suit your interests from our field offerings which are engineering education and school and vocational education.

Graduate Attributes

Demonstrate expert, specialised and technical knowledge in broad educational areas of pedagogy, assessment and curriculum designed to address the needs of diverse learners across a range of educational contexts related to engineering education or school and vocational education.

Demonstrate an advanced understanding of theory and practice in specialised disciplines within the field of education in national and/or international contexts in engineering education or school and vocational education.

Analyse critically, reflect on and synthesise information to solve complex problems in the educational field

Conduct independent research and inquiry, involving theoretical conceptualisation, innovative ideas and personal initiative in engineering education or school and vocational education

Demonstrate professional leadership through interpreting and communicating pedagogical knowledge and professional skills to specialist and non-specialist audiences in engineering education or school and vocational education.

Admission requirement

Admission to candidature for the Master of Education requires:

- a Bachelor of Education , or Bachelor degree and working as teacher or equivalent qualification or the completion of postgraduate studies, or professional experience .

Course Structure

The course consists of 240 credit points in which 120 credit points is given for Bachelors degree

Stream 1- Engineering Education

ED431 Student Learning and Teaching Approaches(15 cp)

ED432 Course Design and Assessment(15 cp)

ED433 Scholarly Teaching and Learning Project(15 cp)

ED434 Reflective Academic Practice(15 cp)

ED436 Management for Education(15 cp)

ED413 Engineering Education Part 3 (15 cp)

ED404 Educational Research(15 cp)

ED435 Governance of University (15 cp)

Total	120 cp
Bachelors degree	120 cp
TOTAL	240 cp

Stream 2-School and Vocational Education

ED431 Student Learning and Teaching Approaches(15 cp)

ED432 Course Design and Assessment(15 cp)

ED433 Scholarly Teaching and Learning Project(15 cp)

ED434 Reflective Academic Practice(15 cp)

ED436 Management for Education (15 cp)

ED404 Educational Research(15 cp)

Any Two Electives

ED304 Maths Teaching (15 cp)

ED305 Science Teaching (15 cp)

ED306 Technology Teaching(15 cp)

ED308 Computer Supported Learning Distance Education (15 cp)

Total	120 cp
Bachelors degree	120 cp
TOTAL	240 cp

Professional Certificate in Medical Data System (Course Number-4889008)

Objective- To effectively manage data system in medical records

Pre-requisite- MBBS/ BDS/ B Pharm

Contents ICT409 Hospital Data System

- Hospital Data System (Reader)
- Database Management System for Hospital (Reader)

Videos

- Hospital Database Analysis Design
- Hospital Management System Data Entry
- Hospital website and appointment system
- Hospital Management System Doctor Log in
- Hospital Management System with PHP
- Hospital Management System in PHP

Part 1 - Practical Application Tutorials- Hospital Data System

Award- Professional Certificate in Medical Data System

An introduction about hospital Database

SQL [39 exercises with solution]

[*An editor is available at the bottom of the page to write and execute the scripts.*]

Sample Database: hospital

1. Write a query in SQL to find all the information of the nurses who are yet to be registered.

2. Write a query in SQL to find the name of the nurse who are the head of their department.

3. Write a query in SQL to obtain the name of the physicians who are the head of each department.

4. Write a query in SQL to count the number of patients who taken appointment with at least one physician

5. Write a query in SQL to find the floor and block where the room number 212 belongs to

6. Write a query in SQL to count the number available rooms

7. Write a query in SQL to count the number of unavailable rooms.

8. Write a query in SQL to obtain the name of the physician and the departments they are affiliated with

9. Write a query in SQL to obtain the name of the physicians who are trained for a special treatement

10. Write a query in SQL to obtain the name of the physicians with department who are yet to be affiliated

11. Write a query in SQL to obtain the name of the physicians who are not a specialized physician

12. Write a query in SQL to obtain the name of the patients with their physicians by whom they got their preliminary treatement

13. Write a query in SQL to find the name of the patients and the number of physicians they have taken appointment

14. Write a query in SQL to count number of unique patients who got an appointment for examination room C

15. Write a query in SQL to find the name of the patients and the number of the room where they have to go for their treatment

16. Write a query in SQL to find the name of the nurses and the room scheduled, where they will assist the physicians.

17. Write a query in SQL to find the name of the patients who taken the appointment on the 25th of April at 10 am, and also display their physician, assisting nurses and room no.

18. Write a query in SQL to find the name of patients and their physicians who does not require any assistance of a nurse

19. Write a query in SQL to find the name of the patients, their treating physicians and medication.

20. Write a query in SQL to find the name of the patients who taken an advanced appointment, and also display their physicians and medication

21. Write a query in SQL to find the name and medication for those patients who did not take any appointment

22. Write a query in SQL to count the number of available rooms in each block

23. Write a query in SQL to count the number of available rooms in each floor

24. Write a query in SQL to count the number of available rooms for each block in each floor.

25. Write a query in SQL to count the number of unavailable rooms for each block in each floor.

28. Write a query in SQL to obtain the name of the patients, their block, floor, and room number where they are admitted.

29. Write a query in SQL to obtain the nurses and the block where they are booked for attending the patients on call.

30. Write a query in SQL to make a report which will show -
a) name of the patient,
b) name of the physician who is treating him or her,
c) name of the nurse who is attending him or her,
d) which treatement is going on to the patient,
e) the date of release,
f) in which room the patient has admitted and which floor and block the room belongs to respectively.

31. Write a SQL query to obtain the names of all the physicians performed a medical procedure but they are not ceritifed to perform

32. Write a query in SQL to obtain the names of all the physicians, their procedure, date when the procedure was carried out and name of the patient on which procedure have been carried out but those physicians are not cetified for that procedure.

33. Write a query in SQL to obtain the name and position of all physicians who completed a medical procedure with certification after the date of expiration of their certificate

34. Write a query in SQL to obtain the name of all those physicians who completed a medical procedure with certification after the date of expiration of their certificate, their position, procedure they have done, date of procedure, name of the patient on which the procedure had been applied and the date when the certification expired

35. Write a query in SQL to obtain the names of all the nurses who have ever been on call for room 122.

36. Write a query in SQL to Obtain the names of all patients who has been prescribed some medication by his/her physician who has carried out primary care and the name of that physician

37. Write a query in SQL to obtain the names of all patients who has been undergone a procedure costing more than $5,000 and the name of that physician who has carried out primary care

38. Write a query in SQL to Obtain the names of all patients who had at least two appointment where the nurse who prepped the appointment was a registered nurse and the physician who has carried out primary care

39. Write a query in SQL to Obtain the names of all patients whose primary care is taken by a physician who is not the head of any department and name of that physician along with their primary care physician

Part (2) – My SQL General Studies (ICT410)

Award- Professional Certificate in Information Technology (MYSQL)

Lesson Videos

Introduction to My SQL

How to install My SQL in Windows 10

Full Course for beginner

Creating application by using MY SQL

My SQL Tutorial 1

My SQL Tutorials 2

My SQL Workbench Tutorial

Create Search System by using PHP

Textbooks

MySQLNotesForProfessionals

My SQL Tutorial

Software

My SQL Installer Web Community

My SQL Installer Community

Medical Data System

Part (3) – Graduate Certificate in Information Technology (Hospital Data System) (30 Credits)

- ICT409 Medical Data System (10 Credits)
- ICT410 MYSQL (10 Credits)
- ICT502 Data Base System (10 Credits)

Application

- Access
- STATA

MASTER OF SCIENCE (RENEWABLE ENERGY COURSE OUTLINE

Part (1) Preliminary Course

RE001- Foundation Studies in Renewable Energy and Sustainability
RE002- Grid Connected Photovoltaic Power Systems
RE003- Solar and Thermal Energy Systems
RE004- Energy Storage Systems
RE005- Renewable Energy Resource Analysis
RE006- Wind Energy Conversion Systems
RE007- Energy System Efficiency

Part (2) Qualified (1) Course

Semester (1)

RE008-Mathematics & Physics (I)
RE009-Mathematics & Physics (II)
RE010-Engineering Materials
RE011-Civil & Mechanical Engineering

Semester (2)

RE012-Electrical Engineering
RE013-Electrical Machines
RE014-Electronics Control
RE015-Electrical Project
RE016-Design & Management

Part (3) Qualified (2) Course

RE 501-Control of Solar Energy System
RE502- Biomass Gasification
RE503- Energy Management in Industrial and Commercial Facilities
RE504- Engineering Solution for Sustainability
RE505- Green Building Design
RE506- Low Emission Power Generation Technologies
RE507- Offshore Wind Turbines
RE508- Solar Hydrogen Energy System
RE509- Applied Photovoltaics
RE510- Water Conservation
RE511- Sustaining Earth Energy resource

A written report between 10,000 – 12,000 words that covers both theory & practical knowledge of the above units.

Part (4) Final Thesis

Res 601 Research Method
MAE 602 Thesis

This course guides the student, step by step, through the research process, from problem selection through writing up results. It provides all of the basics necessary to complete a research project in any discipline.

Outline. The following aspects are reflected in this course:

- What is research?
- Tools of research
- The problem: the heart of the research process
- Review of the related literature
- Planning your research design
- Writing the research proposal
- Qualitative research
- Historical research
- Descriptive research
- Experimental and causal - comparative designs
- Statistical techniques for analyzing quantitative data
- Technical details: style, format, and organization of the research report

Masters Research Proposal

Synopsis: Research students are expected to present a written research proposal within three months after commencement. The proposal is handed in to the study leader.

Assessors of this proposal are selected by the faculty for their understanding of the field and the research involved. The purpose of a research is to set out a plan for conducting the research and writing the dissertation within the available time. It should take account of the availability and guidance of the study leader.

The starting point for a research proposal is the topic, which is the field of interest in which the research is to be carried out. In introducing the topic, the proposal should clarify the field that it falls into and the specific part that field which the research will explore. It should clarify why the topic is of interest and importance, and how the proposed research will contribute to the filed of knowledge or profession. The proposal should clarify the research questions, ensuring that these are specific and answerable.

It is important to show how these questions relate to the topic are, and how they will advance the student's contribution. The proposal should detail the research to

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Res 601 Research Method

MENG6005 Quantitative Methods and Statistics (45 hrs) 3 credits

MAE 602 Thesis

Engineering Project/Thesis 24 credits

Candidates need to complete a 60000-words engineering dissertation (in Myanmar or English) and a 3000-words executive portfolio (in English).

This program requires the candidates to complete a dissertation as part of the assessment for the MSc (RE) degree. Doing a thesis means that instead of knowledge and information being presented and following a prescribed route for answering questions, candidates are thrust into an active role of managing an investigation into a topic area. This means researching and discovering things for themselves. They will have to set their own targets and parameters, pose their own central research questions and decide on the appropriate sources of information to support the research. It therefore requires the use of the higher-level cognitive skills of analysis, synthesis and evaluation. Candidates may choose an area of particular interest to them within the scope of course title. A dissertation is an individual effort and the candidate, academic tutor and the course professor will work together on constructing an approved topic (research question) and methodologies.

Engineering Dissertation Defense 9 credits

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Program Total Credits 48 credits

Candidates need to complete all course assessments with the results of Grade B+ or above.

MASTER OF SCIENCE (RENEWABLE ENERGY COURSE OUTLINE

Part (1) Preliminary Course

RE001- Foundation Studies in Renewable Energy and Sustainability
RE002- Grid Connected Photovoltaic Power Systems
RE003- Solar and Thermal Energy Systems
RE004- Energy Storage Systems
RE005- Renewable Energy Resource Analysis
RE006- Wind Energy Conversion Systems
RE007- Energy System Efficiency

Part (2) Qualified (1) Course

Semester (1)

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RE010-Engineering Materials
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Semester (2)

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RE013-Electrical Machines
RE014-Electronics Control
RE015-Electrical Project
RE016-Design & Management

Part (3) Qualified (2) Course

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RE502- Biomass Gasification
RE503- Energy Management in Industrial and Commercial Facilities
RE504- Engineering Solution for Sustainability
RE505- Green Building Design
RE506- Low Emission Power Generation Technologies
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Program Total Credits 48 credits

Candidates need to complete all course assessments with the results of Grade B+ or above.

Master of Science (Computer Network) (Each 10 credits) (70883)

Bachelor of Applied Science (Network)- 120 Credits

Master of Applied Science (Network)- 120 Credits

Total 240 credits

PART (1) Course Work in Graduate Diploma in Computer Network Level

(60 credits) (Each 10 credits)

ICTN701 APNET Content Management System

ICTN702 CISCO Certified Design Associate

ICTN703 CISCO Certified Network Associate

ICTN704 CISCO Firewall

ICTN705 CISCO LAN Switching Configuration

ICTN706 Computer Architecture and Security

PART (2) Course Work in Masters Level

(40 credits) (Each 10 credits)

Select 4 units

ICTN707 Computer Systems

ICTN708 Python Network Programming

ICTN709 Microsoft.NET Framework

ICTN710 Enterprise Network Monitoring

ICTN711 Parallel Computer Architecture

ICTN712 Cloud Computing

The students will have to write 20 pages study report for each of the subjects outlined below.

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, key points, key theory & practical application concepts in IT.

- Own idea on how to apply those concepts in real practical applications.

• Examples of IT system designs that use the concepts & knowledge expressed in those books (If any)

• Your comment on each book

Master of Applied Science Work Example

http://www.iqytechnicalcollege.com/Master Diploma in Information Technology-Worked Sample Report on IT Topics.pdf

PART (3) Master Project in Computer Network

(20 credits)

The candidate needs to write the project report for one topic mutually selected by the candidate and supervisor

REPORT GUIDE

http://www.mongroupsydney1.com/Report.pdf

Part (4) Master of Engineering (Computer Network) (70884)

Complete the following units after completion of Master of Applied Science (Computer Network) Each 10 credits

BAE 702 Engineering Management

BAE 703 Leadership & Human Resources Management

BAE 704 Risk Management & Industrial Safety

BAE 705 Engineering Competency Development

BAE 706 Engineering Report Writing

BAE 707 Engineering Ethics

Total Credits 320 Credits

Self Study Online CPD Courses

www.highlightcomputer.com/onlinecpdcourses.htm

To enrol these course , follow the steps

1.Pay the fees (First course is Kyats 30000, then Kyats 10000 per additional course) . Deposit into the following account

Daw Hla Myat Mon –Account Numbrer 020-33-500265-2 (Yoma Bank) and attached the evidence of deposit to this application form

2. Fill the online form. (Without evidence of fund deposit, no reply will be made.)

http://www.emailmeform.com/builder/form/H7zdPO8n8K6EBlG

3.Then , we will send you the download links to download the e-Books

4.We will send you CPD Course Attendance Certificate electronically.

5.Each course has 20 CPD Hours.

6.They are self study courses. No needs to submit the assessment tasks

7.The list of the CPD course attenders are not included in IQY Technical College Graduates List but the authenticity of issued IQY CPD Certificates can be enquired by emailing to iqytechnicalcollege@gmail.com

Study Areas

GE1	Electrical Wiring (EE)
GE2	Electrical Machine (EE)
GE3	Electrical Distribution (EE)
GE4	Power System Operation (EE)
GE5	Power System Protection
GE6	Occupational Health & Safety
GE7	Project Management (EE/CE/ME)
GE8	Electronics (EE)
GE9	Process Control (EE/ME)
GE10	Industrial Electronics (EE)
GE11	Programmable Logic Controller (EE/ME)
GE12	Photovoltaic Solar Electrical System
GE13	Principle of Engine(ME)
GE14	Fitting & Machining (ME)
GE15	Building Construction (CE)
GE16	Engineering Drawing I (EE/CE/ME)
GE17	Pipe Fitting (CE/ME)
GE18	Air-conditioning & Refrigeration (ME)
GE19	Computer Programming (EE/CE/ME)
GE20	Computer Networking (EE)
GE21	Welding (ME)
GE22	Painting & Decoration (CE)
GE23	Pnuematics (CE/ME)
GE24	Manufacturing Management (ME)
GE25	Surveying (CE)
GE26	Energy Efficient Building Design
GE27	Machine Principle(ME)
GE28	Hydraulic (CE/ME)

GE29	Materials & Corrosion Prevention (CE/ME)
GE30	Bricklaying (CE)
GE31	Sprouting & Guttering (CE)
GE32	Electronic Security Installation
GE33	Explosion Protection
GE34	Engineering Business Management
GE35	Scaffolding
GE36	Materials Handling & Storage
IE1	Engineering Mathematics
IE2	Engineering Physics
IE3	Material Science
IE4	Advanced Engineering Mathematics
IE5	Mechanical Science
IE6	Principle of Electricity
IE7	Electrical Circuit I (EE)
IE8	Electrical Circuit II (EE)
IE9	Advanced Building Construction (CE)
IE10	Transmission Line (EE)
IE11	Electrical & Mechanical Engineering Work Experience
IE12	Civil Engineering Work Experience
IE13	Workshop
IE15	Advanced Engineering Design & Project Work
IE16	Power System Analysis-Fault Calculation
IE17	Power Line Design
IE18	Building services
IE19	PCB Design
IE20	Maths References
IE21	Electrical Principle
IE22	Co-generation
IE23	Industrial Computer System
IE24	Microprocessor
IE25	Power System Fundamental
IE26	Electrical Communication Fundamental
IE27	Control Concept
IE28	Electronic Signal & System
IE29	Electrical Estimating
IE30	Electronic Workbench
IE31	Introduction to Renewable Energy Technology
IE32	Telecommunication Cabling & Installation
IE33	Hybrid Energy System
IE34	Electricity Supply Industrial Skills

GENERAL VOCATIONAL COURSES

www.highlightcomputer.com/othervocational.htm

- Self study,
- Present the record of study
- Certificate of Studies can be issued

GE36 Storage & Materials Handling

VOC 1-Aged Care Facility Design

VOC 2-Animal Handling

VOC 3-Business Planning

VOC 4-Construction Equipment & Methods

VOC 5-Construction Management Planning

VOC 6-Fabric Preparation

VOC 7-Hotel Management

VOC 8-Kitchen & Food Management

VOC 9-Laundry Design

VOC 10-Soil Management

VOC 11-Store Management

VOC 12-Supply Chain Management

GE36 Storage & Materials Handling

Storage

Ware House Design.pdf (0.96MB)
http://www.filefactory.com/file/579dksm43q2r/n/Ware_House_Design.pdf

store_productivity.pdf (0.15MB)
http://www.filefactory.com/file/62yo7hkstpxv/n/store_productivity.pdf

Organization & Management.pdf (0.64MB)
http://www.filefactory.com/file/2zw8ng392vup/n/Organization_&_Management.pdf

Store Stock Receiving & Storage.pdf (0.26MB)
http://www.filefactory.com/file/24zlf6jutmfn/n/Store_Stock_Receiving_&_Storage.pdf

Materials Handling

rigging.pdf (4.01MB)
http://www.filefactory.com/file/7csjb0vn7itv/n/rigging.pdf

Tools and material handling.pdf (0.02MB)
http://www.filefactory.com/file/1v1ohqxn4ifx/n/Tools_and_material_handling.pdf

Materials_handling_and_site_layout_control.PDF (6.63MB)
http://www.filefactory.com/file/104qms7h5lzz/n/Materials_handling_and_site_layout_control.PDF

RascoMaterialsHandlingPlan0510.pdf (0.24MB)
http://www.filefactory.com/file/36ctgd0iiv4b/n/RascoMaterialsHandlingPlan0510.pdf

nswp-Nuclear-Materiall-Handling.pdf (1.64MB)

http://www.filefactory.com/file/pg55qrprcj9/n/nswp-Nuclear-Materiall-Handling.pdf

Modern_Materials_Handling_&_Dock_Design.pdf (2.37MB)
http://www.filefactory.com/file/jz0nrf65qrn/n/Modern_Materials_Handling_&_Dock_Design.pdf

materialhandlingequipment.pdf (0.7MB)
http://www.filefactory.com/file/5poq8yx68mzp/n/materialhandlingequipment.pdf

Materials Handling_Powered Industrial Truck Final.pdf (0.15MB)
http://www.filefactory.com/file/2n6z6r9qw5m3/n/Materials_Handling_Powered_Industrial_Truck_Final.pdf

Material-Planning-Considerations.pdf (0.37MB)
http://www.filefactory.com/file/3bsygxmt9pi3/n/Material-Planning-Considerations.pdf

Material_Handling_Equipment (1).pdf (2.05MB)
http://www.filefactory.com/file/5gy8gsp8a7i1/n/Material_Handling_Equipment_(1).pdf

materialhandlingequipment (1).pdf (0.7MB)
http://www.filefactory.com/file/2dwlh5pm6szf/n/materialhandlingequipment_(1).pdf

Manual-Material-Handling-Fast-Fact-May-2010.pdf (0.11MB)
http://www.filefactory.com/file/2b683qhnmc8x/n/Manual-Material-Handling-Fast-Fact-May-2010.pdf

LiftingMovingMaterials.pdf (0.37MB)
http://www.filefactory.com/file/5acmmraor91r/n/LiftingMovingMaterials.pdf

Lifting_Techniques.ppt (1.42MB)
http://www.filefactory.com/file/56s4otwcp0x3/n/Lifting_Techniques.ppt

HazardousSubstancesPresen.ppt (1.53MB)
http://www.filefactory.com/file/237op15scsgz/n/HazardousSubstancesPresen.ppt

Guidance_Manual_Handling.pdf (0.47MB)
http://www.filefactory.com/file/dnjxkpvh73p/n/Guidance_Manual_Handling.pdf

Hazardous_Materials_and_Wastes.pdf (0.03MB)
http://www.filefactory.com/file/4qnankyc33cb/n/Hazardous_Materials_and_Wastes.pdf

BMT Mining and Bulk Handling brochure.pdf (3.36MB)
http://www.filefactory.com/file/2dblzrixiupd/n/BMT_Mining_and_Bulk_Handling_brochure.pdf

excavation-and-materials-management-plan.pdf (0.21MB)
http://www.filefactory.com/file/1wgdku8x5k3/n/excavation-and-materials-management-plan.pdf

ESRS_Gaza_Expansion_Spill_Prevention_Containment_Control.pdf (0.15MB)
http://www.filefactory.com/file/2yw76lwsqr3x/n/ESRS_Gaza_Expansion_Spill_Prevention_Containment_Control.pdf

Effective Materials Handling, Planning And Control.pdf (0.08MB)
http://www.filefactory.com/file/j3smu4qlgh5/n/Effective_Materials_Handling,_Planning_And_Control.pdf

37_Materials_Handling_and_Storage.pdf (0.04MB)
http://www.filefactory.com/file/5mmmqousn379/n/37_Materials_Handling_and_Storage.pdf

1-5+Hazardous+Materials+Management.pdf (0.16MB)
http://www.filefactory.com/file/5fitge6xj849/n/1-5+Hazardous+Materials+Management.pdf

VOC 1-Aged Care Facility Design

http://www.filefactory.com/file/23qq193ys9vj/gen-agedresi.pdf

VOC 2-Animal Handling

http://www.filefactory.com/file/1jhwchqbex3v/aen82.pdf

VOC 3-Business Planning

http://www.filefactory.com/file/51vth3sogyqh/1.1BusinessPlanning.pdf

VOC 4-Construction Equipment & Methods

http://www.filefactory.com/file/7d2m7vffi44n/bim_manual.pdf

http://www.filefactory.com/file/14ifaxfs40iz/chapter0.pdf

VOC 5-Construction Management Planning

http://www.filefactory.com/file/7ctk1ac2o757/Appendix%20H.pdf

VOC 6-Fabric Preparation

http://www.filefactory.com/file/3svepaga7l2t/05815.pdf

VOC 7-Hotel Management

http://www.filefactory.com/file/djh44gpi7cv/bsc_accomodation.pdf

http://www.filefactory.com/file/38e0g5t9l4mz/HotelManagement.pdf

http://www.filefactory.com/file/5qnbshea600v/WHO_CDS_EPR_2007_6c.pdf

VOC 8-Kitchen & Food Management

http://www.filefactory.com/file/wr6l91txcwj/foodbevless%20%281%29.pdf

http://www.filefactory.com/file/28bgs6jygbrd/FSLssn13_2_10_05.pdf

VOC 9-Laundry Design

e6-192-11-00.pdf (0.35MB)
http://www.filefactory.com/file/121tdy5y5xat/n/e6-192-11-00.pdf

GH2429302934.pdf (0.27MB)
http://www.filefactory.com/file/17b7byknopd/n/GH2429302934.pdf

NCEA_TCC_Final.pdf (1.51MB)
http://www.filefactory.com/file/1kt2waff56ix/n/NCEA_TCC_Final.pdf

e2-07-05-07.pdf (0.24MB)
http://www.filefactory.com/file/1lr5akktwqk5/n/e2-07-05-07.pdf

phg.pdf (0.88MB)
http://www.filefactory.com/file/1ovzk85vuhop/n/phg.pdf

plumbing code use ICC.pdf (0.34MB)
http://www.filefactory.com/file/2m9ugw2v6kp1/n/plumbing_code_use_ICC.pdf

mearu_laundry_design_guide.pdf (2.25MB)
http://www.filefactory.com/file/2s803dew0uqz/n/mearu_laundry_design_guide.pdf

EHEP000478.pdf (0.33MB)
http://www.filefactory.com/file/3fxl108rq9cb/n/EHEP000478.pdf

Biosecurity_Guidelines_ad.pdf (8.87MB)
http://www.filefactory.com/file/3g68qy41hzjr/n/Biosecurity_Guidelines_ad.pdf

cat_iwl_gb_lovi.pdf (5.65MB)
http://www.filefactory.com/file/3t2t37k1eigj/n/cat_iwl_gb_lovi.pdf

Exposure_Control_Plan.pdf (0.52MB)
http://www.filefactory.com/file/4ezlqyz8f7bl/n/Exposure_Control_Plan.pdf

62_1_2004.pdf (0.47MB)
http://www.filefactory.com/file/4vn0526kjoh/n/62_1_2004.pdf

Spontaneous_Ignition.pdf (0.6MB)
http://www.filefactory.com/file/4x6a5z36d61j/n/Spontaneous_Ignition.pdf

large_document.pdf (0.7MB)
http://www.filefactory.com/file/50ceow5up0kt/n/large_document.pdf

miller-folding-IJRR-2011.pdf (3.66MB)
http://www.filefactory.com/file/5ckwlrq02vz/n/miller-folding-IJRR-2011.pdf

Rip Rice HAND BOOK.pdf (0.5MB)
http://www.filefactory.com/file/5gbmw0yyiemx/n/Rip_Rice_HAND_BOOK.pdf

he.pdf (1.69MB)
http://www.filefactory.com/file/5hazan2f8wyp/n/he.pdf

usace_lightinglevels.pdf (0.03MB)
http://www.filefactory.com/file/5plth11j6q47/n/usace_lightinglevels.pdf

BloodPathogenGenIndus.ppt (2.46MB)
http://www.filefactory.com/file/6a7uajphxs9h/n/BloodPathogenGenIndus.ppt

pik_quik_7535.pdf (3.07MB)
http://www.filefactory.com/file/6jp7yho16sgx/n/pik_quik_7535.pdf

Engineering_for_Sustainable_Development.pdf (0.91MB)
http://www.filefactory.com/file/6l72t0j5w1s1/n/Engineering_for_Sustainable_Development.pdf

eic_in_HCF_03.pdf (4.99MB)
http://www.filefactory.com/file/75pnqkmfcp8x/n/eic_in_HCF_03.pdf

au.ncc.1.2012.pdf (37.47MB)
http://www.filefactory.com/file/7fvuj0pngbaj/n/au.ncc.1.2012.pdf

ijest-ng-vol3-no7-pp39-55.pdf (2MB)
http://www.filefactory.com/file/8um38tuv1vn/n/ijest-ng-vol3-no7-pp39-55.pdf

VOC 10-Soil Management

http://www.filefactory.com/file/11j85gvsnxfv/Acid_Sulphate_Soils_Mgt_Sub_Plan.pdf

VOC 11-Store Management

Ware House Design.pdf (0.96MB)
http://www.filefactory.com/file/y2rjf87u7ql/n/Ware_House_Design.pdf

Supply Chain Management in Oil & Gas Industry.pdf (0.18MB)
http://www.filefactory.com/file/3utjtahjw0br/n/Supply_Chain_Management_in_Oil_&_Gas_Industry.pdf

store_productivity.pdf (0.15MB)
http://www.filefactory.com/file/2uoqnl2mchx9/n/store_productivity.pdf

Store Stock Receiving & Storage.pdf (0.26MB)
http://www.filefactory.com/file/hcv0c7y5b3t/n/Store_Stock_Receiving_&_Storage.pdf

stkmod1.pdf (0.17MB)
http://www.filefactory.com/file/5mj2bjm3uhnd/n/stkmod1.pdf

Organization & Management.pdf (0.64MB)
http://www.filefactory.com/file/4uvzsi7wam4p/n/Organization_&_Management.pdf

sg_ch04.doc (0.15MB)
http://www.filefactory.com/file/7019oj0tnput/n/sg_ch04.doc

foodbevless.pdf (0.11MB)
http://www.filefactory.com/file/1dc73ceyia4n/n/foodbevless.pdf

five_critical_rules_for_firewall_management.pdf (0.19MB)
http://www.filefactory.com/file/7f1tynele26z/n/five_critical_rules_for_firewall_management.pdf

_08-0106.pdf (0.07MB)

http://www.filefactory.com/file/4xv491p4h1i9/n/_08-0106.pdf

VOC 12-Supply Chain Management

MGMT30011.pdf (0.01MB)
http://www.filefactory.com/file/3bly4o0469jl/n/MGMT30011.pdf

Supply_Chain_Management.pdf (17.73MB)
http://www.filefactory.com/file/7hb9eac6bmr/n/Supply_Chain_Management.pdf

Reiners.pdf (0.81MB)
http://www.filefactory.com/file/3tnlu9dn4m8l/n/Reiners.pdf

qt401de01_supply_chain_management.pdf (0.26MB)
http://www.filefactory.com/file/4hotefjk31sh/n/qt401de01_supply_chain_management.pdf

proc119--web.pdf (2.46MB)
http://www.filefactory.com/file/7ciri2qx8m3p/n/proc119--web.pdf

lsctmmod1.pdf (3.87MB)
http://www.filefactory.com/file/1welnfly2npf/n/lsctmmod1.pdf

Intro.ppt (0.07MB)
http://www.filefactory.com/file/7g1s4vhwl4bt/n/Intro.ppt

global-supply-chain.pdf (0.49MB)
http://www.filefactory.com/file/6ssu96zxjgh9/n/global-supply-chain.pdf

fundamentals-of-supply-chain-management.pdf (3.17MB)
http://www.filefactory.com/file/4e38lx2mzp5t/n/fundamentals-of-supply-chain-management.pdf

GBAT9127_SCM_OV_14s2_2014.pdf (0.42MB)
http://www.filefactory.com/file/74tsbilr1pbt/n/GBAT9127_SCM_OV_14s2_2014.pdf

CH14 Supply Chain Management.pdf (2.97MB)
http://www.filefactory.com/file/1p0jtqvg2evr/n/CH14_Supply_Chain_Management.pdf

e-business-SCMR-April26.pdf (0.08MB)
http://www.filefactory.com/file/28en8wk2sjsr/n/e-business-SCMR-April26.pdf

ChopraBookReview.pdf (0.05MB)
http://www.filefactory.com/file/6jgyqknyhwyz/n/ChopraBookReview.pdf

CH14 Supply Chain Management (1).pdf (2.97MB)
http://www.filefactory.com/file/3gzevb1xdjap/n/CH14_Supply_Chain_Management_(1).pdf

9781285210445.pdf (2.96MB)
http://www.filefactory.com/file/43embjhs6ulv/n/9781285210445.pdf

c01.pdf (0.14MB)
http://www.filefactory.com/file/3vrbkqexgidt/n/c01.pdf

5152_Mentzer_Chapter_1.pdf (0.47MB)
http://www.filefactory.com/file/28dgpls043rt/n/5152_Mentzer_Chapter_1.pdf

4016-16051-1-PB.pdf (0.38MB)
http://www.filefactory.com/file/3ns76k0l8rdp/n/4016-16051-1-PB.pdf

2552-10206-1-PB (1).pdf (0.18MB)
http://www.filefactory.com/file/7czhs6ilsgm1/n/2552-10206-1-PB_(1).pdf

0646-chapter-9-overview-of-oracle-advanced-pricing.pdf (0.75MB)
http://www.filefactory.com/file/16w7qfgm4rh3/n/0646-chapter-9-overview-of-oracle-advanced-pricing.pdf

3_2--49-50,Heaslip.pdf (0.07MB)
http://www.filefactory.com/file/8pf2rn75ttv/n/3_2--49-50,Heaslip.pdf

MGMT30011.pdf (0.01MB)
http://www.filefactory.com/file/2owljf30ivht/n/MGMT30011.pdf

SELF STUDY PROFESSIONAL DEVELOPMENT ONLINE LEARNING RESOURCES MATERIALS AND SELF ASSESSMENT ONLINE TESTS FOR ASSISTING THE CANDIDATES TO PREPARE FOR PROFESSIONAL ENGINEER (ELECTRICAL-BUILDING SERVICES) REGISTRATION WITH MYANMAR BOARD OF ENGINEERS

Prepared BY- U Kyaw Naing

Registered Professional Engineer of Queensland

RPEQ-Electrical (Registration Number 07661)

Board of Professional Engineers of Queensland State Government (Australia) www.bpeq.qld.gov.au

&

Electrical Engineering Teacher (TAFE-NSW) (Australia)

Based on 25 years experiences since BE (Electrical Power) Graduation from Yangon Institute of Technology in 1987 as electrical engineer, electrician and electrical engineering teacher in Myanmar, Fiji, Australia, New Zealand & Niue, these online electrical learning materials in line with the study materials being used to teach the engineering courses in Australia are prepared to assist Young Myanmar Engineers to participate in professional development programs of Myanmar Engineering Society to accomplish the aims & objectives of Myanmar Engineers Board in the process of Professional Engineers Registration in Myanmar.

Online tests and assessments are also included for the candidates to assess their self learning. The resources are not only theoretical studies but also industrial rules and regulations in Singapore, UK , Australia and New Zealand and practical resources of engineering practice. PEng registration competency report writing in Australia & New Zealand are also included in the resources. Engineering Report Writing.zip & (Engineering Competency Report Submitted by U Kyaw Naing for Registered Professional Engineer of Queensland, Australia). Browse http://www.electricaldiploma2013.zoomshare.com/ for details of Australian Electrical Training.

Members of Myanmar Engineering Society at the grade of Junior Member can utilize the materials uploaded to this site at free of charge for online self learning & self assessment. The candidates should have good internet access to download the study support materials from this site. But for sending the materials in USB or copying them from the authorised representatives in Myanmar or assessing and providing individual professional support by e-mail, appropriate fees can be chargeable.

Further contact should be made to: U Kyaw Naing at highlightcomputergroup1@ gmail.com

SCOPE- Electrical PE (Building Services)

PART (1)

YEAR 1 & 2 (Minumum 3 to 4 years is required for a graduate to become a PE)

(Total PDP Points for Informal Learning Activities-Private Study Part Time) (Total 10 points per year maximum)(MEB-PE Regulation Appendix 3). Ctrl+Click the link & then allow to download the contents.

The self study learning resources materials for SCOPE – Electrical PE (Building Services)

The tests are based on your general knowledge on the subject. They are not designed to test the limited area of study that the candidate learns one paper & sits one test.

1.Basic Electricity

1. DC Circuit
2. Alternating (sinusoidal) Voltage and current
3. Single phase AC Circuit
4. Phasor Algebra and AC Circuit
5. Resonance in RLC Circuit

STUDY MATERIALS (DC Circuits)

DC_Circuit_E003_E004.zip

http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip

ONLINE MCQ TEST (1)

http://www.filefactory.com/file/58r3nfe1qieh/n/E003_E004_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/3ebb0fe603a748b6b2430e75fb07af4f#/InitializeTest.xaml

http://www.classroomclipboard.com/503511/Home/Test/3ebb0fe603a748b6b2430e75fb07af4f#/QuestionPresenter.xaml?id=11

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- G4UYTV

STUDY MATERIALS (AC Circuit 1)

G002

-

ONLINE MCQ TEST (2)

http://www.filefactory.com/file/7ebmnciqxmf3/n/G002_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/f7fb9a22d8ba413a8d39bc6ef7be4d20#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- 8YGTHT

STUDY MATERIALS (AC Circuit 2)

G048_7769AC G048_Tutorials.zip

Notes for assignment/ tutorials

G048_Full_Part_1.zip G048Part2.zip

E025_Circuits_1 E025_Circuits_2

E025_Tutorial

Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip

Stage 3 Part 2.zip http://www.filefactory.com/file/c0ccdbc/n/Stage_3_Part_2.zip

ONLINE MCQ TEST (3)

http://www.filefactory.com/file/52h82a0t0f3f/n/E025_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/0d8e41400b24465b97e60b2a555d7cff#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- DCVK7

ONLINE MCQ TEST (4)

http://www.filefactory.com/file/713uvwk5vbel/n/G048_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/a03f83dbf40e4991800c44b484ae6a1d#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- G9PLM

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 4 HR x 0.5 = 2 HR

2. Three phase Circuits and System

1. Three phase voltage generation
2. Phasor diagram
3. Star/ Delta connection
4. Balanced Three phase loads
5. Active , Reactive and Apparent Power
6. Power Measurements
7. Power Factor Correction

STUDY MATERIALS (Three Phase Circuits)

G049_7762AB_7761M_Notes G049_7762ABTutorial

E029_Motor_Control_1 E029_Motor_Control_2

Fault Calculation

7762AB_Fault_Calculation.zip

AB-Part1.zip AB-Part_2.zip AB-Part_3.zip AB-Part4.zip AB-Part5.zip AB-Part6.zip

ABFormula.zip

Power System Analysis

7761M-Part1.zip 7761MPart-2.zip 7761M-Part-3.zip 7761M-Part-4.zip 7761M-Part-5.zip

7761M-Part-6.zip 7761M-Part-7.zip

Phase AC Supply Handout

Connection of balanced three phase loads handout

Star delta conversion handout

Connection of unbalanced three phase loads

Power and energy in ac circuit handout

Watt meter handout

Three Phase Power Handout

Power factor correction handout

High voltage transmission line losses handout

Symmetrical components handout

Distribution of fault currents through power system handout

Phase sequence diagrams for power systems handout

Phase sequence detectors handout,

Fault calculations on power system handout

Power Circuits (Reference)

Part 1	**Part 2**	**Part 3**
Part 4	**Part 5**	**Part 6**
Part 7	**Part 8**	**Part 9**
Part 10	**Part 11**	**Part 12**
Part 13	**Part 14**	**Part 15**
Part 16	**Part 17**	**Part 18**

Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip

E029Tutorial

ONLINE MCQ TEST (5)

G049 Test 1

http://www.filefactory.com/file/5vhbs8sn20f3/n/G049_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/d5b2138544c74b709963660627046ffe#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- UE6FAG

G049 Test 2

http://www.filefactory.com/file/611ftvpa3dit/n/G049_Online_Test_2_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/797cac44d12248b9b3be8507518c9bc4#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- PS83

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 4 HR x 0.5 = 2 HR

3. Magnetism and Magnetic Circuits

1. Magnetic Field
2. Magnetic Materials and Magnetization curves
3. Magnetic Equivalent Circuit
4. Sinusoidal Excitation
5. Magnetic losses

STUDY MATERIALS (Magnetic Circuits)

G001_Part_1 G001_Part_2 G001_Part_1 G001_Part_2

http://www.filefactory.com/file/cf9b277/n/G001.zip

http://www.filefactory.com/file/c0cc1cd/n/Stage_1_Part_4.zip

ONLINE MCQ TEST (6)

G001 Test 1

http://www.filefactory.com/file/7c658zyrj9gx/n/G001_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/ec4d44c4f8004474b48ceafa43b2e228#/InitializeTst.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- BDL8L85

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 2 HR x 0.5 = 1 HR

4.AC/DC Machines

1. DC Machine: operating principle, voltage and torque equations
2. Three phase Induction motors: operating principle, equivalent Circuit, torque-speed, Characteristics, losses and efficiency

STUDY MATERIALS (AC/DC Machines)

Elect Machine-G043+G044+G045.zip http://www.filefactory.com/file/c0b6668/n/Elect_Machine-G043_G044_G045.zip

G043_G045_7762AF_Notes G043_G045_Part_1_7762AF_Notes

G015_G046_G040_G043_G045_G042Tutorials

ESI12_14_Syn_Motor_Generator.zip ESI_13_Voltage_regulation_devices.zip

ESI_19.4_Turbine_Control.zip

ESI_19.2_Generator_Control_Load_Flow.zip

ESI_19.3_Generator_.zip

Synchronous Generator

Advanced AC Machines

AF_Wk_1-2.zip AF_Wk_2-3.zip AF_Wk_4.zip AF_Wk_5.zip AF_Wk_6.zip AF_Wk_7.zip AF_Wk_8.zip

AF_Wk_9.zip AF_Wk_10.zip AFWk11-12-13Part1.zip AFWk11-12-13Part2.zip AF_Wk_14.zip

AF_Wk_15.zip AF_Week_16.zip AF_wk_17.zip

Motor_Lab.pdf

Principle_of_Synchronous_motors.doc

SyncMotorsPowerControl.pdf

G043_G045_7762AF_Notes G043_G045_Part_1_7762AF_Notes

MachineControlCkt1.zip MachineControlCkt2.zip MachineControlCkt3.zip

Motor control 2 **Motor control 3** **Motor control 4** **Motor control 5**

Motor control 6 **Motor control 7** **Motor control 8** **Motor control 9**

Motor control 10 **Motor control 11** **Motor control 12** **Motor control 13**

Motor control 14 **Motor control 15** **Motor control 16**

E029_Motor_Control_1 E029_Motor_Control_2 E047Mech

Advanced DC Machines

G044_7762AC1 G044_7762AC2

http://www.filefactory.com/file/cf9a3a6/n/E029.zip

ONLINE MCQ TEST (7)

G043+G045 Test

http://www.filefactory.com/file/7h9o99zngfq1/n/G043_G045_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/2f02528bbe5d47ba8056aaeae1c66972#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- 7TBWXJ5

G044Test

http://www.filefactory.com/file/5iyno92bji67/n/G044_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/39a2497862a448b1b34e39893dd92183#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- VH4D

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 4 HR x 0.5 = 2 HR

5.Transformers

1. Ideal Transformer
2. Equivalent circuit
3. Phasor Diagrams
4. Determination of Parameters
5. Performance Evaluation
6. Auto-transformers
7. Three phase Transformers

STUDY MATERIALS (Power Transformer)

Power Transformer+Line-G040.zip

G040_7762AD_Notes

New-AA_AB_AD_AE_AF_AG_AH_4269T_Tutorials

ESI_4_11_Power_Transformer.zip

ESI_4_Power_Transformer.zip

7762AD Power Transformer

AD_Day_1.zip AD_Day_2.zip AD_Day_4.zip AD_Day_5.zip AD_Day_6.zip

AD_Day_8.zip AD_Day_9.zip

Power Transformer Reference

TrRef1.zip TrRef2.zip TrRef3_0.zip TrRef4.zip TtrRef5.zip TRRef6.zip

TrRef7.zip TrRef8.zip TrRef9.zip

ONLINE MCQ TEST (8)

G040 Test 1

http://www.filefactory.com/file/3ve7iz9640yp/n/G040_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/b12e17211b8b407b9cac0025aff7462c#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- 67VWMYJ

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 4 HR x 0.5 = 2 HR

6.Active Power and Frequency Control

1. Governor Control Systems
2. Transmission Losses , penalty factors and loss coefficients
3. Automatic Generation Control
4. Active power Control Devices

STUDY MATERIALS (Power Frequency Control 1)

ESI12_14_Syn_Motor_Generator.zip ESI_13_Voltage_regulation_devices.zip

ESI_18.1_Substation_equipments_1.zip ESI_18.2_Substation_equipments_2.zip

ESI_18.3_Substation_equipments_3.zip ESI_33.3_Harmoniceffect_on_machines.zip

ESI_33.4_Harmonic_in_synchronous_machines.zip

ESI_33.5_Harmonic_in_transformer.zip

ESI_33.6_Power_Quality_Improvement_Capacitor_bank.zip

ESI_33.7_Power_Quality_Improvement-Filter.zip

ESI_33.8_Power_Quality_Improvement-General.zip

ESI_33.9_Power_Quality_Improvement-Power_Conditioner.zip

Stage 2 Part 1A.zip http://www.filefactory.com/file/c0cb96f/n/Stage_2_Part_1A.zip

Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip

ESI12_14_Harmonic ESI12_14_Reactor ESI12_14_Syn_Motor_Generator

ESI_19.1_Computer_Control ESI_19.4_Turbine_Control

ESI_19.2_Generator_Control_Load_Flow

ESI_19.3_Generator ESI_22.1_Generator_Study ESI_22.2_Voltage_surge_control

ESI_24_Modern_Power_System

Lesson 1
Lesson 3

Power System Operation (General aspect) Reading 1

Power System Operation (General aspect) Reading 2

Power System Operation (General aspect) Reading 3

Power System Operation (General aspect) Reading 4

Power System Operation (General aspect) Reading 5

Power System Operation (General aspect) Reading

http://kyawnaing325.zoomshare.com/files/7762ElectricalPowerModules.htm

7762AH Power System Fundamental

7762AH Power System Fundamental

AH_Day_1.zip AH_Day_2_3.zip AH_Day_4.zip AH_Day_5.zip AH_Day_6_7_8.zip

Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip

7.Reactive Power and Frequency Control

1. Production and Absorption of Reactive Power
2. Methods of Voltage Control
3. Reactive Power and Voltage Control Devices
4. Application to Transmission and Distribution Systems

STUDY MATERIALS (Power Frequency Control 2)

G015_G037_G038_G030Pt1_7762AG_Notes G015_G042_G037_G038_G039_Part_2_Notes

G015_G042_G037_G038_G039_Part_2_Notes G015_G037_G038_G030Pt1_7762AG_Notes

Power system 2-G037+G038+G039.zip

http://www.filefactory.com/file/c0b7a33/n/Power_system_2-G037_G038_G039.zip

Power system 2-G037+G038+G039.zip

http://www.filefactory.com/file/c0b7a33/n/Power_system_2-G037_G038_G039.zip

Transmission line-G042.zip

http://www.filefactory.com/file/c0b7dad/n/Transmission_line-G042.zip

G042_Part_3_Notes G037_G038_G030Pt1_7762AG_Notes

ONLINE MCQ TEST (9)

G037+G038+G039 Test 1

http://www.filefactory.com/file/6o7ow8er4f9l/n/G037_G038_G039_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/9696759cec624be1a7793b7d1edd87c2#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- HYCEUE

ONLINE MCQ TEST (10)

G037+G038+G039 Test 2

http://www.filefactory.com/file/5by85g9rxmoh/n/G037_G038_G039_Online_Test_2_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/8ea510a583bf41b5b6a994378eeb912f#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- LCCD

ONLINE MCQ TEST (11)

G037+G038+G039 Test 3

http://www.filefactory.com/file/5fy0reggoh0n/n/G037_G038_G039_Online_Test_3_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/adae49f2f39c4158925fe7010b460540#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- S947G

ONLINE MCQ TEST (12)

G037+G038+G039 Test 4

http://www.filefactory.com/file/q1sn4hitpjb/n/G037_G038_G039_Online_Test_4_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/f1486f63ce8f4e349919659cd7bd4a98#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- 49JL

ONLINE MCQ TEST (13)

G037+G038+G039 Test 5

http://www.filefactory.com/file/738vtwzyd3qp/n/G037_G038_G039_Online_Test_5_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/029dcf4b117c47109ff8d981a108e5c6#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- KV6K3G After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 8 HR x 0.5 = 4HR

8.Electric Power Distribution Systems

1. Distribution System Configuration
2. Primary and Secondary Distribution
3. Ring , Radial and Inter-connected Systems
4. Distribution System Layout
5. Planning Criteria and Network Design
6. Fault Diagnosis and Restoration of Supply

STUDY MATERIALS (Electrical Power Distribution)

Electrical Distribution Typed Notes

AA_Typed_Note_1.doc AA_Typed_Note_2.doc AA_Typed_Notes_3-.doc

7762AA_Typed_Note_4.doc

AA_Typed_note_5.doc AA_Typed_note_6.doc AA_typed_note_7.doc

AA_typed_note_8.doc 7762AA_Module_Book

Power System 1-G015+G046+A010

AA.zip

http://www.filefactory.com/file/c0b7e92/n/AA.zip

AE.zip

http://www.filefactory.com/file/c0b7ff7/n/AE.zip

AG.zip

http://www.filefactory.com/file/c0b7f21/n/AG.zip

A010.zip

http://www.filefactory.com/file/c0b7f3c/n/A010.zip
AA_AB_AD_AE_AF_AG_AH_4269T_Tutorials

ESI_8_Insulation_1.zip

ESI_8_Insulation_2.zip

ESI_25_27_31_32_Part_2_Installation_and_testing_0.zip

ESI_25_27_31_32_Part_3_Electrical_Drawing.zip

ESI_25_27_31_32_Part_4_Data_Com_and_Wiring.zip

ESI_25_27_31_32_Part_5_Installation_Work_Books.zip

ESI_25_27_31_32_Part_6_Switching_1_2.zip

ESI_25_27_31_32_Part_7_Switching_3_4.zip

ESI_25_27_31_32_Part_8a_Electrical_Installation_Requirement_1.zip

ESI_25_27_31_32_Part_8b_Electrical_Installation_Requirement_2.zip

ESI_9.1_Protection_Relay_Construction.zip

ESI_9.2Test_Equipment.zip

Study Package (10) HV Equipments

ESI10.1_HV_equipments.zip

ESI10.2_Substation_equipments.zip

Study Package (12) Harmonics

ESI12_14_Harmonic.zip

ESI12_14_Reactor.zip

ESI12_14_Syn_Motor_Generator.zip

Study Package (13) Voltage Regulation 3333

ESI_13_Voltage_regulation_devices.zip

Study Package (18) Sub station equipments

ESI_18.1_Substation_equipments_1.zip

ESI_18.2_Substation_equipments_2.zip

ESI_18.3_Substation_equipments_3.zip

Study Package (33) Power Quality

ESI_33.1_Power_Quality_Concept.zip

ESI_33.2_Harmonic_in_capacitor.zip

ESI_33.3_Harmoniceffect_on_machines.zip

ESI_33.4_Harmonic_in_synchronous_machines.zip

ESI_33.5_Harmonic_in_transformer.zip

ESI_33.6_Power_Quality_Improvement_Capacitor_bank.zip

ESI_33.7_Power_Quality_Improvement-Filter.zip

ESI_33.8_Power_Quality_Improvement-General.zip

ESI_33.9_Power_Quality_Improvement-Power_Conditioner.zip

Study Package (34) Power Equipments Commissioning

ESI_34.1_Power_Eqpt_Commissioning_1.zip

ESI_34.2_Power_Eqpt_Commissioning_2.zip

ESI_34.3_Power_Eqpt_Commissioning_3.zip

ESI_34.4_Power_Eqpt_Commissioning_4.zip

ESI_34.5_Power_Eqpt_Commissioning_5.zip

ESI_34.6_Power_Eqpt_Commissioning_6.zip

ESI_34.7_Power_Eqpt_Commissioning_Trade_1.zip

ESI_34.8_Power_Eqpt_Commissioning_Trade_2.zip

ESI_34.9_Power_Eqpt_Commissioning_Trade_3.zip

ESI_34.10_Power_Eqpt_Commissioning_Trade_4.zip

ESI_34.11_Power_Eqpt_Commissioning_Trade_5.zip ESI_34.12_Power_Eqpt_Commissioning_Trade_6.zip

ESI_34.13_Power_Eqpt_Configuration_1.zip

ESI_34.14_Power_Eqpt_Configuration_2.zip

Study Package (34) Equipments Commissioning ESI_34.1_Background_theory_for_equipments_commissioning_1.zip

ESI_34.2_Background_theory_for_equipments_commissioning_2.zip

ESI_34.3_Background_theory_for_equipments_commissioning_3.zip

ESI_34.4_Background_theory_for_equipments_commissioning_4.zip

ESI_34.5_Background_theory_for_equipments_commissioning_5.zip

ESI_34.6_Background_theory_for_equipments_commissioning_6.zip

BACK UP FOR 2& 10

Stage 2 Part 1A.zip http://www.filefactory.com/file/c0cb96f/n/Stage_2_Part_1A.zip

Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip

Switch Gear

Elect_Installation_Protection_Method_Devices.zip

ElectSystSafety1.zip

ElectSystSafety2.zip

ESI_27.4Circuit_Breaker_1.zip

ESI_27.5_Circuit_Breaker_2.zip

ESI_7_Switching_system_design_consideration.zip

ESI_8.2_Site_Insulation_Surge_Protection.zip

ONLINE MCQ TEST (14)

G015+G046 Test 1

http://www.filefactory.com/file/50ox6xeklufp/n/G015_G046_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/67dbfd25caa3484498a850f3b1050457#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code -----G9UCJ

ONLINE MCQ TEST (15)

G015+G046 Test 2

http://www.filefactory.com/file/1s822zs1jz89/n/G015_G046_Online_Test_2_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/204b4231f0ea4492986ce2ec11302704#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code -----FSXU

ONLINE MCQ TEST (16)

G015+G046 Test 3

http://www.filefactory.com/file/6pcivv5e0y05/n/G015_G046_Online_Test_3_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/542fb0501a334d8788c68c19208e96e1#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code -----JE3W

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 4 HR x 0.5=2HR

9.Building Services Engineering

1. Estimation of Power Demand
2. LV Cable and Bus-way Systems
3. Conductor Sizing Factors
4. Circuit Protective Conductor
5. Earth Leakage and Touch Voltage
6. Inspection and Testing
7. Lightning Protection

STUDY MATERIALS (Building Service Engineering)

Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring

1Wiring_E033_E008 2Wiring_E033_E008

http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
Stage 1 Part 1.zip http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip
Stage 1 Part 5.zip http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip

Electrical_safe_working.zip

NREL_Disconnect_Reconnect.zip

Stage 1 Part 5.zip http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip

Stage 1 Part 1.zip http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip

ELV_Cable_termination ELV_Cable_termination Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring

1Wiring_E033_E008 2Wiring_E033_E008

ElectricalDrawing1.zip ElectricalDrawing2.zip ElectricalDrawing3.pdf

Stage 2 Part 2A.zip
http://www.filefactory.com/file/c0cca4a/n/Stage_2_Part_2A.zip

Construction ElectricalSafety.zip

InserviceTesting.zip

Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008

BACK UP FOR 9 & 10

Stage 2 Part 1B.zip http://www.filefactory.com/file/c0ccac0/n/Stage_2_Part_1B.zip

Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip

Stage 2 Part 6.zip http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip

Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip

Stage 3 Part 4.zip http://www.filefactory.com/file/c0ccd9a/n/Stage_3_Part_4.zip

Stage 4 Part 8.zip http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip

Stage 4 Part 9.zip http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip

Stage 4 Part 10.zip http://www.filefactory.com/file/c0cc5f8/n/Stage_4_Part_10.zip

Stage 3 Part 5.zip http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip

Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip

Stage 3 Part 9.zip http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip

http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
AS3000-2007Overview.zip AS3000_AS3008TablesExtract.zip WiringRules.zip **Part (1) Study the following notes** Installation_Requirement_1-A.zip Installation_Requirement_1-B.zip Installation_Requirement_2-A.zip Installation_Requirement_2-B.zip Stage_2_Wiring.zip
http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
AS3000-2007Overview.zip AS3000_AS3008TablesExtract.zip WiringRules.zip Part (1) Study the following notes Installation_Requirement_1-A.zip Installation_Requirement_1-B.zip Installation_Requirement_2-A.zip Installation_Requirement_2-B.zip Stage_2_Wiring.zip

Cable_Installation.zip

Regulatory_Requirement.zip

BACK UP FOR 9 & 10

Stage 2 Part 1B.zip http://www.filefactory.com/file/c0ccac0/n/Stage_2_Part_1B.zip

Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip

Stage 2 Part 6.zip http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip

Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip

Stage 3 Part 4.zip http://www.filefactory.com/file/c0ccd9a/n/Stage_3_Part_4.zip

Stage 3 Part 5.zip http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip

Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip

Stage 3 Part 9.zip http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip

Stage 4 Part 7.zip http://www.filefactory.com/file/c0cc479/n/Stage_4_Part_7.zip

Stage 4 Part 8.zip http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip

Stage 4 Part 9.zip http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip

Stage 4 Part 10.zip http://www.filefactory.com/file/c0cc5f8/n/Stage_4_Part_10.zip

http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip **G103+104 Notes+Lessons** http://www.filefactory.com/file/2bg8qift6nzh/n/G103_G104_zip
Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008 Fixing Equipments E002_E005.zip Lighting.zip E_trade_1.zip E_trade_2.zip E_trade_3.zip E_trade_4.zip G008_General_Notes_1.zip G008_General_Notes_2.zip Hazard_Identification.zip G003_G004_Wiring_2_Part_1.zip G003_G004_Wiring_2_Part_2.zip Cable_CktProt_E_Accessories.zip Cable_Conduit_E_Accessories.zip Elect_Installation_Protection_Method_Devices.zip Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_2.zip ElectricInstallationDesign.zip ElectSystSafety1.zip ElectSystSafety2.zip FireProtHeatingTestingEarthing.zip GeneralWiring.zip HazardLightingPanel.zip PanelRCDWireSpecial_Installation.zip ProtectionMethods.zip

Electrician Capstone unit.pdf

http://www.filefactory.com/file/c392ae1/n/Electrician_Capstone_unit.pdf

Electrician Capstone Test Old Questions

Electrician Capstone Unit Study Guide.zip

http://www.filefactory.com/file/c4bbf1b/n/Electrician_Capstone_Unit_Study_Guide.zip

ONLINEASSESSMENT (17)

Reflect your experience in the work place , write the technical report of 10 pages & submit it.

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 4 HR x 0.5 = 2HR

10.General Protections

1. Basic Protection Principles
2. Instrument Transformers
3. Co-ordination of Over-current and Earth Protection for Distribution Systems
4. Pilot-wire Differential Protection Feeder

STUDY MATERIALS (General Protection Principles)

AE.zip

http://www.filefactory.com/file/c0b7ff7/n/AE.zip
G015_G042_G037_G038_G039_Part_2_Notes

ESI_27.1_Arts_and_Science_of_Protective_Relaying_1.zip

ESI_27.2_Arts_and_Science_of_Protective_Relaying_2.zip

ESI_27.3_Arts_and_Science_of_Protective_Relaying_3.zip

ESI_27.4Circuit_Breaker_1.zip ESI_27.5_Circuit_Breaker_2.zip

ESI_27_1_Relay_Principle_1.zip ESI_27_1_Relay_Principle_2.zip

ESI_27_1_Relay_Principle_3.zip ESI_27.2_Element_of_Relay_Protection.zip

ESI_27.3_Relay_operation_characteristics.zip ESI_27.4_Relay_connection_and_response.zip

ESI_27.5_Machine_and_busbar_protection_1.zip ESI_27.5_Machine_and_busbar_protection_2.zip

ESI_27.5_Machine_and_busbar_protection_3.zip

ESI_27.6_Feeder_protection.zip ESI_27.7_CT_and_PT.zip ESI_27.9_Comparator.zip

ESI_27.10_Static_relay.zip ESI_27.11_Test_and_maintenance.zip

ESI_27.12_Circuit_Breaker_1.zip ESI_27.12_Circuit_Breaker_2.zip

ESI_27.12_Circuit_Breaker_3.zip ESI_27.12_Circuit_Breaker_4.zip

ESI_27.8_Line_protection_1.zip ESI_27.8_Line_protection_2.zip

ESI_27.8_Line_protection_3.zip ESI_27.5_Machine_and_busbar_protection_2_0.zip

ONLINE MCQ TEST (18)

G015+G046 Test 4

http://www.filefactory.com/file/4obspr3n1fkf/n/G015_G046_Online_Test_4_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/faf4fd339f25425784a5c04d186fe5db#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code -----CCLV2SN

ONLINE MCQ TEST (19)

G015+G046 Test 5

http://www.filefactory.com/file/5t1q4kveec4v/n/G015_G046_Online_Test_5_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/0fd45546932d49dbb628fee5cbbaed7b#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code -----T6X5982

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 2 HR x 0.5 = 1HR

TOTAL PROFESSIONAL DEVELOPMENT PROGRAM (PDP) HOURS = 20 Hours For Year 1 &

SCOPE Electrical PE (Building Services)

PART (2)

YEAR 3 & 4 (Minumum 3 to 4 years is required for a graduate to become a PE)

The practice reports need to write for each topics of the study materials included in Scope Part II.

The reports should include the followings:

- Professional topics----- You need to select the topic such as building electrical wiring or power distribution etc
- Fundamental of Engineering- What knowledge you got from the materials in your selected professional topic..
- Engineering Management--- How will you manage the l project / workforce to implement the engineering tasks by applying those knowledge in actual workplace project or simulated work place and project?.
- Rules Regulations, Standards & Specifications- You need to refer the relevant engineering rules, regulations, standards and specifications in the tasks expressed in your report.
- Safety—How will you safeguard public safety in performing the engineering tasks?
- Ethics--- How will you apply professional code of ethics in performing the engineering tasks?

The candidate should use the following format in the practice exercise reports for each topics of the Scope II that are simulated practice tasks for preparing the Professional Experience and Competency Report to be submitted to Myanmar Engineers Board for Professional Engineer (PE) Registration.

Section (1) Introduction

Section (2) Work experiences in brief and highlight the major important projects

Section 3 to 10 , the following competency should be addressed

- Apply engineering knowledge, methods and techniques
- Use of engineering technology , tools and equipments
- Safeguard public safety
- Recognition the impacts of engineering on the environment , economy and society.
- Manage engineering activities
- Communicate engineering information.
- Work collaboratively
- Main and enhance engineering skills and knowledge. (Ref-MEB PEng Reg)

1.Electrical Power Supply

1. Generation, Transmission and Distribution
2. Application of Electricity
3. Solar Photovoltaic System
4. Design of Electrical Installation
5. Load Estimation
6. Power Factor Correction
7. Power Quality and Power System Harmonics
8. Consumer and Substation Switchboards and Switch Gears
9. Maintenance of Electrical Equipments, Switch Gears and Cables
10. Design of Energy Efficiency and Sustainability

STUDY MATERIALS (Electrical Power Supply)

G008_General_Notes_1.zip G008_General_Notes_2.zip MachineControlCkt1.zip MachineControlCkt2.zip

MachineControlCkt3.zip MachineRepair1.zip MachineRepair2.zip MachineRepair3.zip ProcessControlCkt1.zip ProcessControlCkt2.zip ProcessControlCkt3.zip

ESI_8_Insulation_1 ESI_8_Insulation_2 ESI_9.1_Protection_Relay_Construction

ESI_9.2Test_Equipment ESI_33.1_Power_Quality_Concept ESI_33.2_Harmonic_in_capacitor

ESI_33.3_Harmoniceffect_on_machines ESI_3.1_HV_Measurement_Cable_Test.zip

ESI_3.2_Magnetic_measurement.zip ESI_3.3_Power_measurement.zip

ESI_3.4_RLC_measurement_1.zip ESI_3.4_RLC_measurement_2.zip ESI_3.4_RLC_measurement_3.zip

ESI_3.5_Digital_equipments.zip ESI_3.6_V.A.W_meter.zip ESI_3.7T_and_M.zip ESI_3.8_Thermography.zip

ESI_4_11_Power_Transformer.zip ESI_5_Machinery_Installation.zip ESI_7_Drawing_Switching_Diagram.zip

ESI_7_Electrical_Installation_Design.zip ESI10.1_HV_equipments.zip

ESI10.2_Substation_equipments.zip ESI12_14_Harmonic.zip

ESI12_14_Reactor.zip ESI12_14_Syn_Motor_Generator.zip

ESI_13_Voltage_regulation_devices.zip

Power system 2-G037+G038+G039.zip

http://www.filefactory.com/file/c0b7a33/n/Power_system_2-G037_G038_G039.zip

ESI12_14_Harmonic ESI12_14_Reactor ESI12_14_Syn_Motor_Generator

ESI_19.1_Computer_Control ESI_19.4_Turbine_Control

ESI_19.2_Generator_Control_Load_Flow

ESI_19.3_Generator ESI_22.1_Generator_Study ESI_22.2_Voltage_surge_control

ESI_24_Modern_Power_System

2.bUnintentional_islanding_in_distribution_grids_with_a_high_penetration_of_inverter-based_DG.mht

2.Un intentional islanding in distribution grids-Part 2 2.c.pdf

2.Un intentional islanding in distribution grids-Part 3 2.d-1.pdf

2.Distribution Network 1 2b_Distribution_Network.pdf

2.Distribution Network 2 2d-2.pdf

2.Distribution Network 3 2d-3.pdf

Solar Inspector Training.zip

ESI_22.2_Voltage_surge_control.zip

ESI_33.5_Harmonic_in_transformer.zip

ESI_33.6_Power_Quality_Improvement_Capacitor_bank.zip

ESI_33.7_Power_Quality_Improvement-Filter.zip

ESI_33.8_Power_Quality_Improvement-General.zip

ESI_33.9_Power_Quality_Improvement-Power_Conditioner.zip

ESI_25_27_31_32_Part_2_Installation_and_testing_0.zip

ESI_25_27_31_32_Part_3_Electrical_Drawing.zip

ESI_25_27_31_32_Part_4_Data_Com_and_Wiring.zip

ESI_25_27_31_32_Part_5_Installation_Work_Books.zip

ESI_25_27_31_32_Part_6_Switching_1_2.zip

ESI_25_27_31_32_Part_7_Switching_3_4.zip

ESI_25_27_31_32_Part_8a_Electrical_Installation_Requirement_1.zip

ESI_25_27_31_32_Part_8b_Electrical_Installation_Requirement_2.zip

ESI_13_Voltage_Regulating_Devices.zip

ESI_27.7_CT_and_PT.zip

ESI_27.9_Comparator.zip ESI_27.10_Static_relay.zip ESI_27.11_Test_and_maintenance.zip

Advanced Diploma in Electricity Supply Industry (ESI)

The LINK for

Study Package (2)-Power System Planning

Study Package (3)-Testing

The LINK for

Study Package (16+17)-OHS

Study Package (20) Transmission System

Study Package (28) Power Accessories

The LINK for

Study Package (23) Machine Rating

The LINK for

Study Package (5) Machine Installation

Study Package (9) Protection

ESI_9.2Test_Equipment.zip

The LINK for

Study Package (3)-Testing

Study Package (5) Machine Installation

Study Package (15) Electrical Estimating

The LINK for

Study Package (1)-OHS

Study Package (12) Harmonics

Study Package (19) Computer Control

Study Package (20) Transmission System

The LINK for

Study Package (4) Power Transformer

Study Package (7) Drawing

Study Package (21+34)-Electrical Distribution

The LINK for

Study Package (10) HV Equipments

Study Package (18) Sub station equipments

The LINK for

Study Package (12) Harmonics

Study Package (22) Generator

Study Package (24) Signal Communication

The LINK for

Study Package (19) Generator

Study Package (25+27+31+32) Installation & Testing

The LINK for

Study Package (9) Protection

Study Package (16+17)-OHS

The LINK for

Study Package (22) Generator

The LINK for

Study Package (34) Power Equipments Commissioning

Study Package (21+34)-Electrical Distribution

The LINK for

Study Package (26) (41)

The LINK for

Study Package (6+ 10) HV Equipments

The LINK for

Study Package (7) Drawing

Study Package (8) Insulation

Study Package (13) Voltage Regulation

The LINK for

Study Package (15) Electrical Estimating

Study Package (15) Transmission System

Study Package (25+27+31+32) Installation & Testing

The LINK for

Study Package (18) Sub station equipments

Study Package (28) Power Accessories

The LINK for

Study Package (24) Modern Power System

The LINK for

Study Package (33) Power Quality

The LINK for

Study Package (27) Relay

The LINK for

Study Package (13) Voltage Regulation

The LINK for

Study Package (35)

The LINK for

Study Package (34) Equipments Commissioning

The LINK for

Study Package (8) Insulation

Study Package (12) Harmonics

The LINK for

Study Package (25+27+31+32) Installation & Testing

Study Package (25+27+31+32) Installation & Testing

The LINK for

Study Package (27) Relay

The LINK for

Study Package (20) Transmission System

EXERCISE ASSESSMENT (20)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in electrical power supply in above mentioned format & submit it to the assessor. (Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

2.Lighting Requirement for Workplace , Indoor and Outdoor

1. Visual Needs for Safety and Security
2. Determine the Lighting Requirement for Indoor and Outdoor Workplaces

STUDY MATERIALS (Lighting Requirement)

Lighting.zip E_trade_1.zip E_trade_2.zip E_trade_3.zip E_trade_4.zip

G008_General_Notes_1.zip G008_General_Notes_2.zip Hazard_Identification.zip

K041 Lesson 16-Energy efficiency+Lighting.zip

http://www.filefactory.com/file/c0b6e0f/n/K041_Lesson_16-Energy_efficiency_Lighting.zip

K041 Lesson 17-Illumination+Smoke alarm.zip

http://www.filefactory.com/file/c0b6fc5/n/K041_Lesson_17-Illumination_Smoke_alarm.zip

EXERCISE ASSESSMENT (21)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in workplace lighting in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

3.Energy Efficiency Requirement

1. Minimum Energy Efficiency Requirements for New Installation and Replacement of Systems and Equipments in Buildings
2. Replacement of Components of Systems and Equipments in Buildings
3. Criteria for Determining Compliance with Energy Efficiency in Building with regards to Air conditioning and Heat Rejection Equipments, Water Heater, Motor Drives and Lighting used in Buildings.

STUDY MATERIALS (Energy Efficiency)

Building Design+Material Science-K041+E047.zip

http://www.filefactory.com/file/c0b645d/n/Building_Design_Material_Science-K041_E047.zip

K041_Building_Design_1

K041_Building_Design_2

K041Airconditioning

K041Energy_Management_Textbook

E047Mech

UEENEEK041B_E047B_Tutorials

Energy_survey_assignment

K041Textbook1.zip **K041Textbook2.zip** **K041Textbook3.zip**

EXERCISE ASSESSMENT (22)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in energy efficiency in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

4.Protection for Safety

1. Principle of Operation of Protective Devices
2. Maximum Demand and Diversity Factors
3. Protection against Over Current and Short Circuit Currents
4. Protective Devices and Circuit Conductors
5. Discrimination in Protection of Electrical Circuits

STUDY MATERIALS (Protection for Safety)

http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
G033

http://www.filefactory.com/file/1b2utxydvcx7/n/G033_zip

Wiring_Notes_1.

Wiring_Notes_2 Switchboard_Wiring

1Wiring_E033_E008 2Wiring_E033_E008

Fixing Equipments

E002_E005.zip Lighting.zip

E_trade_1.zip

E_trade_2.zip

E_trade_3.zip

E_trade_4.zip

G008_General_Notes_1.zip

G008_General_Notes_2.zip

Hazard_Identification.zip

G003_G004_Wiring_2_Part_1.zip

G003_G004_Wiring_2_Part_2.zip

Cable_CktProt_E_Accessories.zip

Cable_Conduit_E_Accessories.zip

Elect_Installation_Protection_Method_Devices.zip

Elect_Installation_Requirement_1.zip

Elect_Installation_Requirement_1.zip

Elect_Installation_Requirement_2.zip

ElectricInstallationDesign.zip

ElectSystSafety1.zip

ElectSystSafety2.zip

FireProtHeatingTestingEarthing.zip

GeneralWiring.zip

HazardLightingPanel.zip

PanelRCDWireSpecial_Installation.zip

ProtectionMethods.zip

G008_General_Notes_1.zip G008_General_Notes_2.zip MachineControlCkt1.zip MachineControlCkt2.zip

MachineControlCkt3.zip MachineRepair1.zip MachineRepair2.zip MachineRepair3.zip ProcessControlCkt1.zip ProcessControlCkt2.zip ProcessControlCkt3.zip

ESI_8_Insulation_1 ESI_8_Insulation_2 ESI_9.1_Protection_Relay_Construction

ESI_9.2Test_Equipment ESI_33.1_Power_Quality_Concept ESI_33.2_Harmonic_in_capacitor

ESI_33.3_Harmoniceffect_on_machines ESI_3.1_HV_Measurement_Cable_Test.zip

ESI_3.2_Magnetic_measurement.zip ESI_3.3_Power_measurement.zip

ESI_3.4_RLC_measurement_1.zip ESI_3.4_RLC_measurement_2.zip

ESI_3.4_RLC_measurement_3.zip

ESI_3.5_Digital_equipments.zip ESI_3.6_V.A.W_meter.zip ESI_3.7T_and_M.zip

ESI_3.8_Thermography.zip

ESI_4_11_Power_Transformer.zip ESI_5_Machinery_Installation.zip

ESI_7_Drawing_Switching_Diagram.zip ESI_7_Electrical_Installation_Design.zip

ESI10.1_HV_equipments.zip ESI10.2_Substation_equipments.zip

ESI12_14_Harmonic.zip ESI12_14_Reactor.zip

ESI12_14_Syn_Motor_Generator.zip ESI_13_Voltage_regulation_devices.zip

BACK UP FOR 4

Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip

Stage 4 Part 15.zip http://www.filefactory.com/file/c0cc7cb/n/Stage_4_Part_15.zip

Stage 4 Part 17.zip http://www.filefactory.com/file/c0cc76b/n/Stage_4_Part_17.zip

Stage 4 Part 7.zip http://www.filefactory.com/file/c0cc479/n/Stage_4_Part_7.zip

Stage 4 Part 14.zip http://www.filefactory.com/file/c0cc684/n/Stage_4_Part_14.zip

Study Package (19) Generator

ESI_19.4_Generator_.zip

Study Package (28) Power Accessories

ESI_28.1_Power_Accessories_1.zip ESI_28.2_Power_Accessories_2.zip

ESI_28.3_Power_Accessories_3.zip ESI_28.4_Power_Accessories_4.zip

ESI_28.5_Power_Accessories_5.zip ESI_28.6_Power_Accessories_6.zip

Study Package (34) Equipments Commissioning

ESI_34.1_Background_theory_for_equipments_commissioning_1.zip

ESI_34.2_Background_theory_for_equipments_commissioning_2.zip

ESI_34.3_Background_theory_for_equipments_commissioning_3.zip

ESI_34.4_Background_theory_for_equipments_commissioning_4.zip

ESI_34.5_Background_theory_for_equipments_commissioning_5.zip

ESI_34.6_Background_theory_for_equipments_commissioning_6.zip

Study Package (27) Relay

ESI_27_1_Relay_Principle_1.zip ESI_27_1_Relay_Principle_2.zip

ESI_27_1_Relay_Principle_3.zip

ESI_27.2_Element_of_Relay_Protection.zip

ESI_27.3_Relay_operation_characteristics.zip ESI_27.4_Relay_connection_and_response.zip

ESI_27.5_Machine_and_busbar_protection_1.zip ESI_27.5_Machine_and_busbar_protection_2.zip

ESI_27.5_Machine_and_busbar_protection_3.zip

ESI_27.6_Feeder_protection.zip ESI_27.7_CT_and_PT.zip ESI_27.9_Comparator.zip

ESI_27.10_Static_relay.zip ESI_27.11_Test_and_maintenance.zip

ESI_27.12_Circuit_Breaker_1.zip ESI_27.12_Circuit_Breaker_2.zip

ESI_27.12_Circuit_Breaker_3.zip ESI_27.12_Circuit_Breaker_4.zip

ESI_27.8_Line_protection_1.zip ESI_27.8_Line_protection_2.zip

ESI_27.8_Line_protection_3.zip ESI_27.5_Machine_and_busbar_protection_2_0.zip

EXERCISE ASSESSMENT (23)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in protection and safety in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

5.Cables,Bus-ways and Distribution Boards

1. Types and Characteristics of Cables
2. Method Installation
3. Sizing of Conduit and Trunking
4. Factors Affecting the Current Carrying Capacities of Cables
5. Sizing of Cables and Bus-ways for use Under Different Types of Conditions
6. Connected Load, Maximum Demand and Circuit Breakers Ratings for an Electrical Distribution Board

STUDY MATERIALS (Electrical Installation)

http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip

AS3000-2007Overview.zip AS3000_AS3008TablesExtract.zip WiringRules.zip

Part (1) Study the following notes

Installation_Requirement_1-A.zip Installation_Requirement_1-B.zip

Installation_Requirement_2-A.zip Installation_Requirement_2-B.zip

Stage_2_Wiring.zip

G003_G004_Wiring_2_Part_1.zip

G003_G004_Wiring_2_Part_2.zip

Cable_CktProt_E_Accessories.zip

Cable_Conduit_E_Accessories.zip

Elect_Installation_Protection_Method_Devices.zip

Elect_Installation_Requirement_1.zip

Elect_Installation_Requirement_1.zip

Elect_Installation_Requirement_2.zip

ElectricInstallationDesign.zip

ElectSystSafety1.zip

ElectSystSafety2.zip

FireProtHeatingTestingEarthing.zip

GeneralWiring.zip

HazardLightingPanel.zip

PanelRCDWireSpecial_Installation.zip

ProtectionMethods.zip

Assessment

Read the above notes files and do the assignments for the following tutorial file.

WiringPracticals.zip

G003G004Tutorial.zip

PRACTICAL

Workshop 2+3

WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip

WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip

ElectricalWorkshopPart3_G008_Group1Machine_.zip

ElectricalWorkshopPart3_G008_Group2LineProtection_.zip

ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip

OTHER PRACTICALS

ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip

Electrical_Workshop_Part_2_Practical_1_to_18.zip

Electrical_Workshop_Part_2_Practical_19_to_21.zip

G003_G004_G009Practicals.pdf

G005

UEENEEG005B		Verify compliance and functionality of general electrical installations

G005.zip

Power Distribution Trade

Power_Distribution_Trade.zip

Metering

Metering.zip

Switch Gear

Elect_Installation_Protection_Method_Devices.zip

ElectSystSafety1.zip ElectSystSafety2.zip

7762AH Power System Fundamental

AH_Day_1.zip AH_Day_2_3.zip AH_Day_4.zip AH_Day_5.zip AH_Day_6_7_8.zip

ESI_27.4Circuit_Breaker_1.zip ESI_27.5_Circuit_Breaker_2.zip

ESI_7_Switching_system_design_consideration.zip ESI_8.2_Site_Insulation_Surge_Protection.zip

EXERCISE ASSESSMENT (24)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in electrical installation in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

6.Earthing

1. Purpose of Earthing
2. Methods of Earthing
3. Earth Fault Loop Impedance and Earth Fault Current
4. Suitable Sizes of Circuit Protective Conductor
5. Testing of Earthing

STUDY MATERIALS (Electrical Earthing)

G007

G007 Lesson 1 AS3000 Wiring rule overview.zip
http://www.filefactory.com/file/cf94220/n/G007_Lesson_1_AS3000_Wiring_rule_overview.zip

G007 Lesson 2 Maximum Demand calculation.zip
http://www.filefactory.com/file/cf9456f/n/G007_Lesson_2_Maximum_Demand_calculation.zip

G007 Lesson 3 Cable selection.zip
http://www.filefactory.com/file/cf9465c/n/G007_Lesson_3_Cable_selection.zip

G007 Lesson 4 Cable voltage drop calculation.zip
http://www.filefactory.com/file/cf9479e/n/G007_Lesson_4_Cable_voltage_drop_calculation.zip

G007 Lesson 5 Derating of cable part 1.zip
http://www.filefactory.com/file/cf95acb/n/G007_Lesson_5_Derating_of_cable_part_1.zip

G007 Lesson 6 Derating of cable part 2.zip
http://www.filefactory.com/file/cf95a6b/n/G007_Lesson_6_Derating_of_cable_part_2.zip

G007 Lesson 7 Derating of cable for HRC fuse protection.zip
http://www.filefactory.com/file/cf95cd7/n/G007_Lesson_7_Derating_of_cable_for_HRC_fuse_protection.zip

G007 Lesson 8 Final subcircuit fault loop impedance.zip
http://www.filefactory.com/file/cf95dd1/n/G007_Lesson_8_Final_subcircuit_fault_loop_impedance.zip

Electrical Installation requirement

FireProtHeatingTestingEarthing.zip

HazardLightingPanel.zip

PanelRCDWireSpecial_Installation.zip

ProtectionMethods.zip

ESI_8.2_Site_Insulation_Surge_Protection.zip

Power system 2-G037+G038+G039.zip

http://www.filefactory.com/file/c0b7a33/n/Power_system_2-G037_G038_G039.zip

G037+G038+G039 Lesson 2-Site Earthing.zip

http://www.filefactory.com/file/c0bb244/n/G037_G038_G039_Lesson_2-Site_Earthing.zip

G037+G038+G039 Lesson 8-Turbine Control+Power Line Earthing.zip
http://www.filefactory.com/file/c0bb521/n/G037_G038_G039_Lesson_8-Turbine_Control_Power_Line_Earthing.zip

G037+G038+G039 Lesson 9-Insulator.zip

http://www.filefactory.com/file/c221eff/n/G037_G038_G039_Lesson_9-Insulator.zip

Power System (2)

G037+G038+G039 Lesson 1-Power Flow.zip

http://www.filefactory.com/file/c0bb2a3/n/G037_G038_G039_Lesson_1-Power_Flow.zip
G037+G038+G039 Lesson 2-Site Earthing.zip

http://www.filefactory.com/file/c0bb244/n/G037_G038_G039_Lesson_2-Site_Earthing.zip
G037+G038+G039 Lesson 4-Auxiliary System+Harmonic.zip

http://www.filefactory.com/file/c0bb3c3/n/G037_G038_G039_Lesson_4-Auxiliary_System_Harmonic.zip
G037+G038+G039 Lesson 3-Power System Control Equipments.zip

http://www.filefactory.com/file/c0bced7/n/G037_G038_G039_Lesson_3-Power_System_Control_Equipments.zip
G037+G038+G039 Lesson 5-Harmonic.zip

http://www.filefactory.com/file/c0bb35b/n/G037_G038_G039_Lesson_5-Harmonic.zip
G037+G038+G039 Lesson 6-Harmonic Calculation.zip
http://www.filefactory.com/file/c0bb43f/n/G037_G038_G039_Lesson_6-Harmonic_Calculation.zip

G037+G038+G039 Lesson 7-Synchronous Generator Loading.zip

http://www.filefactory.com/file/c0bb49d/n/G037_G038_G039_Lesson_7-Synchronous_Generator_Loading.zip
G037+G038+G039 Lesson 8-Turbine Control+Power Line Earthing.zip
http://www.filefactory.com/file/c0bb521/n/G037_G038_G039_Lesson_8-Turbine_Control_Power_Line_Earthing.zip

G037+G038+G039 Lesson 9-Insulator.zip

http://www.filefactory.com/file/c221eff/n/G037_G038_G039_Lesson_9-Insulator.zip

G037+G038+G039 Lesson 10-Reliability of Power System.zip
http://www.filefactory.com/file/c0bb6e4/n/G037_G038_G039_Lesson_10-Reliability_of_Power_System.zip

G037+G038+G039 Lesson 11-Harmonic Reduction.zip

http://www.filefactory.com/file/c0bce89/n/G037_G038_G039_Lesson_11-Harmonic_Reduction.zip
G037+G038+G039 Lesson 12-Grounding + Power Quality.zip
http://www.filefactory.com/file/c0bb872/n/G037_G038_G039_Lesson_12-Grounding_Power_Quality.zip
G037+G038+G039 Lesson 13-Power Quality.zip
http://www.filefactory.com/file/c0bb98d/n/G037_G038_G039_Lesson_13-Power_Quality.zip
G037+G038+G039 Lesson 14-Harmonic Model.zip
http://www.filefactory.com/file/c0bcad7/n/G037_G038_G039_Lesson_14-Harmonic_Model.zip
G037+G038+G039 Lesson 15-Harmonic Losses in Transformer.zip
http://www.filefactory.com/file/c0bca73/n/G037_G038_G039_Lesson_15-Harmonic_Losses_in_Transformer.zip
G037+G038+G039 Lesson 16-Reliability Improvement.zip
http://www.filefactory.com/file/c0bcba0/n/G037_G038_G039_Lesson_16-Reliability_Improvement.zip

G037+G038+G039 Lesson 17-Preparation for emergency.zip

http://www.filefactory.com/file/c0bcbd7/n/G037_G038_G039_Lesson_17-Preparation_for_emergency.zip
G037+G038+G039 Lesson 18-Harmonic problems.zip
http://www.filefactory.com/file/c0bcb68/n/G037_G038_G039_Lesson_18-Harmonic_problems.zip
G037+G038+G039 Lesson 19-Synchronous machine problems.zip
http://www.filefactory.com/file/c0bccb8/n/G037_G038_G039_Lesson_19-Synchronous_machine_problems.zip

G037+G038+G039 Lesson 20-Power Generation + Generator Control.zip

http://www.filefactory.com/file/c0bcc20/n/G037_G038_G039_Lesson_20Power_Generation_Generator_Control.zip
G037+G038+G039 Lesson 21-Turbine Control+ Digital Excitation.zip

http://www.filefactory.com/file/c0bcdf6/n/G037_G038_G039_Lesson_21-Turbine_Control_Digital_Excitation.zip
G037+G038+G039 Lesson 22-Power System Protection.zip
http://www.filefactory.com/file/c0bcd4c/n/G037_G038_G039_Lesson_22-Power_System_Protection.zip

G037+G038+G039 Lesson 23-Switch Gear.zip

http://www.filefactory.com/file/c0bcea8/n/G037_G038_G039_Lesson_23-Switch_Gear.zip

EXERCISE ASSESSMENT (25)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in site earthing in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

7.Emergency Lighting

1. Exit and Emergency Lighting Requirements for Evaluation of Occupants
2. Types of Back-up Power Supply
3. Exit and Directional Signs

STUDY MATERIALS (Emergency Lighting)

EE 617 Building Electrical and Mechanical System Part 1 (1 pt)

EE 617 Building Electrical and Mechanical System Part 2

BAE 606 Building Service Electrical & Mechanical Engineering
Lighting.zip

E_trade_1.zip E_trade_2.zip E_trade_3.zip E_trade_4.zip

EXERCISE ASSESSMENT (26)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in emergency lighting in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

8.Standby Power Generator System

1. Types of Essential and Critical Loads
2. Sizing of Generator
3. Voltage Regulation and its Effects on Generator Sizing
4. Protection of Alternators and Prime Movers
5. Installation of Standby Generator System Including Day-tank Battery and Charger, Fuel Supply, Engine cooling system, Plant room ventilation and fresh air intake, contend instrumentation plant and automatic transfer switch.

STUDY MATERIALS (Standby Power GeneratorSystem)

Study Package (22) Generator

ESI_22.1_Generator_Study.zip

ESI_22.2_Voltage_surge_control.zip

Study Package (23) Machine Rating

ESI_23.1_Generator_Rating.zip

ESI_23.1_Transformer_Rating.zip

Study Package (24) Modern Power System

ESI_24_Modern_Power_System.zip

EE 512 Electrical Power Generation System (1 pt)

EE 512 Principles of Power Systems

EE 512 Generation Transmission and Distribution of Electrical Power

EXERCISE ASSESSMENT (27)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in stand by power system in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

9.Automatic Fire Alarm System

1. Requirement for automatic and manual fire detection system and purpose of compartmentation as required by the fire code.
2. Interaction with other building services as emergency voice communication system, lifts, AHU, pressurization fans and auto-doors during alarm activation.

STUDY MATERIALS (Automatic Fire Alarm System)

Part 1 Over all Knowledge of the subject

BAE 606 Building Service Electrical & Mechanical Engineering

Part 2 Competency units of the subject

Building Electrical & Mechanical System

EE 617 Building Electrical and Mechanical System Part 1 (1 pt)

EE 617 Building Electrical and Mechanical System Part 2

HazardLightingPanel.zip

ADDITIONAL STUDY FOR AUTOMATIC FIRE ALARM SYSTEM

Contact: highlightcomputergroup1@gmail.com to request the URL for download

10.Emergency Voice Communication System

1. Requirement for public address system for building above 24 meters but less than 60 meters.
2. Requirements for emergency voice communication for building above 60 meters.
3. Requirement for fireman intercom.

STUDY MATERIALS (Emergency Voice Communication System)

Study Package (24) Signal Communication

ESI_26_Electronics_Signals.zip

FireProtHeatingTestingEarthing.zip

E071Hazard_Identification_Wk6_.zip

EXERCISE ASSESSMENT (28)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in emergency voice communication system in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

ADDITIONAL STUDY FOR EMERGENCY VOICE COMMUNICATION

Contact: highlightcomputergroup1@gmail.com to request the URL for download

11.Inspection, Testing and Common Violation in Electrical Installation

1. Mandatory requirements for inspection and testing of electrical prior to energisation of electrical supply
2. Types of test instruments and standard methods of testing.

STUDY MATERIALS (Electrical Testing & Inspection)

Electrical Risk Assessment

Project Risk Management References

Electrician Capstone unit.pdf

http://www.filefactory.com/file/c392ae1/n/Electrician_Capstone_unit.pdf

Electrician Capstone Test Old Questions

Electrician Capstone Unit Study Guide.zip

http://www.filefactory.com/file/c4bbf1b/n/Electrician_Capstone_Unit_Study_Guide.zip

SubstationEntry.zip

Construction ElectricalSafety.zip

InserviceTesting.zip

UEENEEE033

Electrical_safe_working.zip

NREL_Disconnect_Reconnect.zip

AS3000-2007Overview.zip

AS3000_AS3008TablesExtract.zip

WiringRules.zip

Part (1) Study the following notes

Installation_Requirement_1-A.zip

Installation_Requirement_1-B.zip

Installation_Requirement_2-A.zip

Installation_Requirement_2-B.zip

Stage_2_Wiring.zip

Cable_Installation.zip

Protection_1.zip Protection_2.zip

System_safety_1.zip System_safety_2.zip

Regulatory_Requirement.zip

FireProtHeatingTestingEarthing.zip

EXERCISE ASSESSMENT (29)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in electrical safety inspection and testing in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

12.Measuring Instruments

1. Principle of operation of Electrical Measuring Instruments
2. Essential of Indicating Instruments
3. Types of Instruments
4. Errors Common to All Types of Instruments
5. Moving Iron Instruments
6. Moving coil Instruments
7. Comparison Between Moving Iron and Moving Coil Instruments
8. Comparison Between Moving Iron and Dynometer Type Instrument
9. Extension of Instrument Range
10. Measurement of Power
11. Watt Meter, Dynometer Type Wattmeter
12. Energy Meter, Multi-meter or AVO Meter, Electronic Multi-meter
13. Digital Multi-meter

STUDY MATERIALS (Electrical Measurement)

EE 404 Electrical Measurement (1 pt)

EXERCISE ASSESSMENT (30)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in electrical measurement and testing in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

13.Electrical Engineering Codes/ Standards

1. Codes, Standards and Regulations
2. Codes and Standards for building services

STUDY MATERIALS (Electrical Engineering Code and Standard)

MYANMAR

Myanmar Electrical Regulations

UK

IEE2002

Electrical Building Services IEE based

Domestic Electric Wiring BS7671_2008

Handbook of Electrical Installation Practice UK

USA

IEEE colored books

Handbook of Electrical Design Details

American Electrician Handbook

IEC

Electrical Engineer Portable Handbook (IEC)

AUSTRALIA & NEW ZEALAND

Australian Electrical Wiring Rules Part 1

Australian Electrical Wiring Rules Part 2

Australian Electrical Wiring Rules Part 3

New South Wales Electrical Service Rules Australia

OTHERS

Switch Gear Manual

Energy Management Handbook

Handbook of Electrical Design Details
Newnes Electrical Power Engineer Handbook

Newnes_Electrical_Engineers_Handbook

Power Fault Calculation & Protection Cable Selection_Note

Power Data Planning India

Switch Gear Online

Engineering Competency Report Submitted by U Kyaw Naing for Registered Professional Engineer of Queensland

REFERENCES

Service_Rule_1 Service_Rule_2 Service_Rule_3

AS3000 Wiring Rules Overview

AS3000-2007Overview.zip

AS3000_AS3008TablesExtract.zip

WiringRules.zip

E071DesiE071HVOverheadConductors_Wk2-3_.zip

E071LVOverheadConductor_Wk4-5_.zip

E071Hazard_Identification_Wk6_.zip

E071General_Wiring_Wk7-8_.zip

E071UGCableSpecification_Wk9-10-11_.zip

E071TelecomDatacom_Wk12_.zip

E071Switching_Wk13_.zip

E071DesignStdOHDevelopment_Wk14-16_.zip

12-Specifications

13-BSpecifications

14-Specifications

E071DesiE071HVOverheadConductors_Wk2-3_.zip 6-ElectricalDrawing
BACK UP FOR 2, 6 & 10 Stage 4 Part 7.zip http://www.filefactory.com/file/c0cc479/n/Stage_4_Part_7.zip Stage 4 Part 11.zip http://www.filefactory.com/file/c0cc540/n/Stage_4_Part_11.zip Stage 4 Part 12.zip http://www.filefactory.com/file/c0cc566/n/Stage_4_Part_12.zip Stage 4 Part 13.zip http://www.filefactory.com/file/c0cc6c1/n/Stage_4_Part_13.zip

Electrician Capstone unit.pdf

http://www.filefactory.com/file/c392ae1/n/Electrician_Capstone_unit.pdf

Electrician Capstone Test Old Questions

Electrician Capstone Unit Study Guide.zip

http://www.filefactory.com/file/c4bbf1b/n/Electrician_Capstone_Unit_Study_Guide.zip

OTHERS REFERENCES

E_trade_1.zip E_trade_2.zip E_trade_3.zip E_trade_4.zip

G008_General_Notes_1.zip G008_General_Notes_2.zip

Part (1) Study the following notes

Installation_Requirement_1-A.zip Installation_Requirement_1-B.zip

Installation_Requirement_2-A.zip Installation_Requirement_2-B.zip

Stage_2_Wiring.zip

Do the assignments from the following book & submit the assignment (1)

Cable_Installation.zip

Assignment: At the end of each chapter, there are review questions & exercises. You need to do all exercises & submit them as assignment

Part (2) Study the following notes

Protection_1.zip Protection_2.zip System_safety_1.zip System_safety_2.zip

Do the assignments from the following book & submit the assignment (2)

Regulatory_Requirement.zip

Assignment: At the end of each chapter, there are review questions & exercises. You need to do all exercises & submit them as assignment

Tutorial review questions and answers

Electrical_trade_review_questions_and_answers.zip

Stage 2 Part 6.zip
http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip

Stage_1_Wiring_Practical

Stage_2_Wiring

System_Installation_Examples_-_NUER02_version

System_safety_1

System_safety_2

Stage_1_Wiring_Practical.zip

Electrical_safe_working.zip

OTHER REFERENCES

UEENEEG003B		Install wiring and accessories for low voltage circuits
UEENEEG004B		Install low voltage electrical apparatus and associated equipment

G003_G004_Wiring_2_Part_1.zip

G003_G004_Wiring_2_Part_2.zip

Stage 3 Part 1B.zip
http://www.filefactory.com/file/c0ccc42/n/Stage_3_Part_1B.zip

Cable_CktProt_E_Accessories
Cable_Conduit_E_Accessories

Stage 4 Part 8.zip
http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip

Cable+CktProt+E Accessories

Cable+Conduit+E Accessories

Elect Installation Protection Method Devices

Stage 4 Part 9.zip
http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip

G003+G004 Notes Upload
Cable_CktProt_E_Accessories.zip

Cable_Conduit_E_Accessories.zip

Elect_Installation_Protection_Method_Devices.zip

Elect_Installation_Requirement_1.zip

Elect_Installation_Requirement_1.zip

Elect_Installation_Requirement_2.zip

ElectricInstallationDesign.zip

Stage 3 Part 5.zip
http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip

ElectSystSafety1

ElectSystSafety2

Energy survey assignment

FireProtHeatingTestingEarthing

G003_G004_G009Practicals

G003_G004_Wiring_2_Part_1

G003_G004_Wiring_2_Part_2

G003G004Tutorial

G005

ElectSystSafety1.zip

ElectSystSafety2.zip

FireProtHeatingTestingEarthing.zip

GeneralWiring.zip

HazardLightingPanel.zip

PanelRCDWireSpecial_Installation.zip

ProtectionMethods.zip

Assessment

Read the above notes files and do the assignments for the following tutorial file.

Stage 3 Part 9.zip
http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip

WiringPracticals

WorkShop_Part_2_Practical_1_to_6_

WorkShop_Part_2_Practical_7_to_12_

WorkShop_Part_2_Practical_13_to_17_

WorkShop_Part_2_Practical_18_to_21_

EXERCISE ASSESSMENT (31)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in electrical engineering codes and standards used in engineering work in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

SELF STUDY PROFESSIONAL DEVELOPMENT ONLINE LEARNING RESOURCES MATERIALS AND SELF ASSESSMENT ONLINE TESTS FOR ASSISTING THE CANDIDATES TO PREPARE FOR PROFESSIONAL ENGINEER (ELECTRONICS) REGISTRATION WITH MYANMAR BOARD OF ENGINEERS

Prepared BY- U Kyaw Naing

Registered Professional Engineer of Queensland

RPEQ-Electrical (Registration Number 07661)

Board of Professional Engineers of Queensland State Government (Australia) www.bpeq.qld.gov.au

&

Electrical Engineering Teacher (TAFE-NSW) (Australia)

Based on 25 years experiences since BE (Electrical Power) Graduation from Yangon Institute of Technology in 1987 as electrical engineer, electrician and electrical engineering teacher in Myanmar, Fiji, Australia, New Zealand & Niue, these online electrical learning materials in line with the study materials being used to teach the engineering courses in Australia are prepared to assist Young Myanmar Engineers to participate in professional development programs of Myanmar Engineering Society to accomplish the aims & objectives of Myanmar Engineers Board in the process of Professional Engineers Registration in Myanmar.

Online tests and assessments are also included for the candidates to assess their self learning. The resources are not only theoretical studies but also industrial rules and regulations in Singapore, UK , Australia and New Zealand and practical resources of engineering practice. PEng registration competency report writing in Australia & New Zealand are also included in the resources.

Browse www.electricaldiploma2013.zoomshare.com for details of Australian Electrical Training.

Members of Myanmar Engineering Society at the grade of Junior Member can utilize the materials uploaded to this site at free of charge for online self learning & self assessment. The candidates should have good internet access to download the study support materials from this site. But for sending the materials in USB or copying them from the authorised representatives in Myanmar or assessing and providing individual professional support by e-mail, appropriate fees can be chargeable.

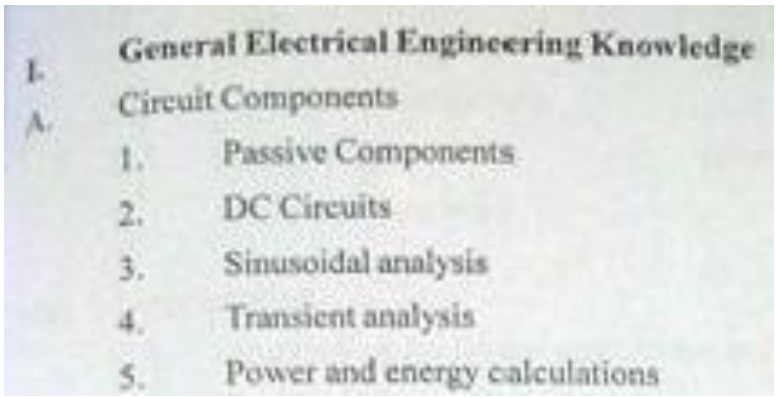
Further contact should be made to: U Kyaw Naing at highlightcomputergroup1@ gmail.com

SCOPE- Electrical PE (Building Services)

PART (1)

YEAR 1 & 2 (Minumum 3 to 4 years is required for a graduate to become a PE)

(Total PDP Points for Informal Learning Activities-Private Study Part Time) (Total 10 points per year maximum)(MEB-PE Regulation Appendix 3). Ctrl+Click the link & then allow to download the contents.



STUDY MATERIALS (DC Circuits)

DC_Circuit_E003_E004.zip

http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip

The tests are based on your general knowledge on the subject. They are not designed to test the limited area of study that the candidate learns one paper & sits one test.

ONLINE MCQ TEST (1)

http://www.filefactory.com/file/58r3nfe1qieh/n/E003_E004_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/3ebb0fe603a748b6b2430e75fb07af4f#/InitializeTest.xaml

http://www.classroomclipboard.com/503511/Home/Test/3ebb0fe603a748b6b2430e75fb07af4f#/QuestionPresenter.xaml?id=11

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- G4UYTV

STUDY MATERIALS (AC Circuit 1)

G002

ONLINE MCQ TEST (2)

http://www.filefactory.com/file/7ebmnciqxmf3/n/G002_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/f7fb9a22d8ba413a8d39bc6ef7be4d20#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- 8YGTHT

STUDY MATERIALS (AC Circuit 2)

G048_7769AC G048_Tutorials.zip

Notes for assignment/ tutorials

G048_Full_Part_1.zip G048Part2.zip

E025_Circuits_1 E025_Circuits_2

E025_Tutorial

Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip

Stage 3 Part 2.zip http://www.filefactory.com/file/c0ccdbc/n/Stage_3_Part_2.zip

ONLINE MCQ TEST (3)

http://www.filefactory.com/file/52h82a0t0f3f/n/E025_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/0d8e41400b24465b97e60b2a555d7cff#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- DCVK7

ONLINE MCQ TEST (4)

http://www.filefactory.com/file/713uvwk5vbel/n/G048_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/a03f83dbf40e4991800c44b484ae6a1d#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- G9PLM

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 4 HR x 0.5 = 2 HR

STUDY MATERIALS (Three Phase Circuits)

G049_7762AB_7761M_Notes G049_7762ABTutorial

E029_Motor_Control_1 E029_Motor_Control_2

Fault Calculation

7762AB_Fault_Calculation.zip

AB-Part1.zip AB-Part_2.zip AB-Part_3.zip AB-Part4.zip AB-Part5.zip AB-Part6.zip

ABFormula.zip

Power System Analysis

7761M-Part1.zip 7761MPart-2.zip 7761M-Part-3.zip 7761M-Part-4.zip 7761M-Part-5.zip

7761M-Part-6.zip 7761M-Part-7.zip

Phase AC Supply Handout

Connection of balanced three phase loads handout

Star delta conversion handout

Connection of unbalanced three phase loads

Power and energy in ac circuit handout

Watt meter handout

Three Phase Power Handout

Power factor correction handout

High voltage transmission line losses handout

Symmetrical components handout

Distribution of fault currents through power system handout

Phase sequence diagrams for power systems handout

Phase sequence detectors handout,

Fault calculations on power system handout

Power Circuits (Reference)

Part 1	**Part 2**	**Part 3**
Part 4	**Part 5**	**Part 6**
Part 7	**Part 8**	**Part 9**
Part 10	**Part 11**	**Part 12**
Part 13	**Part 14**	**Part 15**
Part 16	**Part 17**	**Part 18**

Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip

E029Tutorial

ONLINE MCQ TEST (5)

G049 Test 1

http://www.filefactory.com/file/5vhbs8sn20f3/n/G049_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/d5b2138544c74b709963660627046ffe#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- UE6FAG

G049 Test 2

http://www.filefactory.com/file/611ftvpa3dit/n/G049_Online_Test_2_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/797cac44d12248b9b3be8507518c9bc4#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- PS83

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 4 HR x 0.5 = 2 HR

B. Measurement and Instrumentation

1. Transducer and System Characteristics

2. Operational Amplifier

STUDY MATERIALS (Electrical Measurement)

EE 404 Electrical Measurement (1 pt)

EXERCISE ASSESSMENT (30)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in electrical measurement and testing in above mentioned format & submit it to the assessor.

(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 2 HR x 0.5 = 1 HR

C. Signal Processing

1. Sampling Theory

2. Analog-to-digital (A/D) and digital-to-analog (D/A) Conversions

Process control-I006+I008+I020.zip

http://www.filefactory.com/file/c0b7d9d/n/Process_control-I006_I008_I020.zip

I006

UEENEEI006B		Solve problems in process controllers, transmitters and converters
6032A	EA904	Control concepts
7761L	EA190	Electronic signals and systems

1.Process control transducer

2.Operational amplifier

3.Pnuematic

4.Digital control

5.PLC TL31

6.Encoder+Decoder

7.Digital signal processing

8.DAC+Flipflop+Sensor

9.Analogue to Digital Conversion

10.Temperature control

11.Industrial transducer

12.Control system evaluation

13.Proportional control

14.Electronic signal system

15.Types of transducers

16.Speed measurement

Stage 4 Part 18.zip
http://www.filefactory.com/file/c0cc793/n/Stage_4_Part_18.zip

Stage 4 Part 1A.zip
http://www.filefactory.com/file/c0cc226/n/Stage_4_Part_1A.zip

ONLINE MCQ TEST

I006Test 1

http://www.filefactory.com/file/46zzpcym7uqz/n/I006_H012_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/25f59f11b4584a23b3f564fe4041fb1d#/InitializeTest.xaml

SPHHMYT

I006Test 2

http://www.filefactory.com/file/78kbc9x2alx/n/I006_H012_Online_Test_2_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/7b0f9808d98a48d79e9d77ea4e2af721#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- F44J

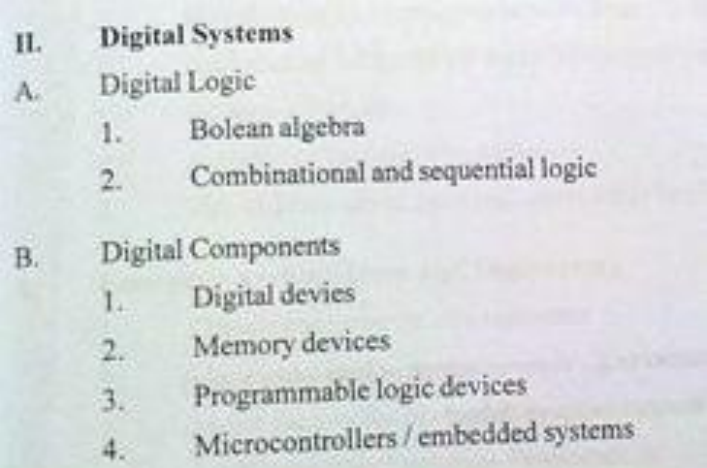
Advanced References

EE 403 Introduction to Electronic Engineering (1 pt)

EE 524 Introduction to Power Electronics (1 pt)

EE 524 Power Electronics

EE 524 Applied Electronics



II. **Digital Systems**

A. Digital Logic

1. Bolean algebra
2. Combinational and sequential logic

B. Digital Components

1. Digital devies
2. Memory devices
3. Programmable logic devices
4. Microcontrollers / embedded systems

Digital Electronics Notes

UEENEEH012B		Troubleshoot digital subsystems
UEENEEH043B		Diagnose and rectify faults in digital subsystems of electronic controls

http://kyawnaing325.zoomshare.com/files/6/DigitalElectronics.htm

http://kyawnaing325.zoomshare.com/files/6/7794CD-DigitalElectronics.htm

DE 1

Binary Number Binary_Number_Lesson.zip

D.A.C Encoder Multiplexer DAC-Encoder-Multiplexer.zip

Introduction to Digital Logic DE1-1.zip

Boolean Algebra DE1-2.zip

De Morgan Theorem DE1-3.zip

Karnaugh's Map DE1-5.zip

DE2

Timing Diagram + Operation of Discrete Equipments DE2-1_2_Notes.zip

7 Segments Display DE2-7_Segment_Display.zip

Logic Families Part 1 & Part 2 DE2_Logic_Families_Part_I_Part_II_Note_Exercise.zip

SR Flip Flop DE2-SR_Flip_Flop_Notes.zip

D J K Flip Flop DE2-D_J_K_Flip_Flop.zip

Data Transfer DE2-Data_Transfer_Note.zip

Encoder DE2-Encoder_Lesson.zip

Logic Level DE2-Logic_Level_Note_Exercise.zip

Logic Level + Totem Pole DE2-Logic_Level_TotemPole_Note_Exercise.zip

Multiplexer DE2-Multiplexer_Lesson.zip

Schmitt Trigger DE2-Schmitt_Trigger_Device_Exercise.zip

Shift Register DE2-Shift_Register.zip

ESD ESD_Review_Questions.zip

Digital Logic Simplification Digital_Logic_Simplification.zip

SR & D Latches **SRandDLatches.mht**

Simple Sequential **SimpleSequentialCircuit.mht**

Demorgan **DeMorganTheorm_0.mht**

Sequential State Diagram **SequentialCircuitStateDiagram.mht**

De Morgan Theorem **DeMorganTheorm.mht**

D & JK Flip Flop **DandJKFlipFlops_0.mht**

Basic Logic Gates **BasicLogicGates.mht**

Digital Electronics **DE.zip** **DE1.zip** **DE2Notes.zip**

Digital_logic_Simplification.zip

IC Reference

Digital_IC_Ref_1-Part_1.zip

Digital_IC_Ref_1-Part_2_0.zip

Digital_IC_Reference_2-Part_1.zip

Digital_IC_Reference_2-Part_2.zip

Digital Electronics Exercises

DE1 Exercise

DE1-1_Review_Question.zip

DE1-2Review_Questions.zip

DE1-3_Review_Question.zip

DE1-4_Review_Question.zip

ESD_Review_Questions.zip

Digital_Logic_Simplification.zip

DE2 Exercise

DE2-7_Segment_Display_Review_Q.zip

DE2_Shift_Register_Exercise.zip

DE2-Counter_Exercise.zip

DE2_SR_Flip_Flop_Q.zip

DE2-D_Flip_Flop_Q.zip

DE2-Data_Transfer_Q.zip

DE2-DecoderMultiplexer_Assignment.zip

Advanced References

BAE 408 Analogue & Digital Electronics

EE 405 Digital System (1 pt)

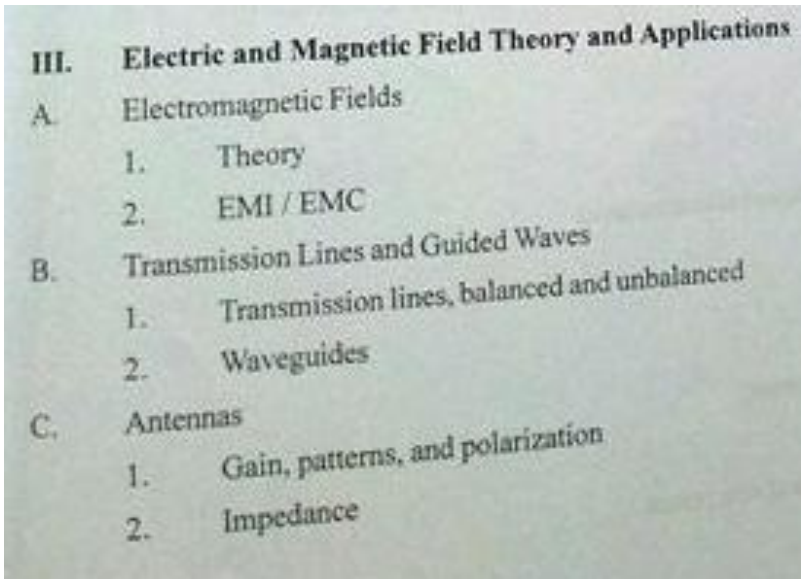
EE 405 Digital System (1 pt)

EE 526 Digital Signal Processing (1 pt)

EE 527 Digital Image Processing 1 (1 pt)

EE 527 Digital Image Processing 2

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 4 HR x 0.5 = 2 HR



III. **Electric and Magnetic Field Theory and Applications**

A. Electromagnetic Fields
   1. Theory
   2. EMI / EMC

B. Transmission Lines and Guided Waves
   1. Transmission lines, balanced and unbalanced
   2. Waveguides

C. Antennas
   1. Gain, patterns, and polarization
   2. Impedance

G042_Part_3_Notes

G037_G038_G030Pt1_7762AG_Notes

G015_G042_G037_G038_G039_Part_2_Notes

G015_G037_G038_G030Pt1_7762AG_Notes

Stage 4 Part 15.zip

http://www.filefactory.com/file/c0cc7cb/n/Stage_4_Part_15.zip

BAE 607 Radio Wave Propagation & Microwave Techniques

EE 625 Radio Wave Propagation (1 Pt)

EE 626 Microwave Technique (1pt)

ONLINE MCQ TEST

G042 Test 1

http://www.filefactory.com/file/12pcsbpgbkhx/n/G042_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/8c2511d53079456f9c5d159095ec766a#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- HPNYFFB

G042 Test 2

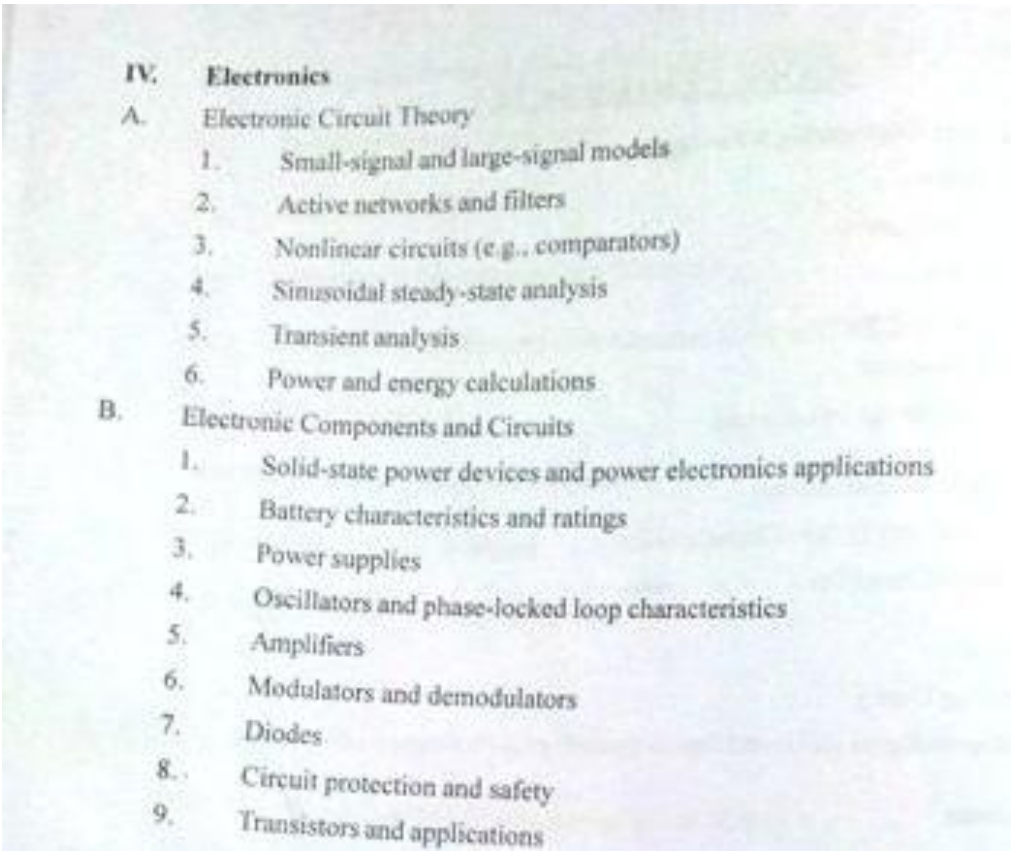
http://www.filefactory.com/file/3ol2dpyi4qm9/n/G042_Online_Test_2_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/cb5cd0dd19524431905d5519ad17ab67#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- 35KCC

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 4 HR x 0.5 = 2 HR



IV. **Electronics**

A. Electronic Circuit Theory
   1. Small-signal and large-signal models
   2. Active networks and filters
   3. Nonlinear circuits (e.g., comparators)
   4. Sinusoidal steady-state analysis
   5. Transient analysis
   6. Power and energy calculations

B. Electronic Components and Circuits
   1. Solid-state power devices and power electronics applications
   2. Battery characteristics and ratings
   3. Power supplies
   4. Oscillators and phase-locked loop characteristics
   5. Amplifiers
   6. Modulators and demodulators
   7. Diodes
   8. Circuit protection and safety
   9. Transistors and applications

H045+7761A

UEENEEH045		Develop solutions to analogue electronic problems
7761A	EA100	Analogue electronics 1

Analog1

Analog2

Assessment-Test + Assignment for flexible study students

Electronics_H045_Tutorials

H025

UEENEEH025		Provide solutions to single phase electronic power control problems
8273Z	NE064	Variable speed drives

H025_Operational_Amplifier

Assessment-Test + Assignment for flexible study students

Electronics_H025_Tutorials

H026

UEENEEH026		Provide solutions to polyphase electronic power control problems
8273Z	NE064	Variable speed drives

H026_3_Ph_Power_Control_Electronics_1

H026_3_Ph_Power_Control_Electronics_2

H026_3_Ph_Power_Control_Electronics_3

H026_3_Ph_Power_Control_Electronics_4

Assessment-Test + Assignment for flexible study students

UEENEEH026_Tutorials.doc

Stage 3 Part 2.zip

http://www.filefactory.com/file/c0ccdbc/n/Stage_3_Part_2.zip

BAE 408 Analogue & Digital Electronics

Part 2 Competency units of the subject

Advanced References

EE 403 Introduction to Electronic Engineering (1 pt)

EE 524 Introduction to Power Electronics (1 pt)

EE 524 Power Electronics

EE 524 Applied Electronics

ONLINE MCQ TEST

H011Test 2

http://www.filefactory.com/file/3e54mrgli7ft/n/H011_Online_Test_2_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/367cc44c01944cb59982be0255dca5bd#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- 65TG

H013Test 1

http://www.filefactory.com/file/4ze60r57ea9/n/H013_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/eaa8db99cb2b44c49d016f6c8eee5910#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- SN3T84

H013Test 2

http://www.filefactory.com/file/sutmaakz949/n/H013_Online_Test_2_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/957b751abb4641cf9ae0a79176936549#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- 6LYXKLE

H025Test 1

http://www.filefactory.com/file/7j320hlrk6k9/n/H025_H045_I006_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/ab5d528d1ff742f7a3d632a61c210eb0#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- 96T3TX3

H025Test 2

http://www.filefactory.com/file/20vzqp9mvm8p/n/H025_H045_I006_Online_Test_2_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/99835b7ab0c348e8a2fd0827394b60d8#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- HHH2HNC

H026Test 1

http://www.filefactory.com/file/fch86cnsrdp/n/H026_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/ee1e8307748441aeab67110c145a7d16#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- U585X6W

H045Test 1

http://www.filefactory.com/file/3vpq08cwj73/n/H045_Online_Test_1_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/bd50d0b35eb241518cdddc8e23c0b593#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- 8S359V

H045Test 2

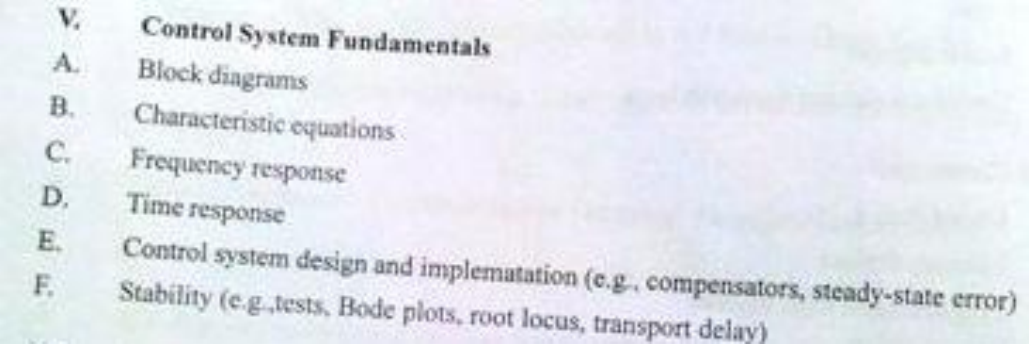
http://www.filefactory.com/file/6pxixn406w51/n/H045_Online_Test_2_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/f059c6212cc94ca098b61d5ef8188826#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- L9UMJM6

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 8 HR x 0.5 = 4HR



V. **Control System Fundamentals**

A. Block diagrams

B. Characteristic equations

C. Frequency response

D. Time response

E. Control system design and implemetation (e.g., compensators, steady-state error)

F. Stability (e.g.,tests, Bode plots, root locus, transport delay)

I006

UEENEEI006B		Solve problems in process controllers, transmitters and converters
6032A	EA904	Control concepts
7761L	EA190	Electronic signals and systems

AnalogDigitalSignalConditioning

H085_66_I006_Note_1_Sensors 1

H085_66_I006_Note_2_Sensors_2

H085_66_I006_Note_3_Sensors_3

H085_66_I006_Note_4_Control_Concept1

H085_66_I006_Note_5_Control_Concept2

H085_66_I006_Note_6_Electronics_Signal

H085_66_I006_Note_8_Process_Control_1

H085_66_I006_Note_9_Process_Control_2

PLC_Textbook1

PLC_Textbook2

PLC_Textbook3

PLC

6487E.zip

PLC References

User_Manuals.zip

TRILOGI5-purdue

SetupTL6Edu

Installation

Installation_Instruction

F_Nano-Product_Sheets

PID (Proportional Integral Derivative) Control

PID.zip

Assessment

I006_Tutorials.zip

UEENEEI001B		Install and set up transducers and sensing devices
UEENEEI002B		Solve problems in pressure measurement systems
UEENEEI004B		Solve problems in flow measurement systems

UEENEEI005B		Solve problems in temperature measurement systems

I001

H085_66_I006_Note_1_Sensors 1

H085_66_I006_Note_2_Sensors_2

H085_66_I006_Note_3_Sensors_3

I002+I004

I002I004PressureFlowPnuematicReference.zip

I005

I005TemperatureMeasurement.zip

Process Control Practicals

PLC_Application_Assignment.zip

Control_Circuit_Boards.zip

PLC_Hardware_Notes_1.zip

PLC_Hardware_Notes_2.zip

PLC_Hardware_Notes_3.zip

PLC_Hardware_Notes_4.zip

PLC_Hardware_Notes_5.zip

PLC_Hardware_Notes_6.zip

PLC_Trilogy_Advanced_Programs.zip

PLC_SCADA_Project_Example_1.zip

PLC_SCADA_Project_Example_2.zip

PLC_SCADA_Project_Example_3.zip

Process_Control_Equipment_Setup_1.zip

Process_Control_Equipment_Setup_2.zip

SCADA_PLC_Project_1.zip

SCADA_PLC_Project_2.zip

SCADA_PLC_Project_3.zip

SCADA_PLC_Project_4.zip

SCADA_PLC_Project_5.zip

MACHINE REPAIR+PROCESS CONTROL

MachineControlCkt1.zip MachineControlCkt2.zip MachineControlCkt3.zip

ProcessControlCkt1.zip ProcessControlCkt2.zip ProcessControlCkt3.zip

Stage 4 Part 1A.zip

http://www.filefactory.com/file/c0cc226/n/Stage_4_Part_1A.zip

Advanced References

BAE 503 Control System

BAE 503 Control System Part 1

Part 2 Competency units of the subject

Linear System + Control System

EE 601 Non Linear Control Applications (1 pt)

EE 601 Control Engineering (1 pt)

EE 601 Feedback and Control System

EE 601 PID_Control

EE 601 Non Linear Control

EE 624 Process Control (1 pt)

http://www.filefactory.com/file/34ha7biln93z/EE_624_Process_Control.pdf

ME 534 Numerical Control Part 1 (1 pt)

ME 534 Numerical Control Part 2

ONLINE MCQ TEST

I006Test 3

http://www.filefactory.com/file/hl6qx2ks1b1/n/I006_H012_Online_Test_3_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/ef761b3fa64a4ca783baa5dd986f24ab#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- 2J3PEH

I006Test 4

http://www.filefactory.com/file/3sbsdw1yu13h/n/I006_Online_Test_4_Question_pdf

http://www.classroomclipboard.com/503511/Home/Test/ae651477d73c4f5194abd42c8487095b#/InitializeTest.xaml

First Name-Enter your full name & Surname- Enter Myanmar Engineering Society Membership Number

Enter the code--- WKMM7

After you have done the test, the score can be printed out in PDF format The score with at least 50% or more for all tests, it will be record of 4 HR x 0.5=2HR

PART (2)

YEAR 3 & 4 (Minumum 3 to 4 years is required for a graduate to become a PE)

The practice reports need to write for each topics of the study materials included in Scope Part II.

The reports should include the followings:

- Professional topics----- You need to select the topic such as building electrical wiring or power distribution etc
- Fundamental of Engineering- What knowledge you got from the materials in your selected professional topic..
- Engineering Management--- How will you manage the l project / workforce to implement the engineering tasks by applying those knowledge in actual workplace project or simulated work place and project?.
- Rules Regulations, Standards & Specifications- You need to refer the relevant engineering rules, regulations, standards and specifications in the tasks expressed in your report.
- Safety—How will you safeguard public safety in performing the engineering tasks?
- Ethics--- How will you apply professional code of ethics in performing the engineering tasks?

The candidate should use the following format in the practice exercise reports for each topics of the Scope II that are simulated practice tasks for preparing the Professional Experience and Competency Report to be submitted to Myanmar Engineers Board for Professional Engineer (PE) Registration.

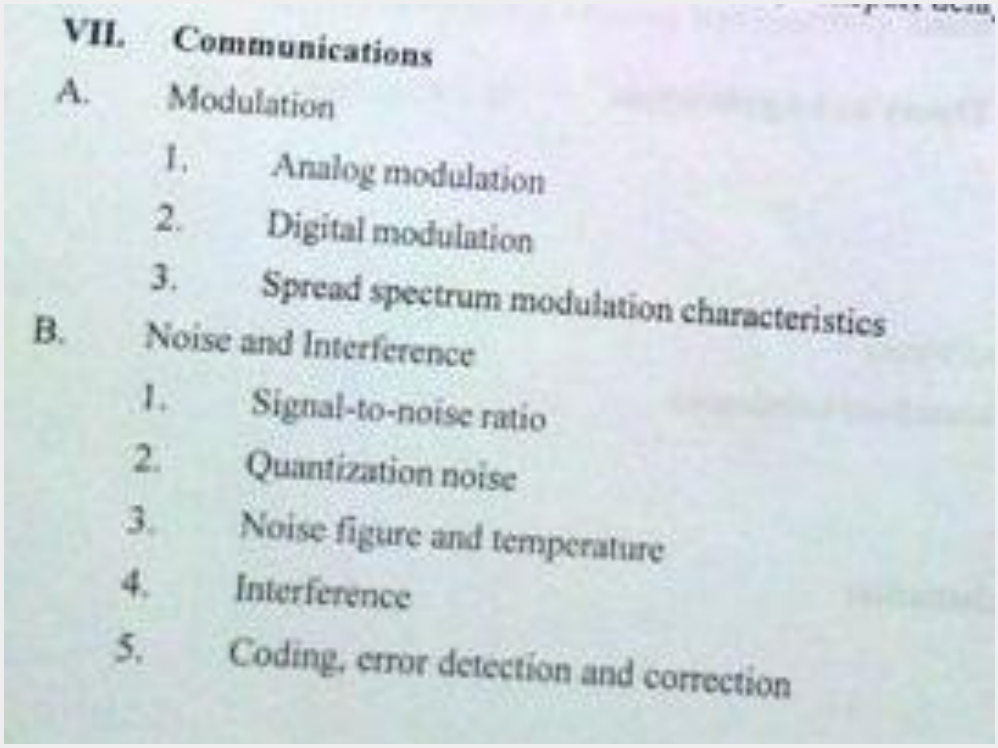
Section (1) Introduction

Section (2) Work experiences in brief and highlight the major important projects

Section 3 to 10 , the following competency should be addressed

- Apply engineering knowledge, methods and techniques
- Use of engineering technology , tools and equipments
- Safeguard public safety
- Recognition the impacts of engineering on the environment , economy and society.
- Manage engineering activities
- Communicate engineering information.

- Work collaboratively
- Main and enhance engineering skills and knowledge. (Ref-MEB PEng Reg)



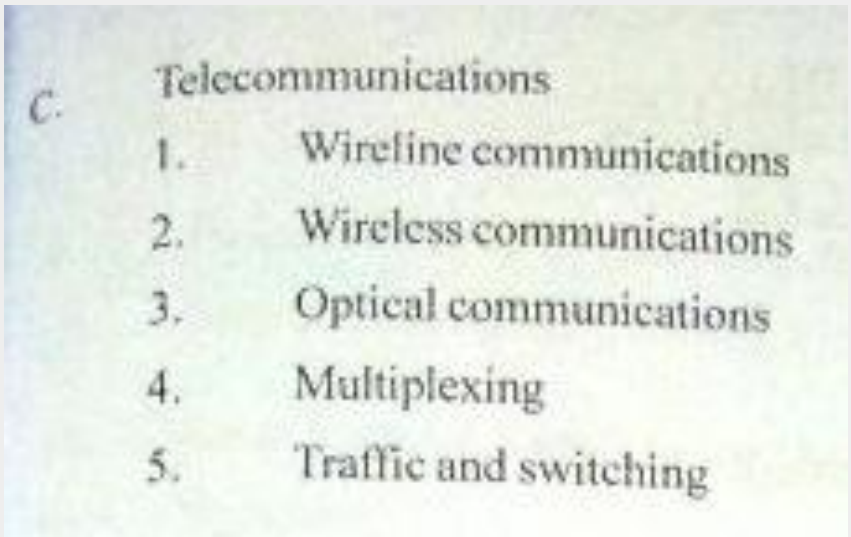
VII. Communications

A. Modulation

1. Analog modulation
2. Digital modulation
3. Spread spectrum modulation characteristics

B. Noise and Interference

1. Signal-to-noise ratio
2. Quantization noise
3. Noise figure and temperature
4. Interference
5. Coding, error detection and correction



C. Telecommunications

1. Wireline communications
2. Wireless communications
3. Optical communications
4. Multiplexing
5. Traffic and switching

H046 Telecommunication

UEENEEH046B		Solve fundamental problems in electronic communications system
7761AU	EA181	Communication fundamentals

H046TelecomNote1.zip

H046TelecomNote2.zip

H046TelecomNote3.zip

Stage 4 Part 16.zip

http://www.filefactory.com/file/c0cc703/n/Stage_4_Part_16.zip

Advanced References

BAE 604 Telecommunication Engineering

Part 2 Competency units of the subject

Electronics Communications

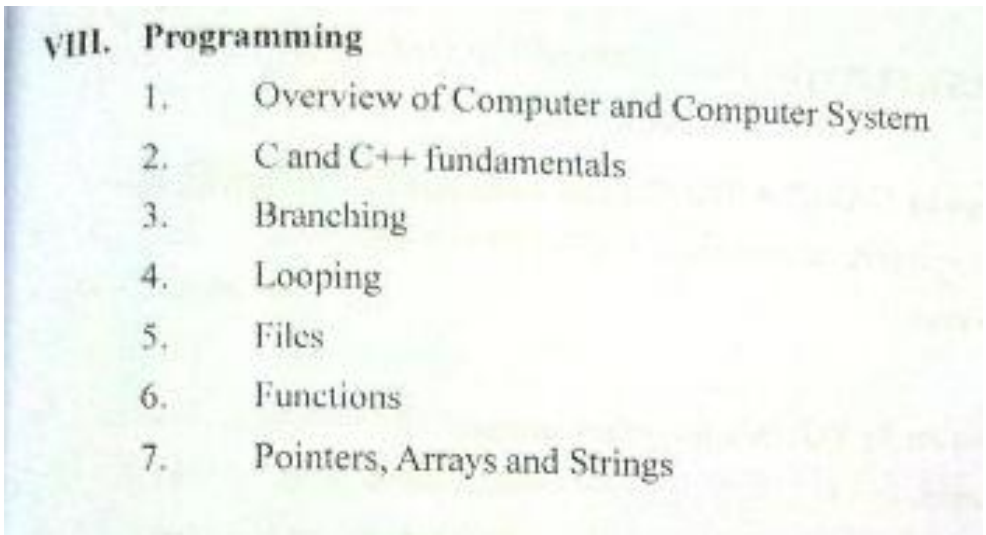
EE 525 Data Communication (1 pt)

EE 603 Electronics Telecommunication (1 pt)

Reflect your experience in the work place , write the technical report of 10 pages & submit it.

EXERCISE ASSESSMENT

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in electrical power supply in above mentioned format & submit it to the assessor.
(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)



VIII. **Programming**

1. Overview of Computer and Computer System
2. C and C++ fundamentals
3. Branching
4. Looping
5. Files
6. Functions
7. Pointers, Arrays and Strings

BAE 601 Computer Programming

C++ Programming Part 1

C++ Programming Part 2

C++ Programming Part 3

C++ Programming Part 4

C++ Programming Part 5

C++ Programming Part 6

C # Programming

C # Programming

C++ & Java Programming Course

Speed_C_Programming.zip

Turbo_C.zip

C_Programming_1.zip

C_Programming_2.zip

C_Programming_3.zip

C_Programming_4.zip

C_Programming_5.zip

C_Programming_6.zip

C_Programming_7.zip

C_Programming_8.zip

Part 2 Competency units of the subject

IT + Programming 1

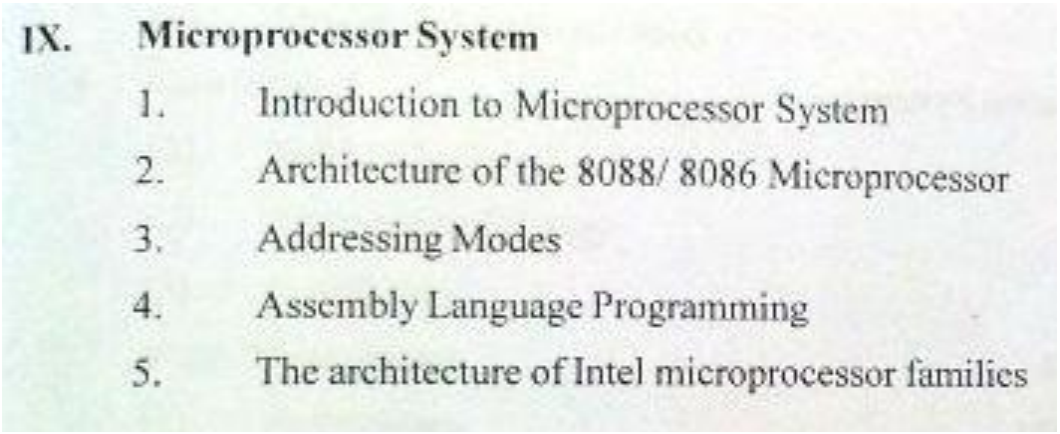
IT 401 Object Oriented Programming (1 pt)

IT 402 Structured Programming (1 pt)

IT 403 Visual Basic Programming (1 pt)

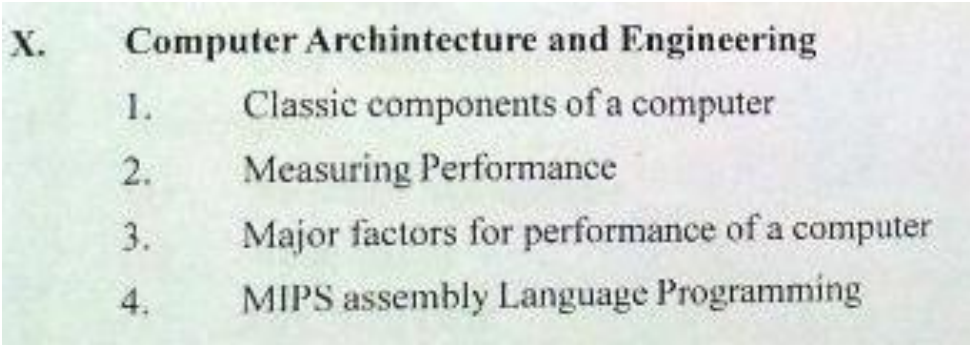
EXERCISE ASSESSMENT (20)

Based on the study you got from the above resources, write a professional experiences and competency report for engineering tasks in electrical power supply in above mentioned format & submit it to the assessor.
(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)



IX. Microprocessor System

1. Introduction to Microprocessor System
2. Architecture of the 8088/ 8086 Microprocessor
3. Addressing Modes
4. Assembly Language Programming
5. The architecture of Intel microprocessor families



X. Computer Archintecture and Engineering

1. Classic components of a computer
2. Measuring Performance
3. Major factors for performance of a computer
4. MIPS assembly Language Programming

Computer Programming

UEENEED027B	Develop structured programs for control sub systems to access external devices

UEENEED009B	Develop, enter and verify programs for industrial control systems using high level instruction

Microprocessor_Notes_upload.zip

Microprocessor_Textbook_to_upload.zip

Microprocessor_References_to_upload.zip

Speed_C_Programming.zip

Turbo_C.zip

C_Programming_1.zip

C_Programming_2.zip

C_Programming_3.zip

C_Programming_4.zip

C_Programming_5.zip

C_Programming_6.zip

C_Programming_7.zip

C_Programming_8.zip

MP LAB

33014K.pdf

DS-51317H.pdf

DS-51761B.pdf

MPLAB_Integrated_Development_Environment.doc

MPLAB_IDE_8_50_Release_Notes.zip

MPLAB_User_Guide_51519c.pdf

Stage 4 Part 5A.zip

http://www.filefactory.com/file/c0cc4a1/n/Stage_4_Part_5A.zip

Stage 4 Part 5B.zip

http://www.filefactory.com/file/c0c3a6e/n/Stage_4_Part_5B.zip

EXERCISE ASSESSMENT

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(Weighted informal learning time for CPD including study & report= 20Hr x 0.5= 10Hr)

STUDY MATERIALS (Electrical Engineering Code and Standard)

Myanmar Electrical Regulations

IEE2002

Electrical Building Services IEE based

Domestic Electric Wiring BS7671_2008

IEEE colored books

Handbook of Electrical Design Details

American Electricians' Handbook, 15th Edition

Electrical Eng Portable handbook NEC (2)

Newnes Electrical Power Engineer Handbook

Newnes_Electrical_Engineers_Handbook

Energy_Management_Handbook_6E

Handbook of Electrical Installation Practice UK

Power Fault Calculation & Protection Cable Selection_Note

Power Data Planning India

Myanmar Professional Engineers Register
(The Institution of Professional Engineers-Myanmar)

www.highlightcomputer.com/mper.htm

Myanmar Engineering Council Law Changing Campaign

www.highlightcomputer.com/mengclaw.htm

PROFESSIONAL ENGINEER SUPPORT WEBSITE OF IQY TECHNICAL COLLEGE OF HIGHLIGHT COMPUTER GROUP

(if the direct download link is unavailable, the resources can be found & downloaded from the download centre)

www.highlightcomputer.com/pesupport.htm

www.highlightcomputer.com

A Professional Engineer needs wide knowledge of theory and practical applications of engineering. The knowledge is not limited to a particular course.

This Professional Engineer Support Website includes Engineering Job Competencies, Technician+ Technologist Level, Theoretical Knowledge requirement for Professional Engineer, Undergraduate Level Theoretical Knowledge requirement for Professional Engineer, Post graduate Level Theoretical Knowledge requirement for Professional Engineer, Practical Knowledge requirement for Professional Engineer ,Professional Engineer Postgraduate Competency Development (Electrical & Civil),Knowledge refreshing by watching lesson videos, Youtube Engineering Lessons ,MP4 Engineering Lessons ,Engineering Rules/Regulation/Safety Knowledge(Electrical Safety, Construction site safety & OHS, Explosion Protection & safety etc are included & the reference materials are referred from relevant Australian Industrial Safety Authorities), Engineering Competency Demonstration Report and Information on Professional Engineer Registration around the world. .

The purpose is to provide the one stop shop for theengineers who seek PE/RSE registration in Myanmar as well as ASEAN , UK, USA, Australia etc to get the information as well as refreshing the theoretical studies and practical knowledge.

Engineering Job Competencies

IQY Technical College Professional Engineer/Management Professional & Information Technology Professional Skills Training

Engineers Australia Professional Engineer, Engineering Technologists & Engineering Associate Competencies References

Part 1-ENGINEERING FUNDAMENTAL

Technician+ Technologist Level Theoretical Knowledge requirement for Professional Engineer

Undergraduate Level Theoretical Knowledge requirement for Professional Engineer (Part 1-Online Lessons)

Undergraduate Level Theoretical Knowledge requirement for Professional Engineer (Part 2-Reference Resources)

Post graduate Level Theoretical Knowledge requirement for Professional Engineer

Practical Knowledge requirement for Professional Engineer

Practical Knowledge requirement for Professional Engineer

Part 2-PROFESSIONAL ENGINEER COMPETENCY DEVELOPMENT

Electrical Electronics Civil

The resources+ handbooks can only be provided in DVD disks

Refresh your knowledge by watching lesson videos

Youtube Engineering Lessons by Program Leader Engineering- **MIEAust, RPEQ,FSIET**

MP4 Engineering Lessons by Program Leader Engineering- **MIEAust, RPEQ, FSIET**

Youtube Engineering Lessons (Advanced Diploma of Electrical Engineering/Technology courses in Australia) by Program Leader Engineering- **MIEAust, RPEQ, FSIET**

Part 3-ENGINEERING RULES/REGULATION/SAFETY

Engineering Rules/Regulation/Safety Knowledge

Engineering Competency Demonstration Report

Competency Elements of Stage 1 Professional Engineer (Australia)

Electro-technology Competency Development

Electro-technology Competency Development (Electronics)

Part 4-PROFESSIONAL ENGINEER REGISTRATION

Professional Engineer Registration around the world

Undergraduate Level Theoretical Knowledge requirement for Professional Engineer

Part 5-PROFESSIONAL ENGINEER RESOURCES DOWNLOAD CENTRE

Overall

www.highlightcomputer.com/downloadcentre.htm

Electrical+ Building Services

www.highlightcomputer.com/PEEE.htm

Electronics

www.highlightcomputer.com/PEEC.htm

Civil

www.highlightcomputer.com/PECivilCombined.htm

Bachelor of Engineering (Civil)

http://www.highlightcomputer.com/CivilDegreeInstruction.pdf

http://www.highlightcomputer.com/CivilDegreeInstruction1.pdf

Video

Click Common Engineering Degree Video

Click BE Civil Instruction Video

Bachelor of Engineering (Electrical)

http://www.highlightcomputer.com/ElectricalDegreeInstruction.pdf

http://www.highlightcomputer.com/ElectricalDegreeInstruction1.pdf

Video

Click Common Engineering Degree Video

Click BE (Electrical) Instruction Video

Bachelor of Engineering (Mechanical)

http://www.highlightcomputer.com/MechanicalDegreeInstruction.pdf

http://www.highlightcomputer.com/MechanicalDegreeInstruction1.pdf

Video

Click Common Engineering Degree Video

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Technician+ Technologist Level Theoretical Knowledge requirement for Professional Engineer

Certificate/Diploma/Advanced Diploma (Civil Engineering)

http://www.highlightcomputer.com/CivilDiplomaInstruction.pdf

Video

Click Civil Engineering Diploma Instruction Video

Certificate/Diploma/Advanced Diploma (Electrical Engineering)

http://www.highlightcomputer.com/ElectricalDiplomaInstruction.pdf

Video

Click Electrical Engineering Diploma Instruction Video

Certificate/Diploma/Advanced Diploma (Mechanical Engineering)

http://www.highlightcomputer.com/MechanicalDiplomaInstruction.pdf

Video

Click Mechanical Engineering Diploma Instruction Video

Post graduate Level Theoretical +Practical+ Management Knowledge requirement for Professional Engineer

Graduate Diploma & Master of Engineering Practice (Electrical/Civil/ Mechanical) for Graduate Engineers

(72115/73315/72515/72315/72415/82115/82215/82315/82415/)

http://www.highlightcomputer.com/GraduateDiplomaEngineeringPracticeOutline.pdf

GRADUATE ENGINEER TRAINING PROGRAM

www.mongroupsydney1.com/GraduateCapstone.pdf

www.mongroupsydney1.com/AdditionalCapstoneTextBooks.pdf

PROFESSIONAL ENGINEER REGULATIONS

www.mongroupsydney1.com/PEngReg.pdf

PROPOSED PE ROUTE

www.mongroupsydney1.com/PERSEProposalBasedonAccreditationModel.pdf

PROPOSED PE ROUTE EXPLANATION

www.mongroupsydney1.com/PERSEFlowDiagramExplanation.pdf

PROPOSED PE REGISTRATION PROCESS

www.mongroupsydney1.com/MyanmarEngineerRegistrationRulesProvision.pdf

REVIEW OF ENGINEER LAW

www.mongroupsydney1.com/MEngCLawsPossibleWaystoimplementMod.pdf

MYANMAR VERSION

www.mongroupsydney1.com/MEngCLawAnalysisMyanmarVersionTyped.pdf

www.mongroupsydney1.com/RegistraionSuggestionDrKyawNaing.pdf

Engineering Rules/Regulation/Safety Knowledge

Explosion Protection

PROTECTION UNITS

Click HERE to access the references for explosion protection

Electrical Safety

Electrician Licensing Requirements.zip
Stage 1 Part 3.zip
http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip

SubstationEntry.zip
Stage 1 Part 5.zip
http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip

Construction ElectricalSafety.zip
Stage 1 Part 1.zip
http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip

InserviceTesting.zip
Stage 1 Part 4.zip
http://www.filefactory.com/file/c0cc1cd/n/Stage_1_Part_4.zip

NREL_Disconnect_Reconnect.zip
Stage 1 Part 5.zip
http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip

Electrical_safe_working.zip
Stage 1 Part 3.zip
http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip

Occupational Health & Safety

OHSWorkbook.zip
Stage 1 Part 5.zip
http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip

Electrical Risk Assessment

Project Risk Management References

Report Writing

Post graduate Level Theoretical Knowledge requirement for Professional Engineer

IOY Masters Degree (M Mat+ ME (EE,CE,ME)+M App Sc (IT)+MSc (RE)+ Associate Degree in RE+ BE (Civil+ Mechanical) Courses Learning Support Website

Graduate Diploma of Engineering Practice (Mechanical) Course Outline

Course Notes
http://www.filefactory.com/file/21fkobz76fvj/Graduate_Diploma%20in%20Mechanical%20Engineering%20Course%20Work.pdf

Graduate Diploma of Engineering Practice (Civil) Course Outline

Course Notes
http://www.filefactory.com/file/21ifsjw6w873/Graduate_Diploma%20in%20Civil%20Engineering%20Course%20Work.pdf

Graduate Diploma of Engineering (Electrical+Electronics) Course Outline

Course Notes
http://www.filefactory.com/file/70g9yl2t4ogt/Graduate_Diploma%20in%20Electrical%20Engineering%20Course%20Work.pdf

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Professional Engineer Registration around the world

Undergraduate Level Theoretical Knowledge requirement for Professional Engineer

Part 5-PROFESSIONAL ENGINEER RESOURCES DOWNLOAD CENTRE

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http://www.highlightcomputer.com/ElectricalDegreeInstruction1.pdf

Video

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Click BE (Electrical) Instruction Video

Bachelor of Engineering (Mechanical)

http://www.highlightcomputer.com/MechanicalDegreeInstruction.pdf

http://www.highlightcomputer.com/MechanicalDegreeInstruction1.pdf

Video

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Click BE (Mechanical) Instruction Video

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Certificate/Diploma/Advanced Diploma (Civil Engineering)

http://www.highlightcomputer.com/CivilDiplomaInstruction.pdf

Video

Click Civil Engineering Diploma Instruction Video

Certificate/Diploma/Advanced Diploma (Electrical Engineering)

http://www.highlightcomputer.com/ElectricalDiplomaInstruction.pdf

Video

Click Electrical Engineering Diploma Instruction Video

Certificate/Diploma/Advanced Diploma (Mechanical Engineering)

http://www.highlightcomputer.com/MechanicalDiplomaInstruction.pdf

Video

Click Mechanical Engineering Diploma Instruction Video

Post graduate Level Theoretical Knowledge requirement for Professional Engineer

IOY Masters Degree (M Mgt+ ME (EE,CE,ME)+M App Sc (IT)+MSc (RE)+ Associate Degree in RE+ BE (Civil+ Mechanical) Courses Learning Support Website

Graduate Diploma of Engineering Practice (Mechanical) Course Outline

Course Notes
http://www.filefactory.com/file/21fkobz76fvj/Graduate_Diploma%20in%20Mechanical%20Engineering%20Course%20Work.pdf

Graduate Diploma of Engineering Practice (Civil) Course Outline

Course Notes
http://www.filefactory.com/file/21ifsjw6w873/Graduate_Diploma%20in%20Civil%20Engineering%20Course%20Work.pdf

Graduate Diploma of Engineering (Electrical+Electronics) Course Outline

Course Notes
http://www.filefactory.com/file/70g9yl2t4ogt/Graduate_Diploma%20in%20Electrical%20Engineering%20Course%20Work.pdf

Engineering Rules/Regulation/Safety Knowledge

Explosion Protection

Click HERE to access the references for explosion protection

Electrical Safety

Electrician Licensing Requirements.zip
Stage 1 Part 3.zip
http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip

SubstationEntry.zip
Stage 1 Part 5.zip
http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip

Construction ElectricalSafety.zip
Stage 1 Part 1.zip
http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip

InserviceTesting.zip
Stage 1 Part 4.zip
http://www.filefactory.com/file/c0cc1cd/n/Stage_1_Part_4.zip

NREL_Disconnect_Reconnect.zip
Stage 1 Part 5.zip
http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip

Electrical_safe_working.zip
Stage 1 Part 3.zip
http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip

Occupational Health & Safety

OHSWorkbook.zip
Stage 1 Part 5.zip
http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip

RiskManagement.pdf
Stage 4 Part 20.zip
http://www.filefactory.com/file/c0cc9b4/n/Stage_4_Part_20.zip

Electrical Risk Assessment

Project Risk Management References

Civil/Mechanical/Electrical Engineering Practical Courses for AGTI/BTech/BE students of Government Technical Colleges & Technological Universities

If you find the question in Myanmar language, the lessons in Myanmar language for that question is also provided.

PC 1-Certificate in Bricklaying & Masonry

PC 2-Certificate in Plumbing

PC 3-Certificate in Building Construction

PC 4-Certificate in Gutter Construction

PC 5-Certificate in Fitting & Machining

PC 6-Certificate in Welding

PC 7-Certificate in Engine Operation & Basic Servicing

PC 8-Certificate in Air-conditioning & Refrigeration Basic Servicing

PC 9-Certificate in Electrical Wiring

PC 10-Certificate in Electrical Machine Winding

PC 11-Certificate in Electrical Power Wiring & Switch Gear Installation

(PC15/H102) Certificate in Basic Electronics & Telecommunication

PC16 Certificate in Rigging & Scaffolding

PC Practical Course (Level 2 for Engineering Technicians)

PC 12-Certificate in Surveying. Quantity Surveying & Estimating

PC 13-Certificate in Manufacturing Process Control & CNC

PC 14-Certificate in Building Energy Efficiency

Preparation for Myanmar Engineering Council Accreditation Course

Course Outline

This two weeks course is designed as Technical Teacher Education Professional Development course for teachers working at Government Technical Colleges and Technological Universities to design the curriculums and teaching resources to meet the accreditation requirements of Myanmar Engineering Council.

Aim of the course

To provide the training to the technical education teachers to understand and apply the principles of adult & vocational education outcome based education, competency based training. compliance with Qualification & Training Authority-Myanmar Engineering Council's Rules, Regulations and Standards for accreditation by taking part in intensive workshop focussing on curriculum development and assessment documents portfolio preparations for Myanmar Engineering Council Accreditation

Outcome of the course

After completion of this course, the participant will be able to

- Understand Myanmar Engineering Council Accreditation Rules & Regulations related to accreditation of Government Technical Colleges & Technological Universities in Myanmar.
- Understand and utilize the principle & features of Outcome based education.
- Understand the Adult & Vocational Education, Work based Learning and Competency based training & assessments tasks.
- Acquire the knowledge on Competency based education and training and training packages being used in industrialized countries (Examples of Australian Standard Competency based vocational education & training system.

- Get the information & knowledge on Current issues related to international & Myanmar Engineering profession.
- Participate in hand on practice workshop focussing on curriculum development & collecting and preparing the materials for accreditation by Myanmar Engineering Council Engineering Accreditation Committee & taking part in mock accreditation sessions.
- Explore the Adult & Vocational Educational Literatures, Textbooks, References & Resources, e-Learning, Learning Technology & Technology in classroom resources knowledge sharing.
- Certificate of Training will be issued by Myanmar Engineering Council as well as by the trainer's educational institution.

Target Group

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- Course leaders who are responsible for development of teaching curriculums and learning resources for teaching of engineering programs.

Arrangement of attendances

- It will be an official course development and accreditation workshop in accordance with Myanmar Engineering Councils' Rules , Regulations and Accreditation system, the attendance of this course is part of the official duty and appropriate duty release arrangement may be required under the procedures of the Ministry of Science & Technology.

Place of the course

- Appropriate training venue arranged by Myanmar Engineering Council or Myanmar Engineering Society.

Course Duration

12 days (Mondays to Saturdays) (December 2015)(The exact date will be provided)

Requirements

The participants will need to bring the documents related to teaching plan, curriculum, course materials or reference notes that they are using in teaching
Access to laptop/computer will be required for the participants. Teaching aids such as white board , computer & Overhead Projector will be required to show the slides. It will be better to access Internet.

Sessions , Trainers and Facilitators

	Session 1 **9 to 10:30AM**	**Tea break**	**Session 2** **11 to 12:30 Noon**
5	Welcome speech by • Chairman of Myanmar Engineering Council • President of Myanmar Engineering Society • Chairman of Engineering Accreditation Committee Introduction to trainers & facilitators Outline of the program Participants ' self introduction General information and arrangement (detailed time schedule needs to be arranged)	Morning tea and networking	Overview of Myanmar Engineering By -Trainer from Myanmar Engine **Delivery mode-Lecture**

5	**Outcome Based Education** By Myanmar Engineering Council or Myanmar Engineering Society **Delivery mode-Lecture**	Morning tea and networking	**Competency based education reach the desired outcome** By Dr Kyaw Naing References *Characteristics of Learning Outcomes* **Delivery mode-Lecture 30 min** VIDEO Day 2 Session 2(1)-Competency http://youtu.be/k0OtStQk7NA Day 2 Session 2(2)-Outcome ba http://youtu.be/sqBmP7N1Kms Day 2 Session 2(3)-Assessment http://youtu.be/GvJac8yy-4s Day 2 Session 2(4)-BE course cc http://youtu.be/TLAsivfd69o Day 2 Session 2(5)-BE Curriculu http://youtu.be/C02IhMzcO8k Day 2 Session 2(6)- Day 2 Sessi http://youtu.be/jUggt-eG6N4 **AUDIO** http://yourlisten.com/Kyaw.Naing/day-2-session- In Certificate I to Vocational Diplor http://www.filefactory.com/file/32h Page 36 to 41 Provide the level of performances Sample Curriculums Certificate to Advanced Diploma http://www.highlightcomputer.con Bachelor degrees equivalent level http://highlightcomputer.com/B%2
5	9.2.3 Learning Outcomes **Requirement of Myanmar Engineering Council** **& how to design the curriculum to address the learning outcomes** By Dr Kyaw Naing **Delivery mode-Lecture** **VIDEO** Day 3 Session 1(1) Motivation of adult learning http://youtu.be/fX1E8GBKJKo Day 3 Session 2(2) Course evaluation http://youtu.be/plfr_KaAHDQ Day 3 Session 1(3)-Experimental Learning http://youtu.be/NxfczPA1J1I Day 3 Session 1(4)-Relating Learning Outcomes to Program Objectives http://youtu.be/cCkgLOkKaKY **AUDIO** http://yourlisten.com/Kyaw.Naing/day-3-session-1 Educational Theoretical Readings ED 104 Lesson Planning http://www.filefactory.com/file/4m30ym0ez37r/ED%20104%20Lesson%20Planning.zip ED 202 Curriculum & Design http://www.filefactory.com/file/1jotv5d428j1/ED%20202%20Curriculum%20%26amp%3B%20Design.Zip Practical Example www.highlightcomputer.com/OverallProgramGeneral.pdf Page 13 to 21	Morning tea and networking	**Engineering Fundamental** **Current Engineering Fundame** By Myanmar Engineering Society **Delivery mode-Lecture** Engineering Fundamental Assessn By Myanmar Engineering Society **Engineering Fundamental Ass** By Dr Sam Man Keong President of Singapore Institute of **Delivery mode-Lecture**

5	9.2.4 Academic Curriculum **Discuss the programme structure and course contents(MEng C)** **Discuss the programme delivery and assessment methods** By Myanmar Engineering Council **Delivery mode-Lecture**	Morning tea and networking	**General Knowledge related to** By Dr Kyaw Naing **Vocational Education Teacher Education** **VIDEO** **http://youtu.be/qI9IYGPWaZM** **Delivery mode-Lecture** **45 min** **AUDIO** http://yourlisten.com/Kyaw.Nain http://www.filefactory.com/file/4yb11lp1x9 **Sample Training Packages** Electrotechnology/ Electronics/ /Communication **UEE11_R1.5.docm (13.37MB)** http://www.filefactory.com/file/1n283tjamw2p Electricity Supply **UET12_R2.1.docm (7.86MB)** http://www.filefactory.com/file/56saqflqmh41/ Electrical Power Generation **UEP12_R2.1.docm (7.79MB)** http://www.filefactory.com/file/52pe03hs2xq1 Automotive **AUR12_R2.1.docm (13.37MB)** http://www.filefactory.com/file/4qtgr5i39dzl/n/ Manufacturing & Engineering (Mec **MEM05_R11.1.docm (9.8MB)** http://www.filefactory.com/file/29evfecw9yk9/ Marine **MAR_R2.0.docm (1.78MB)** http://www.filefactory.com/file/6sodu2z259j3/ Textile **LMT07_R4.1.docm (8.28MB)** http://www.filefactory.com/file/6gea7ztqqsq3/ Construction **CPC08_R9.0.docm (9.59MB)** http://www.filefactory.com/file/3j1y315nbze7/ Information Technology **ICA11_R2.0.docm (5.27MB)** http://www.filefactory.com/file/4e3ioubld73n/r Chemical **PMA02_2.pdf (1.92MB)** http://www.filefactory.com/file/2t53b3xj0slr/n/ **PMA02_1.pdf (1.65MB)** http://www.filefactory.com/file/33ikm94dl8jb/r Manufacturing **MSA07_R8.4.docm (4.93MB)** http://www.filefactory.com/file/4tcjlsetp0rd/n/M **TAE10_R3.4.docm (1.87MB)** http://www.filefactory.com/file/566jfcevasu5/r Gas **UEG11_R2.0.docm (5.44MB)** http://www.filefactory.com/file/6shho87gm1nl Mining **MNM05_3.pdf (2.28MB)** http://www.filefactory.com/file/78fk485ew98v **MNM05_2.pdf (2.29MB)** http://www.filefactory.com/file/72yjazer7njj/n/ **MNM05_1.pdf (1.77MB)** http://www.filefactory.com/file/6ahwwdwosk8

Approach to various learning modes in VET

By- Dr Kyaw Naing & the speakers from various technological universities

5 **Delivery mode-Lecture 43 min**

VIDEO

http://youtu.be/NVgAAT7Muv0

AUDIO

http://yourlisten.com/Kyaw.Naing/day-5-session-1b

Topics & References

Practical focus

Group Base learning.pdf (3.25MB)
http://www.filefactory.com/file/266najoy91o3/n/16.taadel401a_Plan_&_Organize_Group_Base_learning.pdf

Facilitate Group based learning.pdf (2.81MB)
http://www.filefactory.com/file/1tvk73q17j43/n/18.taadel402a_Facilitate_Group_based_learning.pdf

Work based learning.pdf (4.15MB)
http://www.filefactory.com/file/24apg5s5n0fx/n/22.taadel404a_Facilitate_work_based_learning.pdf

individual learning.pdf (1.94MB)
http://www.filefactory.com/file/4nmwy8ldewh1/n/20.taadel403a_Facilitate_individual_learning.pdf

Distance based learning (2.56MB)
http://www.filefactory.com/file/3w2b2mdycbx1/n/24.taadel405a_Coordinate_7_facilitate_distance_based_learnin.pdf

Educational Theory Resources
ED 103 Teaching Practice

http://www.filefactory.com/file/1o732n0j46mf/ED%20103%20Teaching%20Practice.zip

ED 105 Principle of Learning

http://www.filefactory.com/file/7660l6kjr8sx/ED%20105%20Principle%20of%20Learning.zip

ED 107 Teaching & Learning

http://www.filefactory.com/file/6u5o455lyqj7/ED%20107%20Teaching%20%26amp%3B%20Learning.zip

Myanmar Engineering Council References

- the choice of the teaching-learning (delivery) methods.
- A balanced curriculum
- The curriculum shall integrate theory with practice through adequate exposure to laboratory work and professional engineering(MEng C)
- Time allocation
- Credit points

ED 401 Adult Learning Technology

http://www.filefactory.com/file/68y4bd94ianb/ED%20401%20Adult%20Learning%20Technology.zip

Morning tea and networking

Preparing vocational teaching
By Dr Kyaw Naing
Delivery mode-Lecture 48 min
References
Worksheets
VIDEO
http://youtu.be/cc-xLKjz3J8

AUDIO
http://yourlisten.com/Kyaw.Nain

Provide Training through instr
TAADEL301A.doc (0.03MB)
http://www.filefactory.com/file/2ppyhdlqhlsh/r

Facilitate work-based learning
TAADEL404A.doc (0.03MB)
http://www.filefactory.com/file/60ojucglvyu3/n
Group based delivery
TAADEL401A.doc (0.03MB)
http://www.filefactory.com/file/3i5scp12gkdn/
Use Training Packages to mee
TAADES401A.doc (0.03MB)
http://www.filefactory.com/file/32bofyyl82wf/n

Design and develop learning p
TAADES402A.doc (0.03MB)
http://www.filefactory.com/file/4nhro84kl2nx/r

Work effectively in vocational
TAAENV401A.doc (0.03MB)
http://www.filefactory.com/file/45zeif6cy5zx/n

Foster and promote an inclusi
TAAENV402A.doc (0.03MB)
http://www.filefactory.com/file/3zoufgaty89n/r

Ensure a safe and healthy lear
TAAENV403A.doc (0.03MB)
http://www.filefactory.com/file/6ireaw7s5jg9/r

Individual learning
TAADEL403A.doc (0.03MB)
http://www.filefactory.com/file/7g3h9iwpodfr/r
Language Literacy & Numeracy

1397606218-taelln411_sample.pdf (0.34ME
http://www.filefactory.com/file/5fh2bd8z3k0r/

Report.pdf (0.41MB)
http://www.filefactory.com/file/655u3qypqyj3/

Section 4 Model for core skills analysis.p
http://www.filefactory.com/file/6p480mpcelft/

ACSF_Document.pdf (1.03MB)
http://www.filefactory.com/file/54s5xbe3esdn

LLN Preparation of students.docx (0.02ME
http://www.filefactory.com/file/77ps5dxgbhpj/

Australian Core Skills Framework for LLN
http://www.filefactory.com/file/4qt7gx24cd9l/r

LLN Preparation of students.docx (0.02ME
http://www.filefactory.com/file/1rvd487gxw0j/

Assessment Validation Guide of Myanmar Engineering Council

- assessment & evaluation methods for the attainment achievement of the Learning Outcome

5 **Developing the assessment strategies in VET**

VIDEO
http://youtu.be/qwNZHPBn6DQ

By Dr Kyaw Naing
Delivery mode-Lecture 60 min
AUDIO
http://yourlisten.com/Kyaw.Naing/day-6-session-1

Practical Application Resources

Participate in assessment validation

TAAASS404A.doc (0.03MB)
http://www.filefactory.com/file/5zv1ke0eh2dj/n/TAAASS404A.doc

Develop assessment tools

TAAASS403A.doc (0.03MB)
http://www.filefactory.com/file/5rxw2iqqk7rx/n/TAAASS403A.doc

Plan and organise assessment

TAAASS401A.doc (0.03MB)
http://www.filefactory.com/file/1tpnwpwxgxgv/n/TAAASS401A.doc

Assess competence

TAAASS402A.doc (0.03MB)
http://www.filefactory.com/file/48yye4zmmxt7/n/TAAASS402A.doc

Reference Textbooks (Theory aspect)
ED 205 Teaching & Measuring

http://www.filefactory.com/file/4eu01ck2awl/ED%20205%20Teaching%20%26amp%3B%20Measuring.zip ED 206
Designing Instructions & Assessment
http://www.filefactory.com/file/4dnh3r8wsd9t/ED%20206%20Designing%20Instructions%20%26amp%3B%20Assessment.zip

ED 405 Training Principle

http://www.filefactory.com/file/5qupttpxznin/ED%20405%20Training%20Principle.zip

Morning tea and networking

Examination & Assessment Str

By the educators from various tec

5	**Educational Resources Development in line with Myanmar Engineering Council Requirements** 9.2.7 Facilities By- Myanmar Engineering Council Engineering Accreditation Committee **Delivery mode-Lecture** **Overviews of Professional Development Programs provided by Myanmar Engineering Society** By- Myanmar Engineering Society **Delivery mode-Lecture**	Morning tea and networking	**Integration of Learning Techno** By Dr Kyaw Naing **Delivery mode-Lecture** **VIDEO** http://youtu.be/bV_CJdY7fs0 **AUDIO** http://yourlisten.com/Kyaw.Nain **Resources** http://www.filefactory.com/file/3bsfz0el http://www.filefactory.com/file/cvavvr9 Due to the big file size, the resour
5	**Technology in Classroom** By Dr Kyaw Naing **Delivery mode-Lecture 1 Hr** **VIDEO** http://youtu.be/rzLQq6D6-OU **AUDIO** http://yourlisten.com/Kyaw.Naing/day-8-session-1a Resources ED312 Technology in Classrooms http://www.filefactory.com/file/7jcivu232opx/n/7_Technology_in_classroom_zip ED 308 Computer Supported Learning & Distance Educationhttp://www.filefactory.com/file/4mdzrx52kl45/ED%20308%20Computer%20Supported%20Learning%20%26amp%3B%20Distance%20Education.zip		**Integration of Learning Techno** **Delivery mode-Lecture+ Tutor** **VIDEO** http://youtu.be/Katbr81IPnk **AUDIO** http://yourlisten.com/Kyaw.Nain By Dr Kyaw Naing Sharing the e-Learning work expe • Resources development • Computer assisted test • Use of online test/online surv • Online simulated practicals www.easytestmaker.com http://www.emailmeform.com/
5	8.5.2 Programme Quality Management and Planning 8.5.4 Quality Assurance 9.2.8 Quality Management System Preparation of self accreditation report Requirements of Myanmar Engineering Council By -Myanmar Engineering Council **Delivery mode-Lecture** **References** Curriculum design for accreditation compliance http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf Overall accreditation and compliance practice http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf Preparation for self accreditation report http://www.filefactory.com/file/43x0yutpx31v/2%20SAR.pptx Engineering Accreditation Plan http://www.filefactory.com/file/2ynzo3fydckb/2015%20YTU%20First%20Workshop.pptx	Morning tea and networking	**Preparing the documents to c** **Delivery mode-Lecture 25 min** **VIDEO** http://youtu.be/vKGOb9ZBKAU **AUDIO** **http://yourlisten.com/Kyaw.** By Dr Kyaw Naing Sample www.highlightcomputer.com/asse Quality Assurance http://www.highlightcomputer.con
5	**Learning Environment** By- Dr Kyaw Naing **Delivery mode-Lecture 48min** **VIDEO** http://youtu.be/3Lzk27pAQBk **AUDIO** http://yourlisten.com/Kyaw.Naing/day-10-session-1 **Reference** ED 407 Learning Environment http://www.filefactory.com/file/31o7fw99ux7l/ED%20407%20Learning%20Environment.zip	Morning tea and networking	**Change Management** By- Daw Hla Myat Mon **Delivery mode-Lecture 38min** **VIDEO** http://youtu.be/ynkcUcKr8tQ **AUDIO** http://yourlisten.com/Kyaw.Nain **References** University of Technology Master o & experience in University of Tech
5	**Preparation and finalisation of full documentations for Myanmar Engineering Council Accreditation** **Delivery mode-Tutorial** Facilitators Dr Kyaw Naing Prof Dr Charlie Than & other trainers of MEng C	Morning tea and networking	**Preparation and finalisation of** **Delivery mode-Tutorial** Dr Kyaw Naing Prof Dr Charlie Than & other trainers of MEng C
5	Mock Accreditation Sessions Practice	Morning tea and networking	Mock Accreditation Sessions Pract

Remark
Depending on the resources & facilities availabilities, Session 2 & 3 of Day 7 & 8 may need to be replaced with other activities

Preparation for Myanmar Engineering Council Accreditation Course

Course Outline

This two weeks course is designed as Technical Teacher Education Professional Development course for teachers working at Government Technical Colleges and Technological Universities to design the curriculums and teaching resources to meet the accreditation requirements of Myanmar Engineering Council.

Aim of the course

To provide the training to the technical education teachers to understand and apply the principles of adult & vocational education outcome based education, competency based training. compliance with Qualification & Training Authority-Myanmar Engineering Council's Rules, Regulations and Standards for accreditation by taking part in intensive workshop focussing on curriculum development and assessment documents portfolio preparations for Myanmar Engineering Council Accreditation

Outcome of the course

After completion of this course, the participant will be able to

- Understand Myanmar Engineering Council Accreditation Rules & Regulations related to accreditation of Government Technical Colleges & Technological Universities in Myanmar.
- Understand and utilize the principle & features of Outcome based education.
- Understand the Adult & Vocational Education, Work based Learning and Competency based training & assessments tasks.
- Acquire the knowledge on Competency based education and training and training packages being used in industrialized countries (Examples of Australian Standard Competency based vocational education & training system.
- Get the information & knowledge on Current issues related to international & Myanmar Engineering profession.
- Participate in hand on practice workshop focussing on curriculum development & collecting and preparing the materials for accreditation by Myanmar Engineering Council Engineering Accreditation Committee & taking part in mock accreditation sessions.

- Explore the Adult & Vocational Educational Literatures, Textbooks, References & Resources, e-Learning, Learning Technology & Technology in classroom resources knowledge sharing.
- Certificate of Training will be issued by Myanmar Engineering Council as well as by the trainer's educational institution.

Target Group

- Course leaders who are responsible for development of teaching curriculums and learning resources for teaching of engineering programs.

Arrangement of attendances

- It will be an official course development and accreditation workshop in accordance with Myanmar Engineering Councils' Rules , Regulations and Accreditation system, the attendance of this course is part of the official duty and appropriate duty release arrangement may be required under the procedures of the Ministry of Science & Technology.

Place of the course

- Appropriate training venue arranged by Myanmar Engineering Council or Myanmar Engineering Society.

Course Duration

12 days (Mondays to Saturdays) (December 2015)(The exact date will be provided)

Requirements

The participants will need to bring the documents related to teaching plan, curriculum, course materials or reference notes that they are using in teaching Access to laptop/computer will be required for the participants. Teaching aids such as white board , computer & Overhead Projector will be required to show the slides. It will be better to access Internet.

Sessions , Trainers and Facilitators

Day	Session 1 9 to 10:30AM	Tea break	Session 2 11 to 12:30 Noon	Lunch break 12:30 to 1:30 PM	Session 3 1:30 to 3:30PM (The extended time up to 5PM can be taken up to the duration of workshop & group works)
1 17 Dec 2015	Welcome speech by • Chairman of Myanmar Engineering Council • President of Myanmar Engineering Society • Chairman of Engineering Accreditation Committee Introduction to trainers & facilitators Outline of the program Participants ' self introduction General information and arrangement (detailed time schedule needs to be arranged)	Morning tea and networking	Overview of Myanmar Engineering Council Law, Regulation, Accreditation Principles By -Trainer from Myanmar Engineering Council **Delivery mode-Lecture**	Lunch	Highlighting 9.2.1 General Information (MEng C) 9.2.2 Programme Objectives & writing the objectives of the course by Dr Kyaw Naing **Delivery mode-Lecture 30 min + Tutorial 90 min** Audio http://yourlisten.com/Kyawnaing2524/day-1-session-3 **Reference Reading (Education theory)** ED 106 Interpreting Curriculums http://www.filefactory.com/file/1h141zxbov8z/ED%20106%20Interpreting%20Curriculums.zip **Practical Information** Provide the examples of how to set up the program objectives for Professional Engineer, Engineering Technologists and Engineering Associates levels www.highlightcomputer.com/OverallProgramGeneral.pdf **Page 4 to 11** **References**

					Engineers Australia References www.highlightcomputer.com/engineersaustraliareferences.htm Stage 1 Competencies of PEng, Eng Technologists & Eng Associates Engineering job competencies http://www.highlightcomputer.com/EngineeringJobCompetencies.pdf Participants' tasks Write the course objectives of the engineering programs that they are teaching, discussion & feedback
2 **18 Dec 2015**	**Outcome Based Education** By Myanmar Engineering Council or Myanmar Engineering Society **Delivery mode-Lecture**	Morning tea and networking	**Competency based education & training & how the competency based training is important to reach the desired outcome** By Dr Kyaw Naing References *Characteristics of Learning Outcomes* **Delivery mode-Lecture 30 min + Demonstration 60 min** **AUDIO** http://yourlisten.com/Kyaw.Naing/day-2-session-2	Lunch	**1:30 to 3:30PM** **Example of Singapore Professional Engineers Assessment Programs** By Dr Sam Man Keong President of Singapore Institute of Engineering Technologists **Delivery mode-Lecture** **3:45 to 5PM** **Sample of Competency based training widely used in Myanmar** Examples of marine engineers competency assessment in Myanmar/ in line with International Certification standards & explore the way to apply the similar competency based training in other engineering areas

			In Certificate I to Vocational Diploma http://www.filefactory.com/file/32hy8l1za8wz/TAE10_R3.4.docm Page 36 to 41 Provide the level of performances of the students tasks in the curriculums & activities Sample Curriculums Certificate to Advanced Diploma http://www.highlightcomputer.com/detailedcontent.htm Bachelor degrees equivalent level http://highlightcomputer.com/B%20E+B%20App%20Sc(IT)+B%20Bus%20Course%20Detailed%20Contents.htm		By- Dr Charlie Than **Delivery mode-Lecture**

3 **19 Dec 2015**	9.2.3 Learning Outcomes **Requirement of Myanmar Engineering Council** **& how to design the curriculum to address the learning outcomes** By Dr Kyaw Naing **Delivery mode-Lecture** **AUDIO** http://yourlisten.com/Kyaw.Naing/day-3-session-1 Educational Theoretical Readings ED 104 Lesson Planning http://www.filefactory.com/file/4m30ym0ez37r/ED%20104%20Lesson%20Planning.zip ED 202 Curriculum & Design http://www.filefactory.com/file/1jotv5d428j1/ED%20202%20Curriculum%20%26amp%3B%20Design.Zip Practical Example www.highlightcomputer.com/OverallProgramGeneral.pdf Page 13 to 21	Morning tea and networking	**Engineering Fundamental** **Current Engineering Fundamental Assessment in Myanmar** By Myanmar Engineering Society **Delivery mode-Lecture** Engineering Fundamental Assessments By Myanmar Engineering Society **Engineering Fundamental Assessment in UK Engineering Council Examinations** By Dr Sam Man Keong President of Singapore Institute of Engineering Technologists **Delivery mode-Lecture**	Lunch	**Curriculum Development Workshop Part 1** The participants need to make the samples of the plans to provide the competency based training in their teaching and training areas **Delivery mode-Tutorial 120 min** **Facilitator**- Dr Kyaw Naing & other trainers How to put the topics to meet the learning outcomes and how to include the engineering fundamentals concepts into curriculum contents Group development task & discussions **Facilitators** Dr Kyaw Naing & other trainers Dr Sam Man Keong will also contribute his views & advices. **Education Theory Reference** ED 106 Interpreting Curriculums http://www.filefactory.com/file/1h141zxbov8z/ED%20106%20Interpreting%20Curriculums.zip **Delivery mode-Tutorial 120 min**

4 **21 Dec 2015**	9.2.4 Academic Curriculum **Discuss the programme structure and course contents(MEng C)** **Discuss the programme delivery and assessment methods** By Myanmar Engineering Council **Delivery mode-Lecture**	Morning tea and networking	**General Knowledge related to overseas programs** By Dr Kyaw Naing **Vocational Education Teacher Education** **Delivery mode-Lecture** **45 min** **AUDIO** http://yourlisten.com/Kyaw.Naing/day-4-session-2 http://www.filefactory.com/file/4yb11lp1x9b/n/Vocatinal_Education_Teacher_Education_pdf **Sample Training Packages** Electrotechnology/ Electronics/ /Communication **UEE11_R1.5.docm (13.37MB)** http://www.filefactory.com/file/1n283tjamw2p/n/UEE11_R1.5.docm Electricity Supply **UET12_R2.1.docm (7.86MB)** http://www.filefactory.com/file/56saqflqmh41/n/UET12_R2.1.docm	Lunch	**Curriculum Development Workshop Part 2** Group work on selecting the Contents of curriculums & training packages into teaching curriculums of participants' institutions. Group discussion, feedback Facilitator Dr Kyaw Naing & Other trainers **Delivery mode-Tutorial 120 min** **Examples** www.highlightcomputer.com/OverallProgramGeneral.pdf Page 22 to 43 **Samples** http://www.highlightcomputer.com/BECurriculum.htm http://www.highlightcomputer.com/DiplomaAdvancedDiplomaCivilEngineeringCurriculum.htm http://www.highlightcomputer.com/DiplomaAdvancedDiplomaElectricalEngineeringCurriculum.htm http://www.highlightcomputer.com/DiplomaAdvancedDiplomaMechanicalEngineeringCurriculum.htm

			Electrical Power Generation **UEP12_R2.1.docm (7.79MB)** http://www.filefactory.com/file/52pe03hs2xq1/n/UEP12_R2.1.docm Automotive **AUR12_R2.1.docm (13.37MB)** http://www.filefactory.com/file/4qtgr5i39dzl/n/AUR12_R2.1.docm Manufacturing & Engineering (Mechanical) **MEM05_R11.1.docm (9.8MB)** http://www.filefactory.com/file/29evfecw9yk9/n/MEM05_R11.1.docm Marine **MAR_R2.0.docm (1.78MB)** http://www.filefactory.com/file/6sodu2z259j3/n/MAR_R2.0.docm Textile **LMT07_R4.1.docm (8.28MB)** http://www.filefactory.com/file/6gea7ztqqsq3/n/LMT07_R4.1.docm		**Examples** Page 77 to 86 of www.highlightcomputer.com/OverallProgramGeneral.pdf

			Construction **CPC08_R9.0.docm (9.59MB)** http://www.filefactory.com/file/3j1y315nbze7/n/CPC08_R9.0.docm Information Technology **ICA11_R2.0.docm (5.27MB)** http://www.filefactory.com/file/4e3ioubld73n/n/ICA11_R2.0.docm Chemical **PMA02_2.pdf (1.92MB)** http://www.filefactory.com/file/2t53b3xj0slr/n/PMA02_2.pdf **PMA02_1.pdf (1.65MB)** http://www.filefactory.com/file/33ikm94dl8jb/n/PMA02_1.pdf Manufacturing **MSA07_R8.4.docm (4.93MB)** http://www.filefactory.com/file/4tcjlsetp0rd/n/MSA07_R8.4.docm **TAE10_R3.4.docm (1.87MB)**		

			http://www.filefactory.com/file/566jfcevasu5/n/TAE10_R3.4.docm Gas **UEG11_R2.0.docm (5.44MB)** http://www.filefactory.com/file/6shho87gm1nh/n/UEG11_R2.0.docm Mining **MNM05_3.pdf (2.28MB)** http://www.filefactory.com/file/78fk485ew98v/n/MNM05_3.pdf **MNM05_2.pdf (2.29MB)** http://www.filefactory.com/file/72yjazer7njj/n/MNM05_2.pdf **MNM05_1.pdf (1.77MB)** http://www.filefactory.com/file/6ahwwdwosk8j/n/MNM05_1.pdf		
5 **22 Dec 2015**	**Approach to various learning modes in VET** By- Dr Kyaw Naing & the speakers from various technological universities **Delivery mode-Lecture 43 min** AUDIO http://yourlisten.com/Kyaw.Naing/day-5-session-1b	Morning tea and networking	**Preparing vocational teaching portfolios** By Dr Kyaw Naing **Delivery mode-Lecture 48 min** References Worksheets AUDIO http://yourlisten.com/Kyaw.Naing/day-5-session-23	Lunch	**Learning outcomes & Teaching / Training Strategies workshop** Develop teaching and learning strategies in the curriculum for the courses that are taught by the participants Group work, group discussions **Example**

	Topics & References **Practical focus** **Group Base learning.pdf (3.25MB)** http://www.filefactory.com/file/266najoy91o3/n/16.taadel401a_Plan_&_Organize_Group_Base_learning.pdf **Facilitate Group based learning.pdf (2.81MB)** http://www.filefactory.com/file/1tvk73q17j43/n/18.taadel402a_Facilitate_Group_based_learning.pdf **Work based learning.pdf (4.15MB)** http://www.filefactory.com/file/24apg5s5n0fx/n/22.taadel404a_Facilitate_work_based_learning.pdf **individual learning.pdf (1.94MB)** http://www.filefactory.com/file/4nmwy8ldewh1/n/20.taadel403a_Facilitate_individual_learning.pdf **Distance based learning (2.56MB)** http://www.filefactory.com/file/3w2b2mdycbx1/n/24.taadel405a_Coordinate_7_facilitate_distance_based_learnin.pdf Educational Theory Resources ED 103 Teaching Practice http://www.filefactory.com/file/1o732n0j46mf/ED%20103%20Teaching%20P		**Provide Training through instruction and demonstration of work skills** **TAADEL301A.doc (0.03MB)** http://www.filefactory.com/file/2ppyhdlqhlsh/n/TAADEL301A.doc **Facilitate work-based learning** **TAADEL404A.doc (0.03MB)** http://www.filefactory.com/file/60ojucglvyu3/n/TAADEL404A.doc **Group based delivery** **TAADEL401A.doc (0.03MB)** http://www.filefactory.com/file/3i5scp12gkdn/n/TAADEL401A.doc **Use Training Packages to meet client needs** **TAADES401A.doc (0.03MB)** http://www.filefactory.com/file/32bofyyl82wf/n/TAADES401A.doc **Design and develop learning programs** **TAADES402A.doc (0.03MB)** http://www.filefactory.com/file/4nhro84kl2nx/n/TAADES402A.doc		Page 44 to 49 of www.highlightcomputer.com/OverallProgramGeneral.pdf **Facilitator** Dr Kyaw Naing & Other trainers Contents Research http://www.filefactory.com/file/eovzqp6gd1/assessment%20strategies.pdf http://www.filefactory.com/file/7jfakka1vpfx/G015BWork%20performance%20report.doc http://www.filefactory.com/file/3ymfd2ekdn11/UEE11%20V1acessguidelines%5B1%5D.pdf DELIVERY & ASSESSMENT PLAN SAMPLES http://www.filefactory.com/file/1c03t5k3fp8p/SAMPLE%20ASSESSMENT%20ITEMS.htm

	ractice.zip ED 105 Principle of Learning http://www.filefactory.com/file/7660l6kjr8sx/ED%20105%20Principle%20of%20Learning.zip ED 107 Teaching & Learning http://www.filefactory.com/file/6u5o455lyqj7/ED%20107%20Teaching%20%26amp%3B%20Learning.zip **Myanmar Engineering Council References** • the choice of the teaching-learning (delivery) methods. • A balanced curriculum • The curriculum shall integrate theory with practice through adequate exposure to laboratory work and professional engineering(MEng C)		**Work effectively in vocational education and training** **TAAENV401A.doc (0.03MB)** http://www.filefactory.com/file/45zeif6cy5zx/n/TAAENV401A.doc **Foster and promote an inclusive learning culture** **TAAENV402A.doc (0.03MB)** http://www.filefactory.com/file/3zoufgaty89n/n/TAAENV402A.doc **Ensure a safe and healthy learning environment** **TAAENV403A.doc (0.03MB)** http://www.filefactory.com/file/6ireaw7s5jg9/n/TAAENV403A.doc **Individual learning** **TAADEL403A.doc (0.03MB)** http://www.filefactory.com/file/7g3h9iwpodfr/n/TAADEL403A.doc **Language Literacy &**		

	• Time allocation • Credit points ED 401 Adult Learning Technology http://www.filefactory.com/file/68y4bd94ianb/ED%20401%20Adult%20Learning%20Technology.zip		**Numeracy** **1397606218-taelln411_sample.pdf (0.34MB)** http://www.filefactory.com/file/5fh2bd8z3k0r/n/1397606218-taelln411_sample.pdf **Report.pdf (0.41MB)** http://www.filefactory.com/file/655u3qypqyj3/n/Report.pdf **Section 4 Model for core skills analysis.pdf (0.69MB)** http://www.filefactory.com/file/6p480mpcelft/n/Section_4_Model_for_core_skills_analysis.pdf **ACSF_Document.pdf (1.03MB)** http://www.filefactory.com/file/54s5xbe3esdn/n/ACSF_Document.pdf **LLN Preparation of students.docx (0.02MB)** http://www.filefactory.com/file/77ps5dxgbhpj/n/LLN_Preparation_of_students.docx **Australian Core Skills Framework for LLN Level**		

			determination.docx (0.02MB) http://www.filefactory.com/file/4qt7gx24cd9l/n/Australian_Core_Skills_Framework_for_LLN_Level_determination.docx **LLN Preparation of students.docx (0.02MB)** http://www.filefactory.com/file/1rvd487gxw0j/n/LLN_Preparation_of_students.docx		
6 **23 Dec 2015**	**Assessment Validation Guide of Myanmar Engineering Council** • assessment & evaluation methods for the attainment achievement of the Learning Outcome **Developing the assessment strategies in VET** By Dr Kyaw Naing **Delivery mode-Lecture 60 min** **AUDIO** http://yourlisten.com/Kyaw.Naing/day-6-session-1	Morning tea and networking	**Examination & Assessment Strategies & Experiences talks** By the educators from various technological universities & skills training organizations	Lunch	**Prepare the sample assessment activities for the courses that the participants are teaching** **Delivery mode-Lecture 41min + Tutorial 80 min** **AUDIO** http://yourlisten.com/Kyaw.Naing/day-6-session-23 **Facilitator** Dr Kyaw Naing & Other trainers Page 49 to 76 of www.highlightcomputer.com/OverallProgramGeneral.pdf Sample Assessment validation matrices http://www.filefactory.com/file/617mgi9ir63x/UEENEEE046B.zip

	Practical Application Resources **Participate in assessment validation** **TAAASS404A.doc (0.03MB)** http://www.filefactory.com/file/5zv1ke0eh2dj/n/TAAASS404A.doc **Develop assessment tools** **TAAASS403A.doc (0.03MB)** http://www.filefactory.com/file/5rxw2igqk7rx/n/TAAASS403A.doc **Plan and organise assessment** **TAAASS401A.doc (0.03MB)** http://www.filefactory.com/file/1tpnwpwxgxgv/n/TAAASS401A.doc **Assess competence** **TAAASS402A.doc (0.03MB)** http://www.filefactory.com/file/48yye4zmmxt7/n/TAAASS402A.doc **Reference Textbooks (Theory aspect)** ED 205 Teaching & Measuring http://www.filefactory.com/file/4eu01				http://www.filefactory.com/file/333wtizbok0n/UEENEEG002.zip http://www.filefactory.com/file/11tkbwlfo4jt/UEENEEG015B.zip Sample delivery & assessment schedules http://www.filefactory.com/file/5k19ps1z6xj9/20222%20Sequence%20%28V1%29%20%28001%200861%29%20120726.pdf Self assessment journal/ Reflection http://www.filefactory.com/file/1c0jfwumb27p/Self%20Assessment%20Journal%20Reflection.doc **Sample-Student Assessment Guide.doc (0.09MB)** http://www.filefactory.com/file/10m1ja7dnha3/n/UEENEEE101A_Student_Assessment_Guide.doc **Sample- RPL Tool Validation Record.pdf (0.08MB)** http://www.filefactory.com/file/34muh9bkgpk9/n/UEENEEE101A_RPL_Tool_Validation_Record.pdf **Sample- Assessment Cover sheet.doc (0.08MB)** http://www.filefactory.com/file/n6s0sk8izqj/n/UEENEEE101A_Assessment_Cover_sheet.doc **Sample-Assessment Feedback Sheet.docx (0.05MB)** http://www.filefactory.com/file/3soxroqt927j/n/UEENEEE101A_Assessment_Feedback_Sheet.docx

	ck2awl/ED%20205%20Teaching%20%26amp%3B%20Measuring.zip ED 206 Designing Instructions & Assessment http://www.filefactory.com/file/4dnh3r8wsd9t/ED%20206%20Designing%20Instructions%20%26amp%3B%20Assessment.zip ED 405 Training Principle http://www.filefactory.com/file/5quptpxznin/ED%20405%20Training%20Principle.zip				Evaluation check list http://www.filefactory.com/file/6jslcpuborkx/Evaluation%20Check%20List%20General%2BOnline%20Survey.docx http://www.filefactory.com/file/4crkqpqke02z/Evaluation.docx Recognition of Prior Learning Tools-Sample http://www.filefactory.com/file/2gtq6nqjag03/20278%20RPL_form_WVL_2014_V1_multi.xlsm http://www.filefactory.com/file/4phu09qmmy89/20281%20RPL_form_WVL_2014_V1_multi.xlsm http://www.filefactory.com/file/6qtg6w4uh3fh/20282%20RPL_form_WVL_2014_V1_multi.xlsm
7 **24 Dec 2015**	**Educational Resources Development in line with Myanmar Engineering Council Requirements** 9.2.7 Facilities By- Myanmar Engineering Council Engineering Accreditation Committee **Delivery mode-Lecture**	Morning tea and networking	**Integration of Learning Technology in Teaching & Learning Part 1** By Dr Kyaw Naing **Delivery mode-Lecture** **AUDIO** http://yourlisten.com/Kyaw.Naing/day-7-session23	Lunch	**On line & offline e-Learning systems Part 1** By Dr Kyaw Naing **Delivery mode-Tutorial 120 min** **Samples** Learning Platform example http://www.highlightcomputer.com/onlineteaching1.htm Using multimedia & videos in teaching & Learning http://www.highlightcomputer.com/videos1.htm

	Overviews of Professional Development Programs provided by Myanmar Engineering Society By- Myanmar Engineering Society **Delivery mode-Lecture**		**Resources** http://www.filefactory.com/file/3bsfz0ehba7z/n/5_Learning_Technology_1_zip http://www.filefactory.com/file/cvavvr9gonr/n/6_Learning_Technology_2_zip Due to the big file size, the resources will be given in CD		Using Youtube in teaching & learning http://www.highlightcomputer.com/videos2.htm Practice Use of DVD recorder, Digital note takers to record the lessons and prepare the multimedia power point lectures, PDF-JPG format conversion softwares
8 **26 Dec 2015**	**Technology in Classroom** By Dr Kyaw Naing **Delivery mode-Lecture 1 Hr** **AUDIO** http://yourlisten.com/Kyaw.Naing/day-8-session-1a Resources ED312 Technology in Classrooms http://www.filefactory.com/file/7jcivu232opx/n/7_Technology_in_classroom_zip ED 308 Computer Supported Learning & Distance Educationhttp://www.filefactory.com/file/4mdzrx52kl45/ED%20308%20Computer%20Supported%20Learning%20%26amp%3B%20Distance%20Education.zip		**Integration of Learning Technology in Teaching & Learning Part 2** **Delivery mode-Lecture+ Tutorial** **AUDIO** http://yourlisten.com/Kyaw.Naing/day-8-session-23 By Dr Kyaw Naing Sharing the e-Learning work experience utilized in TAFE-NSW Australian Classroom • Resources development • Computer assisted test		On line & offline e-Learning systems Part 2 **Delivery mode-Tutorial 120 min** Development of e-Learning Resources Practice workshop Development of learning support website & contents placement **Sample** www.electricaldiploma2013.zoomshare.com Use of online documents sharing sites www.filefactory.com www.uploading.com www.zoomshare.com www.webs.com

			• Use of online test/online survey • Online simulated practicals www.easytestmaker.com http://www.emailmeform.com/		
9 **28 Dec 2015**	8.5.2 Programme Quality Management and Planning 8.5.4 Quality Assurance 9.2.8 Quality Management System Preparation of self accreditation report Requirements of Myanmar Engineering Council By -Myanmar Engineering Council **Delivery mode-Lecture** **References** Curriculum design for accreditation compliance http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf Overall accreditation and	Morning tea and networking	**Preparing the documents to comply with Myanmar Engineering Council Requirement** **Delivery mode-Lecture 25 min** **AUDIO** **http://yourlisten.com/Kyaw.Naing/day-9-session-23** By Dr Kyaw Naing Sample www.highlightcomputer.com/assessment.htm Quality Assurance http://www.highlightcomputer.com/QualityAssurance.htm	Lunch	**Quality Assurance Compliance Documentation preparation workshop** **Delivery mode-Tutorial 120 min** The participants to prepare the quality assurance documents for the courses that they are teaching to comply with the requirements of Myanmar Engineering Council **Facilitator** Dr Kyaw Naing & Other trainers **Reference** Page 92 to 96 of www.highlightcomputer.com/OverallProgramGeneral.pdf

	compliance practice http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf Preparation for self accreditation report http://www.filefactory.com/file/43x0yutpx31v/2%20SAR.pptx Engineering Accreditation Plan http://www.filefactory.com/file/2ynzo3fydckb/2015%20YTU%20First%20Workshop.pptx				
10 **29 Dec 2015**	**Learning Environment** By- Dr Kyaw Naing **Delivery mode-Lecture 48min** **AUDIO** http://yourlisten.com/Kyaw.Naing/day-10-session-1 **Reference** ED 407 Learning Environment http://www.filefactory.com/file/31o7fw99ux7l/ED%20407%20Learning%20Environment.zip	Morning tea and networking	**Change Management** By- Daw Hla Myat Mon **Delivery mode-Lecture 38min** **AUDIO** http://yourlisten.com/Kyaw.Naing/day-10-session-23 **References** University of Technology Master of Business Change Management References & experience in University of Technology Sydney	Lunch	**Educational Leadership work experience knowledge** By Invited Educational Leaders of Myanmar Education **Delivery mode-Lecture** **Textbook** ED 308 Change Management http://www.filefactory.com/file/4cxrjx86buot/n/9_Leadership_Change_Management_zip ED309 Educational Communication http://www.filefactory.com/file/6tbjy1omi7kz/n/1_Educational_Communication_zip ED 402 Educational Leadership http://www.filefactory.com/file/68h2rewfq7jx/ED%20402%20Educational%20Leadership.zip

11 30 Dec 2015	**Preparation and finalisation of full documentations for Myanmar Engineering Council Accreditation** **Delivery mode-Tutorial** Facilitators Dr Kyaw Naing Prof Dr Charlie Than & other trainers of MEng C	Morning tea and networking	**Preparation and finalisation of full documentations for Myanmar Engineering Council Accreditation** **Delivery mode-Tutorial** Dr Kyaw Naing Prof Dr Charlie Than & other trainers of MEng C	Lunch	**Preparation and finalisation of full documentations for Myanmar Engineering Council Accreditation** **Delivery mode-Tutorial** Dr Kyaw Naing Prof Dr Charlie Than & other trainers of MEng C
12 **31 Dec 2015**	Mock Accreditation Sessions Practice	Morning tea and networking	Mock Accreditation Sessions Practice		Conclusion of the training.

Remark

Depending on the resources & facilities availabilities, Session 2 & 3 of Day 7 & 8 may need to be replaced with other activities

Diploma in Hazardous Safety Engineering Course (based on Professional Diploma but focused on beginner aspect (30 credits)

Course Objective

This course provides the information and knowledge related to safely working in hazardous areas, safe working knowledge, safety protection equipments, systems and methods, auditing the safety requirements of hazardous area engineering works such as mining, petroleum, chemical plants ,civil ,electrical and mechanical engineering

Pre-requisite

Nil

SAFE 101 General Safety Management(Diploma version of BAE 636E Hazardous Area Inspection)

(5 Credits)

-Contents- Management+ Industrial Management + Safety Lessons

SAFE102 Electrical Safety(Diploma version of BAE 632E Electrical Wiring in Hazardous Areas) (

(5 Credits)

-Contents EE101+102+ Electrical Wiring (IQY)+ + Electrical Safety Lessons

SAFE103 –Construction Safety (Diploma version of BAE 633E Hazardous Area Safety Audits)

(5 Credits)

-Contents- CE104+CE106 Building Construction+ Brick Laying+ Plumbing+ Safety Lessons

SAFE104 –Chemical Safety (Diploma version of BAE 637E Hazardous Chemical Management)

(5 Credits)

-Contents Year 12 Chemistry + Chemical Safety Lessons

SAFE105 –Environmental Safety (Diploma version of BAE 638E Environmental Engineering in Hazardous Areas)

(5 Credits)

Contents-BAE 523A Environmental Engineering+ Safety Lessons

SAFE106-Mechanical Safety(Diploma version of BAE 631E Maintenance & Repair Works in Hazardous Areas)

Content-Fitting & Machining + Safety Lessons

Location

IQY Technical College- No 307B Thura 2 Street, 9 Ward South Okkalapa

GGO Training Group -No 76A 4 th Floor Awwbar St, Kyauk-myaung, Tarmwe

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ADVANCED COURSE (ONLINE)

Professional Diploma in Hazardous Safety Engineering

Course Objective

This course provides the information and knowledge related to safely working in hazardous areas, safe working knowledge, safety protection equipments, systems and methods, auditing the safety requirements of hazardous area engineering works such as mining, petroleum, chemical plants ,civil ,electrical and mechanical engineering

Pre-requisite

Professional Diploma/ Bachelor degree in Engineering (Any discipline)

Course Outline

It consists of 8 units with each 5 credits.

- BAE 631E Maintenance & Repair Works in Hazardous Areas
- BAE 632E Electrical Wiring in Hazardous Areas
- BAE 633E Hazardous Area Safety Audits
- BAE 634E Explosion Protection
- BAE 635E Testing in Hazardous Areas
- BAE 636E Hazardous Area Inspection
- BAE 637E Hazardous Chemical Management
- BAE 638E Environmental Engineering in Hazardous Areas

Professional Diploma in Architectural Engineering

(Guided study to complete Professional Diploma in Civil Engineering & Fees will be charge for that)

Stage 1- Complete Professional Diploma in Civil Engineering Program

Stage 2-Study the textbooks in the following site.

(Self study with presentation of study progress report to complete Professional Diploma in Architectural Engineering- Assessment Fees will be charged only after the student can submit the report for first textbook)

Year 4 BE (Architectural Engineering)

AE401 Architecture Theory

AE402 Architectural Design

AE404 Building Services

AE406 Sustainable Building Design

AE407 Architectural Drafting

Year 5 BE (Architectural Engineering)

AE501 Architectural Management

AE502 Interior Design

AE503 Green Building Design

AE504 Construction Contract

AE505 Solar Architecture & Smart House Design

AE506 Architecture Commercial Design

AE507 Unban Design

AE508 Landscape Design

Year 6 BE (Architectural Engineering)

AE601 Architectural Design& Ethics

AE602 Building Survey & Reporting

AE603 Building Control Systems

AE604 Sustainable Architecture

AE605 Details Design

AE606 Outdoor Structure Design

Study Method & Assessment

The students will need to read the reference materials provided in folder of each unit & write the report on their study for each unit.

The report should contain

- Summary of knowledge acquired in the unit
- Practical methods related to assessment, safe working, protection, technical data, equipments utilized in hazardous areas
- Practical applications in work place
- Specific applications in the area of your choice
- Reference guides etc

Each report should be Arial 11 fonts with 10 to 20 pages written in own words by using English..

Insert the appropriate diagrams & tables, formula and data related to information.

Professional Diploma in Chemical Engineering

(This course can only be studied by self study mode)

Fees will only be charged after submission of the study progress report for first textbook.

EM 11001	Engineering Mathematics I
EPh 11011	Engineering Physics I
ECh11011	Engineering Chemistry I
ME 11011	Basic Engineering Drawing
ChE 11001	Organic Chemistry

ME 22021	Machine Drawing
ME 22015	Engineering Mechanics
EcE 22012	Applied Electronic Engineering
Met 21071	Engineering Material
ChE 22013	Material and Energy Balances

BE(Chemical) Year 3

ME 31014	Strength of Materials
ChE 31012	Fluid Mechanics
ChE 31013	Chemical Engineering Thermodynamics
ChE 31022	Heat Transfer

BE(Chemical) Year 4

ME 41031	Design of Machine Elements

ChE41015	Quality Control
ChE41032	Mass Transfer
ChE41042	Particle Mechanics

BE(Chemical) Year 5

ME 51028	Industrial Management
ChE51025	Instrumentation for Chemical and Automatic Process Control
ChE 51052	Chemical Reaction Kinetics and Reactor Design
ChE 51007	Pollution Control, Maintenance and Industrial Safety
ChE 51062	Biochemical Engineering
ChE 51016	Chemical Process Design

BE(Chemical) Year 6

IT 61024 Computer Application Software
ChE 61016 Plant Design and Economics for Chemical Engineers

Study Method & Assessment

The students will need to read the reference materials provided in folder of each unit & write the report on their study for each unit.

The report should contain

- Summary of knowledge acquired in the unit
- Practical methods related to assessment, safe working, protection, technical data, equipments utilized in hazardous areas
- Practical applications in work place
- Specific applications in the area of your choice
- Reference guides etc

Each report should be Arial 11 fonts with 10 to 20 pages written in own words by using English..

Insert the appropriate diagrams & tables, formula and data related to information.

Advanced Diploma in Engineering (Engineering Practice)/
Professional Diploma in Engineering (Engineering Practice)

(Course 67110/67111)

Course Objective

This course aims to provide the necessary skills and knowledge for Diploma/ AGTI /BTech /BE Graduates of Government or Non Government Technical Colleges and Technological Universities of Myanmar to achieve the educational requirement to acquire Singapore Recognized Engineer (Fellowship)/ ASEAN Engineering Technologists/ Associate Engineering Technologists/ ASEAN Engineering Technician/ Associate Technicians through Membership of Singapore Institute of Engineering Technologists & further career progress toward ASEAN Engineer.

Course Outline

ENG601- Engineering Studies (60 pt- for submission of AGTI/BTech/BE)

ENG602-Engineering Applications (10 pt for submission of Curriculum Vitae for experienced engineers and Final Year Project Report for recent graduates)

ENG603-Engineering Practicals (10 pt- Which can be exempted for minimum of 5 Years Engineering Experience)

ENG604-Occupational Health & Safety (5 pt)

ENG605-Engineers Law (2 pt)

ENG606-Engineering Ethics (3 pt)

The candidates who complete ENG 601/602/603/604/605/606) can receive Advanced Diploma in Engineering (Engineering Practice) (Credit Points 90) which is academic requirement for MSIET (Member of Singapore Institute of Engineering Technologists)

ENG607 -Leadership & Management Skills for Engineers (4 pt)

ENG608-Business Skills for Engineers (6 pt)

ENG609-Financial Management Skills for Engineers (3 pt)

ENG610-Engineering Materials (4 pt)

ENG611-Renewable Energy Engineering (10 Pt)

ENG612-Risk Assessment Skills for Engineers (3 pt)

The candidates who complete ENG 601/602/603/604/605/606/607/608/609/610/611/612) can receive Professional Diploma in Engineering (Engineering Practice) (Credit Points 120) which is academic requirement for FSIET (Fellow of Singapore Institute of Engineering Technologists)

Enrol at the following link http://www.emailmeform.com/builder/form/p915fvwS1a00971Hx9U6u10

STUDY GUIDE

ENG601- Engineering Studies (60 pt- for submission of AGTI/BTech/BE)

ENG602-Engineering Applications (10 pt for submission of Curriculum Vitae for experienced engineers and Final Year Project Report for recent graduates)

ENG603-Engineering Practicals

Select any two practical courses, study and submit the assignment

RESOURCES DOWNLOAD LINK

http://www.highlightcomputer.com/PracticalCourses.htm

ENG604-Occupational Health & Safety (5 pt)

Mgt 208 Safety Management

www.mongroupsydney1.com/Mgt208SafetyManagement.pptx

ASSIGNMENT

Do the exercises in the following link.

www.mongroupsydney1.com/AdvancedDiplomainManagementStudyGuide.pdf

VIDEOS

E011+E017 Lesson 1 Hazards of electricity

http://youtu.be/u7hZkdSDWxI

E011+E017 Lesson 2 Low voltage safety

http://youtu.be/O9C0S5yzpy4

http://youtu.be/DILgJf5gNEQ

http://youtu.be/8fjcP8MEffI

E011+E017 Lesson 3 Safety procedure & methods

http://youtu.be/DRdri7ZJUfw

E011+E017 Lesson 4 Electrical installation safety

http://youtu.be/2srZpukbAQw

E011+E017 Lesson 5 Installation safety

http://youtu.be/NVBghDWmeX0

Power Line Accident Due to Ladder
http://youtu.be/csV1qiMskSQ

Electric Fire
http://youtu.be/0DXz2Ny7w74

http://youtu.be/1n61ds40lt4

ENG605-Engineers Law (2 pt)

Write the critical review of Myanmar Engineering Council Laws and Regulations by reflecting your own view. You can write 1 to 3 Pages.

RESOURCES DOWNLOAD LINK

http://www.highlightcomputer.com/mengclaw.htm

http://www.myanmarengc.org/laws-regulation

ENG606-Engineering Ethics (3 pt)

Study Engineers Ethics of Myanmar Engineering Council. Then do the research work on various media such as Newspaper/ Journals/ Internet to find out any engineering tasks which do not comply with public safety/ ware fare of public and wasting of public money/ breach of consumers' right etc and provide the critical review by referring the relevant clauses of Engineers Ethics.

RESOURCES DOWNLOAD LINK

www.highlightcomputer.com/MEngCEthics.pdf

ENG607 -Leadership & Management Skills for Engineers (4 pt)

VIDEOS

Mgt 101 Management

Day 3 Part 3AMgt 101+501

Day 3 Part 3BMgt 101+501

Day 3 Part 3CMgt 101+501

ICT 104 Mgt 104 Program Project +BAE 508 Project Management

Day 7 Part 2

ICT104+Mgt104+BAE508 1

ICT104+Mgt104+BAE508 2

ICT104+Mgt104+BAE508 3

ICT104+Mgt104+BAE508 4

ICT104+Mgt104+BAE508 5

ICT104+Mgt104+BAE508 6

Mgt 105 Quality Management

Day11 Part 2

Mgt 5051

Mgt 5052

Mgt 5053

Mgt 5054

Mgt 5055

LESSONS TO BE STUDIED & ASSIGNMENT

www.iqytechnicalcollege.com/MgtAdvDip.zip

studies all files JPG+MP3

Then answer Questions for MGT 104 (for MGT505+EE309 Lessons) (Page 3 to 5) and MGT105 (for MGT505 Lessons (Page 5 to 8) of www.highlightcomputer.com/DipManagementAssignment.pdf

OTHER REFERENCES

www.highlightcomputer.com Day 3 Part2-Mgt 101 Management.zip

www.highlightcomputer.com/Day 7 Part 2-ICT 104 Mgt 104 Program Project BAE 508 ProjectManagement.zip

www.highlightcomputer.com/Day 11 Part 2-Mgt 105 Quality Management.zip

ENG608-Business Skills for Engineers (6 pt)

VIDEOS

Mgt 102 Performance Management

Day 12 Part 2

Mgt 1021

Mgt 1022

Mgt 1023

Mgt 201 Customer Service Management

https://youtu.be/3I-eSQyy9x0

Mgt 202 Change Management

https://youtu.be/cF8e-GrmqIo

https://youtu.be/i-yXY9k71uc

Mgt 203 Inventory & Budget Management

https://youtu.be/UsUsrFLspxc

Mgt 204 Continuous Improvement Management

https://youtu.be/H8X9GP9nY7Q

Mgt 205 Office Management

https://youtu.be/yYacivydUa4

https://youtu.be/J6Nwoz8nnOY

Mgt 206 Work-based Training Management

https://youtu.be/-_t0SLtD3BY

https://youtu.be/wgTrTLTS9KY

Mgt 207 Business Letter Writing

https://youtu.be/3c4mhgmBums

Mgt 210 Professional Development Management

https://youtu.be/bYrknSQDERA

https://youtu.be/wxUI2K390GY

Mgt 211 Leadership

https://youtu.be/cF8e-GrmqIo

https://youtu.be/i-yXY9k71uc

Mgt 212 Preparing Portfolios

Mgt 213 Conflict Management

https://youtu.be/eaiSooLv5K0

LESSONS TO BE STUDIED & ASSIGNMENT

Do any two units of the followings/ If you do all, you will get Advanced Diploma in Management as well.

Mgt 201 Customer Service Management

www.mongroupsydney1.com/Mgt201CustomerServiceManagement.zip

Mgt 202 Change Management Reader

www.mongroupsydney1.com/Mgt202ChangeManagementReader.pdf

Mgt 204 Continuous Improvement Management

www.mongroupsydney1.com/Mgt204ContinuousImprovementManagement.zip

Mgt 211 Leadership

www.mongroupsydney1.com/Mgt211Leadership.zip

Mgt 213 Conflict Management

www.mongroupsydney1.com/Mgt213ConflictManagement.zip

ASSIGNMENT

Do the exercises in the following link.

www.mongroupsydney1.com/AdvancedDiplomainManagementStudyGuide.pdf

ENG609-Financial Management Skills for Engineers (3 pt)

Certificate in Financial Management

www.highlightcomputer.com/Mgt106.zip

All lessons+ Exercises in the above link

ENG610-Engineering Materials (4 pt)

10 RE010-Engineering Materials

www.iqytechnicalcollege.com/RE010.zip

ASSIGNMENT

Page 48 to 61 of

www.highlightcomputer.com/BEGeneralREAssignment.pdf

ENG611-Renewable Energy Engineering (10 Pt)

Do any two units. If you do all, you will also receive Diploma in Renewable Energy Engineering.

RE001- Foundation Studies in Renewable Energy and Sustainability

www.iqytechnicalcollege.com/RE001.pdf

ASSIGNMENT

Page 5 to 16 All questions of

www.highlightcomputer.com/BEGeneralREAssignment.pdf

RE003- Solar and Thermal Energy Systems

www.iqytechnicalcollege.com/RE003.zip

ASSIGNMENT

Page 18 All questions of

www.highlightcomputer.com/BEGeneralREAssignment.pdf

RE004- Energy Storage Systems

www.iqytechnicalcollege.com/RE004.zip

ASSIGNMENT

Page 19 to 30 All questions of

www.highlightcomputer.com/BEGeneralREAssignment.pdf

RE005- Renewable Energy Resource Analysis & Wind Energy Conversion Systems

www.iqytechnicalcollege.com/RE005.zip

www.iqytechnicalcollege.com/RE006.zip

ASSIGNMENT

Page 31 to 46 All questions of

www.highlightcomputer.com/BEGeneralREAssignment.pdf

RE007- Energy System Efficiency

www.iqytechnicalcollege.com/RE007.zip

ASSIGNMENT

www.mongroupsydney1.com/RE007Exercises.pdf

VIDEOS

LECTURES (ENGLISH+MYANMAR EXPLANATIONS)

When you click the link, it will come out with Safety Mode ON
You need to sign in by using your e-mail account to lock off the Safety Mode.

RE001 Foundation Studies in Renewable Energy

Day 6 Part 1

Foundation Studies in Renewable Energy 1(Myanmar+English)
Topics-Climate change, solar energy, hydro energy

Foundation Studies in Renewable Energy 2(Myanmar+English)
Topics-Tidal Power, Design for climate

Foundation Studies in Renewable Energy 3(Myanmar+English)
Topics-Solar heating, Site selection, Embodied Energy

Day 6 Part 1
RE001- Foundation Studies in Renewable Energy and Sustainability /BAE 523A Environmental Engineering (Civil)

www.highlightcomputer.com/Day 6 Part 1 R001BAE523-Foundation Studies in Renewable Energy and Sustainability.zip

Day 6 Part 1
RE 001 Foundation Studies in RE
Slide 1,2,4,8,12,14,16,20,22,23,24,27,29,34,44,50,52,66,69,77,81,82,86,88,93,97,99,114,115,117,118,119,138,142,145,146,161,164,192

RE005 Renewable Energy Resources Analysis

Day 9 Part 1
Renewable Energy Resources Analysis 1 (Myanmar+English)
Topics-Hydro Power Plants

Renewable Energy Resources Analysis 2 (Myanmar+English)
Topics-Water Turbines

Renewable Energy Resources Analysis 3 (Myanmar+English)
Topics-Bio-Energy, Thermo Chemical

Renewable Energy Resources Analysis 4 (Myanmar+English)
Topics-Bio-Chemical Processing, Geo-thermal Energy, Tidal Energy

Renewable Energy Resources Analysis 5 (Myanmar+English)
Topics-Tidal Wave Generators, Connection to Electricity Grid

Day 9 Part 1
RE005- Renewable Energy Resource Analysis

RE005-RE Resources Analysis (6).pdf (5.42MB)
http://www.filefactory.com/file/6ij4aag9kodh/n/RE005-RE_Resources_Analysis_(6).pdf

www.highlightcomputer.com/Day 9 Part 1 RE005-Renewable Energy Resource Analysis.zip

Day 9 Part 1
RE005 Renewable Energy Resources Analysis
RE004-4
Hydro power Slide 2,3,5,6
Hydro plants 7,8
Turbine blades 11,14,15,18,22
Bio energy
29,31,32,33,34,
Bio fuel 36,37,41
Oil extraction 44,45
Thermo chemical processing 46
RE005-5
Bio chemical processing 7,9,10,11, Ethanol 13,14
Geothermal 24,28,32,36,40,42,46,50,51
RE005-6
Tidal energy Physics 1,3,5,6,7,8,9,11,14,17,20,21,23,24,25,27,28,29,30,31,34,36,37,43,44,47,50,52,53
RE005-7
Hydrogen Fuel
1,2,3
Fuel cell 13,14

RE003- Solar and Thermal Energy Systems
Day 7 Part 1
Solar and Thermal Energy Systems 1 (Myanmar+English)
Topics-Solar Energy & Thermal Conversion

Solar and Thermal Energy Systems 2 (Myanmar+English)
Topics-Heat Exchanger, District Heating, Combined Heat & Power

Solar and Thermal Energy Systems 3 (Myanmar+English)
Topics-Domestic Solar Heating & Cooling, Earth Heat Reservoir

Day 7Part 1
RE003 Solar & Thermal Energy System
Slide
1,2,5,6,9,11,14,15,20,21,24,25,31,33,35,37,39,42,44,46,47,53,57,58,61,63,69,71,73,77,100,117,118,122,123,126,130,137,138,148,151,152,154

Solar energy+ Measurement of irradiation Page 1 to 15
Solar water heating system + Collectors Page 20 to 39
Solar water heater + Heat exchanger Page 42 to 63
Combined hot water system Page 100 to 148
Dielectric +Heating system + Earth Reservoir Page 151 to 154

Day 7 Part 1
RE003- Solar and Thermal Energy Systems

www.highlightcomputer.com/Day 7 Part 1 RE003- Solar and Thermal Energy Systems.zip

RE004- Energy Storage Systems
Day 8 Part 1

Energy Storage Systems (Myanmar+English)

Topics-Principle, Power Grid Energy Storage Devices, Redox

Battery, Hydrogen Cell Battery

Day 8 Part 1
RE004- Energy Storage Systems+ RE006- Wind Energy Conversion Systems

www.highlightcomputer.com/Day 8 Part 1A-RE004- Energy Storage Systems.zip
Day 8 Part 1A
RE004 Energy Storage System
Storage& density Page 1,4,6
Page 7-System, Page 8 Storage management Page 10
Frequency regulation Page 12 Voltage Page 16
Distribution network energy storage Page 18
Energy storage retailer Page 23, 24, 25, 29, 30, 31,32,35,37,38,41,42,43,44

www.highlightcomputer.com/Day 8 Part 1B-RE006- Wind Energy Conversion Systems.zip

RE006 Wind Energy Conversion System

Wind Energy Conversion System 1(Myanmar+English)
Topics-Energy& Power in Wind, World Wind Energy

Wind Energy Conversion System 2 (Myanmar+English)
Topics-Wind Turbine, Aero-dynamic forces, Electricity Generated by Wind Turbine

Day 8 Part 1B
RE006 Wind Energy System
Page 1 Wind of the world
Page 2 Energy & Power in the wind Page 3,4
Wind machines Page 6,7,8,9
Page 14 Aero dynamic force Page 19,20 Aerofoil
Page 23 Relative wind velocity
Page 24 Wind turbine power 26,27,28
Page 32 Wind energy calculation Page 36

RE002- Grid Connected Photovoltaic Power Systems-Electrical

Day 14Part 1
Grid Connected Photovoltaic Power Systems 1(Myanmar+English)
Topics-Sun Geometry, Solar Cell Connection

Grid Connected Photovoltaic Power Systems 2(Myanmar+English)
Topics-Solar Electrical System Installation

Grid Connected Photovoltaic Power Systems 3(Myanmar+English)
Topics-Power Output from solar cell, Grid Connection

Grid Connected Photovoltaic Power Systems 4(Myanmar+English)
Topics-Solar Installation Inspection

Grid Connected Photovoltaic Power Systems 5(Myanmar+English)
Topics-Lightning & Surge Protection, Metering

Day 14 Part 1
RE002- Grid Connected Photovoltaic Power Systems-Electrical
www.highlightcomputer.com/Day 14-Part 1-RE002- Grid Connected Photovoltaic Power Systems-Electrical.zip
Day 14 Part 1
RE002 Grid Connected PV system
RE 002 Part 1
Sun geometry 1
Daily irradiance 2, 9
Power output calculation 29, 31, 36
Pen circuit voltage 37,40,41,42,44
Inverter diagram 45,46,48,52,53
Grid protection 55, 56, 57, 58, 59
Lightening surge protection 62, 63
Net metering 64, 67, 68, Inspection& testing
73 PV array location 81, 82, 89, 90
PV power system 92,93,
Typical arrays 97,98,100,102,105,

Grid connected inverter 134,135,136,137,139,146

RE002 Part 2
Economy 16,20,23

RE007- Energy System Efficiency
Day 16 Part 1
Energy System Efficiency 1 (Myanmar+English)
Topics-Unit Energy, Energy used by day

Energy System Efficiency 2 (Myanmar+English)
Topics-Comparison of energy usage, Solar Farming

Energy System Efficiency 3 (Myanmar+English)
Topics-Regeneration, Combined Heat& Power

Energy System Efficiency 4 (Myanmar+English)
Topics-Heat Transfer, Energy Efficient Building Construction

Energy System Efficiency 5(Myanmar+English)
Topics-Energy Survey, Building Survey, Lighting Control
Day 16 Part 1
RE007- Energy System Efficiency
(Electrical)(Mechanical)

www.highlightcomputer.com/Day 16Part 1-RE007- Energy System Efficiency.zip

Day 16 Part 1
RE007 Energy Efficiency
Page 1,3,4,5,6 Energy Use Page 11
Water use Page 16
Comparison Page 19,20
Solar farming Page 21,25,26,27,30
Bulb efficiency Page 35,40,45,46
Regenerative braking Page 48, 49, 53
CHP Page 55, 57, 58
Efficient electricity use Page 61, 64, 66
Car Page 68,69,70,
Ventilation Page 76, 78, 86
Energy efficient office Page 92,93,94,95,110
Power system in energy efficiency Page 111
Survey Page 115,118,119,120
Building survey
Page 122, 123

ENG612-Risk Assessment Skills for Engineers (3 pt)

VIDEOS

Mgt 208 Safety Management

https://youtu.be/rPhf8Ngkd7w

Mgt 209 Risk Management

https://youtu.be/QawB3xDt2dc

LESSONS TO BE STUDIED & ASSIGNMENT

Mgt 208 Safety Management

www.mongroupsydney1.com/Mgt208SafetyManagement.pptx

Mgt 209 Risk Management

www.mongroupsydney1.com/Mgt209RiskManagement.zip

ASSIGNMENT

Do the exercises in the following link.

www.mongroupsydney1.com/AdvancedDiplomainManagementStudyGuide.pdf

Professional Diploma in Electrical Engineering (Electrical Power & Electronics)

(Prof Dip EPEC Engg)

www.highlightcomputer.com/profdipepec1.htm

Enrolment Link

http://www.emailmeform.com/builder/form/xE6omX3577z595GCb60

Objective

This course provides Electrical Power Knowledge to Electronics Engineers and Electronics Knowledge to Electrical Power Engineers.

Features of the course

It integrates Australian Electrical Engineering Training System Units (UEE07/UEE011)

It focuses on practical application aspects and the entire course is taught in English language by referring classroom lessons and videos that are used in Australian Electrical Engineering teaching classes.

Credit Points

It needs 120 credit points to complete this course. The credit transfer arrangements is as follows.

For Electrical Power Graduates

AGTI(EP)/BTech(EP)/BE(EP)----Credit Transfer of 60 points

Complete the following 20 subjects (Each 3 Credit points) Total= 60 Points

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Total Credit Points = 120 Points

List of Subjects	Australian Electrical Units
EPEC601 Electronics Power Supply EPEC602 Digital Electronics EPEC603 Amplifiers	UEENEEH011B UEENEEH012B UEENEEH013B
EPEC604 Single Phase Electronics Power Control EPEC605 Three Phases Electronics Power Control EPEC606 Analogue Electronics	UEENEEH025B UEENEEH026B UEENEEH045B
EPEC607 Process Control Systems	UEENEEI006B
EPEC608 Sinewaves & Solar Inverters	UEENEEK035C
EPEC609 Building Services Electrical & Mechanical Systems	UEENEEK041B
EPEC610 Electrical Workshops	Electrical Workshops (UEENEEE001/002/005/007/008)
EPEC611 Electrical Wiring	UEENEEG003/004/005/007/033/063
EPEC612 Electrical Risk Assessment	UEENEEE011C+E117B
EPEC613 Control Programming	UEENEED150/151B
EPEC614 Programmable Logic Controllers	UEENEEI150/151
EPEC615 Electronics Workshop	UEENEEH102B
EPEC626 Advanced Power System	UEENEEG037/38/39
BAE 604 Telecommunication Engineering	
BAE 602 Computer Network	
BAE 603 Software Engineering	
RE007 Energy System Efficiency	

For Electronics Graduates

AGTI(EC)BTech(Ec)/BE(EC)----Credit Transfer of 60 points

Complete the following 20 subjects (Each 3 Credit points) Total= 60 Points

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Total Credit Points = 120 Points

List of Subjects	Australian Electrical Units
EPEC616 Electromagnetism & Basic Machines	UEENEEG001/002/E029B
EPEC610 Electrical Workshops	Electrical Workshops (UEENEEE001/002/005/007/008)
EPEC611 Electrical Wiring	UEENEEG003/004/005/007/033/063
EPEC612 Electrical Risk Assessment	UEENEEE011C+E117B
EPEC617 Electrical Distribution	UEENEEG015B(AA)
EPEC618 Power System Protection	UEENEEG015B(AE)
EPEC619 Power System Operation	UEENEEG015B(AG)
EPEC620 Power Panel Design &	UEENEEA010
EPEC621 Three Phase Power Circuits & Fault Calculations	UEENEEG049B
EPEC622 Power Transformer	UEENEEG040B
EPEC623 Transmission Line	UEENEEG042B
EPEC624 Electrical Machines	UEENEEG043/44/45
EPEC625 Solar Electrical System	UEENEEK025B
RE007 Energy System Efficiency	
RE003- Solar and Thermal Energy Systems	
RE004- Energy Storage Systems	
EPEC626 Advanced Power System	UEENEEG037/38/39
BAE 404 Engineering Materials & Thermodynamics	
BAE 506 Power System Stability & Protection	
RE010-Engineering Materials	

Practicals (Trade Level)

Electrical Wiring

http://www.highlightcomputer.com/PracticalCourses.htm#j

Electrical Machine Winding

http://www.highlightcomputer.com/PracticalCourses.htm#k

Power Wiring

http://www.highlightcomputer.com/PracticalCourses.htm#l

Basic Electronics Communication

http://www.highlightcomputer.com/PracticalCourses.htm#m

Practicals (Professional Level)

http://www.filefactory.com/file/cf88135/n/Practical.zip

Enrolment Link

http://www.emailmeform.com/builder/form/xE6omX3577z595GCb60

Professional Diploma in Information Technology (Computer Networking)

Bachelor of Applied Science (Computer Networking) (63347)

Professional Diploma in ICT Engineering (Network)

Bachelor of Engineering (Computer Networking) (63348)

Professional Diploma in Information Technology (Computer Networking)

Bachelor of Applied Science (Computer Networking)

Pre-requisite- Advanced Diploma in Information Technology (Network) (Experience based) (60 Credits)

Self study

Professional 1-Core units (Each 5 credit points)

ICTN401-Computer Systems Architecture

ICTN402-Computer Networking

ICTN403-Cisco Networking

ICTN404- Home Networking

ICTN405- System and Network Administration

ICTN406- Wireless Communications and Networking

Professional 2-Elective units (Each 5 credit points)

Any six units to complete

ICTN501-Enterprise System Administration

ICTN502- Mobile and Wireless Network Security

ICTN503- Cisco Certified Entry Networking

ICTN504- Wireless Security

ICTN505- UNIX System Administration

ICTN506- Advanced Network Programming

ICTN507- Windows Server Administration

ICTN508- Enterprise Network Testing

Total 120 Credits

Professional Diploma in ICT Engineering (Network)

Bachelor of Engineering (Computer Networking)

Completion of Professional Diploma in IT (Computer Networking) (120 credits)+completion of the following units

BAE 401 Advanced Engineering Mathematics (3 credits)
BAE 402 Calculus (3 credits)

RE012a-Electrical Engineering Part 1(3 credits)

RE014-Electronics Control (3 credits)

BAE 604 Telecommunication Engineering (3 credits)

BAE 605 Engineering Management (3 credits)

BAE 608 Professional Engineer Engineering Competency Demonstration Report (2 credits)

Total 140 Credits

www.iqytechnicalcollege.com/ProfDipICTEnggBENetwork.pdf

Professional Diploma in Mechanical Engineering and Management

www.iqytechnicalcollege.com/ProfDipMechEnggMgtOutline.pdf

This program is mixture of Mechanical Engineering and Management. The graduates can either work as Mechanical Engineer or Project Manager

Advanced Diploma in Mechanical Engineering and Management

Advanced Diploma in Mechanical Engineering

30 Credit Points in Engineering units Each 2 Points
Maths 101 Engineering Mathematics
ME101 Applied Mathematics
ME106 Electrical Circuits
ME201 Introduction to Fluid Mechanic
ME103 Engineering Mechanics
ME107+ME102 Thermodynamics and Heat Transfer
ME108 Principle of Engines (Self Study)
ME203 Control Engineering
ME205 Manufacturing Processes and Materials (Self Study)
ME634 Pnuematics (Self Study)
ME334 Air-conditioning and Refrigeration (Self Study)
ME434 Mechatronics and Robotics (Self Study)
EE102+ME105 Electrical Workshop
ME305 Corrosion Protection (Self Study)
CE111 Drawing

30 Credit Points in Management units

Advanced Diploma in Management

Mgt 101 Management (4 pt)

Mgt 102 Performance Management (4 pt)

Mgt 103 Operation Management +Mgt 107 Industrial Risk Assessment

(4 pt)

ICT 104 Mgt 104 Program Project +BAE 508 Project Management

(6 pt)

Mgt 105 Quality Management (4 pt)

ICT 107 Business Information Systems (4 pt)

Mgt 108 Computer Application in Management (4 pt)

THS graduates will need to do self study in some mechanical units .

Advanced Diploma in Mechanical Engineering and Management will be completed

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Professional Diploma in Mechanical Engineering and Management

PART 1-Engineering (9 points)

Professional Diploma in Engineering (Year 3) (9 points for Engineering)

Complete BAE units by personal attendance and RE units by self study

1 BAE 401 Advanced Engineering Mathematics (2 pt)
2 BAE 402 Calculus (2 pt)
3 BAE 403 Engineering Mechanics (2 pt)
4 BAE 404 Engineering Materials & Thermodynamics (3 pt)

PART 2-Management (21 points)

Complete any 7 units at each 3 points

Complete

http://www.iqytechnicalcollege.com/advdipmgt.htm

Mgt 201 Customer Service Management

Mgt 202 Change Management

Mgt 203 Inventory & Budget Management

Mgt 204 Continuous Improvement Management

Mgt 205 Office Management

Mgt 206 Work-based Training Management

Mgt 207 Business Letter Writing

Mgt 208 Safety Management

Mgt 209 Risk Management

Mgt 210 Professional Development Management

Mgt 211 Leadership

Mgt 212 Preparing Portfolios

Mgt 213 Conflict Management

Professional Diploma in Mechanical Engineering & Management (Year 4) (30 points)

Professional Diploma in Mechanical Engineering

Complete 10 units at 30 Points

RE011a Civil and Mechanical Engineering (3 pt)

BAE606 Building Services Electrical and Mechanical Engineering(3 pt)

BAE314 Power Generation (3 pt)

BAE423 Fluid Mechanics(3 pt)

BAE512 Building Services Water Supply System (3 pt)

RE014 Electronics Control (3 pt)

BAE601 Computer Programming (3 pt)

BAE605 Management (3 pt)

BAE508 Project Management (3 pt)

BAE608 Engineering Competency Report (3 pt)

Professional Diploma in Mechanical Engineering and Management will be completed

Professional Diploma in Mechanical Engineering and Management

www.iqytechnicalcollege.com/ProfDipMechEnggMgtOutline.pdf

This program is mixture of Mechanical Engineering and Management. The graduates can either work as Mechanical Engineer or Project Manager

Advanced Diploma in Mechanical Engineering and Management

Advanced Diploma in Mechanical Engineering

30 Credit Points in Engineering units Each 2 Points
Maths 101 Engineering Mathematics
ME101 Applied Mathematics
ME106 Electrical Circuits
ME201 Introduction to Fluid Mechanic
ME103 Engineering Mechanics
ME107+ME102 Thermodynamics and Heat Transfer
ME108 Principle of Engines (Self Study)
ME203 Control Engineering
ME205 Manufacturing Processes and Materials (Self Study)
ME634 Pnuematics (Self Study)
ME334 Air-conditioning and Refrigeration (Self Study)
ME434 Mechatronics and Robotics (Self Study)
EE102+ME105 Electrical Workshop
ME305 Corrosion Protection (Self Study)
CE111 Drawing

30 Credit Points in Management units

Advanced Diploma in Management

Mgt 101 Management (4 pt)

Mgt 102 Performance Management (4 pt)

Mgt 103 Operation Management +Mgt 107 Industrial Risk Assessment

(4 pt)

ICT 104 Mgt 104 Program Project +BAE 508 Project Management

(6 pt)

Mgt 105 Quality Management (4 pt)

ICT 107 Business Information Systems (4 pt)

Mgt 108 Computer Application in Management (4 pt)

THS graduates will need to do self study in some mechanical units .

Advanced Diploma in Mechanical Engineering and Management will be completed

---

Professional Diploma in Mechanical Engineering and Management

PART 1-Engineering (9 points)

Professional Diploma in Engineering (Year 3) (9 points for Engineering)

Complete BAE units by personal attendance and RE units by self study

1 BAE 401 Advanced Engineering Mathematics (2 pt)
2 BAE 402 Calculus (2 pt)
3 BAE 403 Engineering Mechanics (2 pt)
4 BAE 404 Engineering Materials & Thermodynamics (3 pt)

PART 2-Management (21 points)

Complete any 7 units at each 3 points

Complete

http://www.iqytechnicalcollege.com/advdipmgt.htm

Mgt 201 Customer Service Management

Mgt 202 Change Management

Mgt 203 Inventory & Budget Management

Mgt 204 Continuous Improvement Management

Mgt 205 Office Management

Mgt 206 Work-based Training Management

Mgt 207 Business Letter Writing

Mgt 208 Safety Management

Mgt 209 Risk Management

Mgt 210 Professional Development Management

Mgt 211 Leadership

Mgt 212 Preparing Portfolios

Mgt 213 Conflict Management

Professional Diploma in Mechanical Engineering & Management (Year 4) (30 points)

Professional Diploma in Mechanical Engineering

Complete 10 units at 30 Points

RE011a Civil and Mechanical Engineering (3 pt)

BAE606 Building Services Electrical and Mechanical Engineering(3 pt)

BAE314 Power Generation (3 pt)

BAE423 Fluid Mechanics(3 pt)

BAE512 Building Services Water Supply System (3 pt)

RE014 Electronics Control (3 pt)

BAE601 Computer Programming (3 pt)

BAE605 Management (3 pt)

BAE508 Project Management (3 pt)

BAE608 Engineering Competency Report (3 pt)

Professional Diploma in Mechanical Engineering and Management will be completed

Professional Diploma in Metallurgical & Materials Engineering

Stage 1- Complete Advanced Diploma in Mechanical Engineering & Year 3 Common course of Professional Diploma in Mechanical Engineering Studies

(Guided study to complete Advanced Diploma in Mechanical Engineering PLUS up to Year 3 of Professional Diploma)

Stage 2-Study the following textbooks

Year 4 BE (Metallurgy& Materials)

(Self study with presentation of study progress report to complete Professional Diploma in Metallurgical & Materials Engineering- Assessment Fees will be charged only after the student can submit the report for first textbook)

Met 401 Mechanical Properties of Metals
Met 402Metallurgical Engineering Alloys
Met 403Metallurgy Principle
Met 404Metallurgy
Met 405Powdered Metallurgy

Year 5 BE (Metallurgy & Materials) common to BE (Minerals Extraction & Explosion Protection)

Met501 Mechanical Estimating
Met502 Mechanical Properties of Metals

Met503 Metallurgy

Met504 Engineered Metals

Met505 Metallurgical Alloys

Met507 Stress Assessment in Metallurgy

Met508 Metallic Materials

Year 6 BE (Metallurgy & Materials) common to BE (Minerals Extraction & Explosion Protection)

Met601 Metallurgical Processing

Met602 Machineries Failure Analysis

Met603 Materials Selection in Mechanical Design

Met604 Strain Testing

Met605 Applied Metallurgy

Met606 Metals Extraction

Additional units

Met608 Corrosion Prevention

Study Method & Assessment

The students will need to read the reference materials provided in folder of each unit & write the report on their study for each unit.

The report should contain

- Summary of knowledge acquired in the unit
- Practical methods related to assessment, safe working, protection, technical data, equipments utilized in hazardous areas
- Practical applications in work place
- Specific applications in the area of your choice
- Reference guides etc

Each report should be Arial 11 fonts with 10 to 20 pages written in own words by using English..

Insert the appropriate diagrams & tables, formula and data related to information.

Professional Diploma in Mineral Extraction & Explosion Protection Engineering (Combined course of Mining & Petroleum)

Stage 1- Complete Advanced Diploma in Mechanical Engineering & Year 3 Common course of Professional Diploma in Mechanical Engineering Studies

(Guided study to complete Advanced Diploma in Mechanical Engineering PLUS up to Year 3 of Professional Diploma)

Stage 2-Study the following textbooks

(Self study with presentation of study progress report to complete Professional Diploma in Metallurgical & Materials Engineering- Assessment Fees will be charged only after the student can submit the report for first textbook)

Year 3 BE (Mineral Extraction& Explosion Protection)

PE 21015	Properties of Reservoir Rocks and Fluids
PE 21002	Drilling Fluids
Geol 21002	Petroleum Geology
ChE 31013	Chemical Engg. Thermodynamics
PE 31012	Drilling Engg.
PE 31016	Formation Evaluation
PE 31013	Production Engineering

Year 4 BE (Mineral Extraction& Explosion Protection)

PE 41014	Natural Gas Engg.
PE 41022	Applied Drilling Engg.
PE 41023	Well Completion and Servicing
PE 41035	Applied Reservoir Engg.

Year 4 BE (Minerals Extraction & Explosion Protection) common to BE (Metallurgy & Materials)

Min501 Mechanical Estimating/ Met501 Mechanical Estimating

Min502 Mechanical Properties of Metals/ Met502 Mechanical Properties of Metals

Min503 Metallurgy/ Met503 Metallurgy

Min504 Engineered Metals/ Met504 Engineered Metals

Min505 Metallurgical Alloys/Met505 Metallurgical Alloys

Min507 Stress Assessment in Metallurgy/ Met507 Stress Assessment in Metallurgy

Min508 Metallic Materials/ Met508 Metallic Materials

Year 5 BE (Minerals Extraction & Explosion Protection) common to BE (Metallurgy & Materials)

Min601 Metallurgical Processing/ Met601 Metallurgical Processing

Min602 Machineries Failure Analysis/ Met602 Machineries Failure Analysis

Min603 Materials Selection in Mechanical Design/ Met603 Materials Selection in Mechanical Design

Min604 Strain Testing/ Met604 Strain Testing

Min605 Applied Metallurgy/ Met605 Applied Metallurgy

Min606 Metals Extraction/ Met606 Metals Extraction

<u>Additional Unit</u>

Met607 Explosive Engineering

ADDITIONAL STUDY

Year 6 BE (Minerals Extraction & Explosion Protection)

Explosion Protection

Lessons+ References

Professional Diploma in Hazardous Safety Engineering

www.highlightcomputer.com/profdiphazardous.htm

Professional Diploma in Hazardous Safety Engineering

Course Objective

This course provides the information and knowledge related to safely working in hazardous areas, safe working knowledge, safety protection equipments, systems and methods, auditing the safety requirements of hazardous area engineering works such as mining, petroleum, chemical plants ,civil ,electrical and mechanical engineering

Course Outline

It consists of 8 units with each 5 credits.

BAE 631E Maintenance & Repair Works in Hazardous Areas

BAE 632E Electrical Wiring in Hazardous Areas

BAE 633E Hazardous Area Safety Audits

BAE 634 Explosion Protection

BAE 635E Testing in Hazardous Areas

BAE 636 E Hazardous Area Inspection

BAE 637E Hazardous Chemical Management

BAE 638E Environmental Engineering in Hazardous Areas

Study Method & Assessment

The students will need to read the reference materials provided in folder of each unit & write the report on their study for each unit.

The report should contain

- Summary of knowledge acquired in the unit
- Practical methods related to assessment, safe working, protection, technical data, equipments utilized in hazardous areas
- Practical applications in work place
- Specific applications in the area of your choice
- Reference guides etc

Each report should be Arial 11 fonts with 10 to 20 pages written in own words by using English..

Insert the appropriate diagrams & tables, formula and data related to information.

Professional Diploma in Technical Teaching (Training, Assessment & Learning Management)

www.highlightcomputer.com/ProfDipTechTchg.pdf

Objective of the course

This Professional Diploma in Technical Teaching (Training, Assessment & Learning Management) is designed as Teachers Education Professional Development for teachers in Government Technical Colleges , Technological Universities and other Vocational Education and Training Institutions in Myanmar to upgrade their skills and knowledge in training and assessment, curriculum design and development, management of technical training institutions, adult and vocational education and training ,assessment validation and current accreditation rules and requirements of Myanmar Engineering Council as well as current training and assessment practices of overseas industrialized countries.

Learning Outcomes

After completion of the levels of the training programs, the students should be able to

- Understand adult learning principles in technical education and training contexts
- Apply the skills in training, assessment, course development, curriculum development, learning management and management of technical training institutions.
- Understand the accreditation requirements of Myanmar Engineering Council in accredited engineer, technologist and technician education & prepare for the compliance processes.
- Understand the technology, science and mathematics teaching & educational pedagogies principles of outcome based education and effectively utilize them in the workplace
- Provide effective work-based learning & career development for the working people in industries and apply the various ways of assessing the competences

Components of the course

- Educational theories ,educational technology, teaching and learning, teaching and measuring.
- Lesson planning, interpreting curriculums, class room management, instruction and assessment design, training principle, competency based training and assessment integrated the competencies of Australian Training and Assessment (TAE40110) course
- Management of educational establishment in line with the accreditation requirements of Myanmar Engineering Council by customizing the competencies in Australian Vocational Education and Training Diploma (TAE50111) to be relevant to the requirements of Myanmar Vocational Education and Training .
- Postgraduate level educational knowledge related to Learning Technology, Technology in classrooms, educational leadership, leadership and change management , computer supported learning and distance education,
- Teaching practicum preparation at different levels of training

Study Areas & Levels of Training

Level 1-Educational Theories , Teaching Pedagogies & Training and Assessment Practice

Part (1) Educational Theoretical Subjects

- ED 101 Theory of Education
- ED 102 Education Technology
- ED 103 Teaching Practice
- ED 104 Lesson Planning
- ED 105 Principle of Learning
- ED 106 Interpreting Curriculums
- ED 107 Teaching & Learning
- ED 201 Class Room Management & Teaching

Part (2A) Basic Teaching Practicum Preparation

ED101P-Teaching Support

ED102P- Application of Information Technology in School /Vocational Education

ED103P- Classroom Management

ED104P- Teaching Portfolio

ED105P- Inclusive Teaching

ED106P- Subject Area Knowledge

ED107P- Theory of Education, Educational Technology & Teaching Practice

ED107PA-Theory of Education

ED107PB-Education Technology

ED107PC-Teaching Practice

ED107PD-Lesson Planning

ED108P- Curriculum Study , Teaching & Learning

ED108PA-Principle of Learning

ED108PB-Interpreting Curriculums

ED108PC-Teaching & Learning

Part (2B) Training &Assessment Practice (Certificate IV in Training & Assessment TAE40110)

- ED111P Learning Program Design & Development Practice

  (TAEDES401A Design and develop learning programs)

- ED112P Assessing the needs of trainees

  (TAEDES402A Use training packages and accredited courses to meet client needs Delivery)

- ED113P Group based learning

  (TAEDEL401A Plan, organise and deliver group-based learning)

- ED114P Workplace Assessment

  (TAEDEL402A Plan, organise and facilitate learning in the workplace Assessment)

- ED115P Assessment Planning

  (TAEASS401B Plan assessment activities and processes)

- ED116P Competency Assessment

  (TAEASS402B Assess competence)

- ED117P Assessment Validation

  (TAEASS403B Participate in assessment validation)

- ED118P Work skills Instruction

  (TAEDEL301A Provide work skill instruction)

- ED119P Educational Presentation

  (BSBCMM401A Make a presentation)(TAEASS301B Contribute to assessment

  Level 2-Adult Vocational Education

  Part (1) Adult Vocational Education Theoretical Subjects

- ED 401 Adult Learning Technology

- ED 202 Curriculum & Design

- ED 205 Teaching & Measuring

- ED 206 Designing Instructions & Assessment

- ED 405 Training Principle

  Part (2) Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111)

- ED201P-Advanced Assessment Practice
  (TAEASS501A: Provide advanced assessment practice)

- ED202P-Assessment Development
  (TAEASS502B: Design and develop assessment tools)
- ED203P-Training Facilitation

  (TAEDEL502A: Provide advanced facilitation practice)
- ED204P-Learning Strategies

  (TAEDES501A: Design and develop learning strategies)
- ED205P- Language Literacy & Numeracy

  (TAELLN401A: Address adult language, literacy and numeracy skills)
- ED206P-Continuing Professional Development
  (TAEPDD501A: Maintain and enhance professional practice)
- ED207P Learning Resources Design & Development

  (TAEDES502A: Design and develop learning resources)
- ED208P Organizational Training Needs Analysis

  (TAETAS501B: Undertake organisational training needs analysis)
- ED 404 Educational Research (Part 1)

  (TAERES501A: Apply research to training and assessment practice)
- ED209P- Training Program Evaluation

  (TAEDES505A: Evaluate a training program)

Level 3-Training Authorities Accreditation Compliances

Part (1) Educational Leadership Subjects

- ED 402 Educational Leadership
- ED 301 Educational Policy (Myanmar Engineering Council Accreditation Requirements)
- ED 308 Change Management
- ED309 Educational Communication
- ED 407 Learning Environment
- ED311 Outcome based Education

Part (2) Myanmar Engineering Council's Accreditation Compliance Practice

- ED301P- Curriculum design for accreditation compliance
- ED302P-Overall accreditation and compliance practice

Level 4-Specialized Teaching Areas

- ED 308 Computer Supported Learning & Distance Education
- ED 304 Maths Teaching
- ED 305 Science Teaching
- ED 306 Technology Teaching
- ED 404 Educational Research (Part 2)
- ED310 Learning Technology I & II
- ED312 Technology in Classrooms

RESOURCES

ASSESSMENT FOR THE SUBJECTS IN PART 1 OF THE LEVELS

The students will have to write 20 pages study report for each of the subjects outlined in the Part 1 of any level .

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, points, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of curriculum designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

The book references for the subjects can be downloaded from the following links by entering the given password.

Password- to be given

ASSESSMENT FOR THE SUBJECTS IN PART 2 OF THE LEVELS

Follow the specific assessment instruction provided for the units in Part 2 of the levels

Study Areas & Levels of Training

Level 1-Educational Theories , Teaching Pedagogies & Training and Assessment Practice

Part (1) Educational Theoretical Subjects

The students will have to write 20 pages study report for each of the subjects outlined in the Part 1 of any level .

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, points, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of curriculum designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

The book references for the subjects can be downloaded from the following links by entering the given password.

Password- to be given

- ED 101 Theory of Education

  http://www.filefactory.com/file/4fuby1dpqs9f/ED%20101%20Theory%20of%20Education.zip

- ED 102 Education Technology

  http://www.filefactory.com/file/1ghlzng7e0n3/ED%20102%20Education%20Technology.zip

- ED 103 Teaching Practice

  http://www.filefactory.com/file/1o732n0j46mf/ED%20103%20Teaching%20Practice.zip

- ED 104 Lesson Planning

  http://www.filefactory.com/file/4m30ym0ez37r/ED%20104%20Lesson%20Planning.zip

- ED 105 Principle of Learning

  http://www.filefactory.com/file/7660l6kjr8sx/ED%20105%20Principle%20of%20Learning.zip

- ED 106 Interpreting Curriculums

  http://www.filefactory.com/file/1h141zxbov8z/ED%20106%20Interpreting%20Curriculums.zip

- ED 107 Teaching & Learning

  http://www.filefactory.com/file/6u5o455lyqj7/ED%20107%20Teaching%20%26amp%3B%20Learning.zip

- ED 201 Class Room Management & Teaching

  http://www.filefactory.com/file/48gvqykksgiz/ED%20201%20Class%20Room%20Mgt%20%26amp%3B%20Teaching.zip

  Part (2A) Basic Teaching Practicum Preparation

Follow the specific assessment instruction provided for the units in Part 2 of the levels

ED101P-Teaching Support

ED102P- Application of Information Technology in School /Vocational Education

ED103P- Classroom Management

ED104P- Teaching Portfolio

ED105P- Inclusive Teaching

ED106P- Subject Area Knowledge

Certificate in Teaching Support+ Diploma in Teaching Practice+ Bachelor of Teaching+ Bachelor of Education (School & Vocational)
http://www.filefactory.com/file/4a5o50idxgvr/Diploma%20in%20Teaching%20Practice.pdf

ED107P- Theory of Education, Educational Technology & Teaching Practice

ED107PA-Theory of Education

ED107PB-Education Technology

ED107PC-Teaching Practice

ED107PD-Lesson Planning

ED108P- Curriculum Study , Teaching & Learning

ED108PA-Principle of Learning

ED108PB-Interpreting Curriculums

ED108PC-Teaching & Learning

ED 107 Lesson Slide 1 to 20 Mod.pdf (4.71MB)
http://www.filefactory.com/file/1w4faybri0p9/n/ED_107_Lesson_Slide_1_to_20_Mod.pdf

Download now by clicking the above link!

ED107 Lesson Slide 21 to 40.pdf (3.06MB)
http://www.filefactory.com/file/1ae111n3e1gl/n/ED107_Lesson_Slide_21_to_40.pdf
Download now!

ED107 Lesson Slide 41 to 60.pdf (3.27MB)
http://www.filefactory.com/file/4slgwynziwxz/n/ED107_Lesson_Slide_41_to_60.pdf
Download now!

ED107 Lesson Slide 61 to 80.pdf (3.22MB)
http://www.filefactory.com/file/1txrj08z5329/n/ED107_Lesson_Slide_61_to_80.pdf
Download now!

ED107 Lesson Slide 81 to 100.pdf (2.97MB)
http://www.filefactory.com/file/15p9vb74rljl/n/ED107_Lesson_Slide_81_to_100.pdf
Download now!

ED107 Lesson Slide 101 to 120.pdf (3.07MB)
http://www.filefactory.com/file/lxvcg3369i9/n/ED107_Lesson_Slide_101_to_120.pdf
Download now!

ED107 Lesson Slide 121 to 140.pdf (2.69MB)
http://www.filefactory.com/file/6h7bu8dsq7q7/n/ED107_Lesson_Slide_121_to_140.pdf
Download now!

ED107 Lesson Slide 141 to 160.pdf (2.57MB)
http://www.filefactory.com/file/6pxq45urnfyn/n/ED107_Lesson_Slide_141_to_160.pdf
Download now!

ED107 Lesson Slide 161 to 180.pdf (2.99MB)
http://www.filefactory.com/file/6srxl6iwl2o3/n/ED107_Lesson_Slide_161_to_180.pdf
Download now!

ED107 Lesson Slide 181 to 200.pdf (2.76MB)
http://www.filefactory.com/file/10d9wna6jr4r/n/ED107_Lesson_Slide_181_to_200.pdf
Download now!

ED107 Lesson Slide 201 to 220.pdf (2.86MB)
http://www.filefactory.com/file/3o4wea6j5uof/n/ED107_Lesson_Slide_201_to_220.pdf
Download now!

ED107 Lesson Slide 221 to 240.pdf (3.27MB)
http://www.filefactory.com/file/32bcquqzs1ll/n/ED107_Lesson_Slide_221_to_240.pdf
Download now!

ED107 Lesson Slide 241 to 260.pdf (2.83MB)
http://www.filefactory.com/file/p0y76lkvkjd/n/ED107_Lesson_Slide_241_to_260.pdf
Download now!

ED107 Lesson Slide 261 to 280.pdf (2.84MB)
http://www.filefactory.com/file/2kdx8ty4uj1d/n/ED107_Lesson_Slide_261_to_280.pdf
Download now!

ED107 Lesson Slide 281 to 304.pdf (3.78MB)
http://www.filefactory.com/file/1y06uzz0iaq1/n/ED107_Lesson_Slide_281_to_304.pdf
Download now!

ED 107 Exercises.pdf (2.3MB)
http://www.filefactory.com/file/1isf2cao4gxx/n/ED_107_Exercises.pdf
Download now!

ED 108 Curriculum Study , Teaching & Learning Lessons

ED108 Lesson Slide 1 to 20.pdf (2.37MB)
http://www.filefactory.com/file/6r5rg8bucgkx/n/ED108_Lesson_Slide_1_to_20.pdf
Download now!

ED108 Lesson Slide 21 to 40.pdf (2.69MB)
http://www.filefactory.com/file/1wxu981xeel/n/ED108_Lesson_Slide_21_to_40.pdf
Download now!

ED108 Lesson Slide 41 to 60.pdf (2.27MB)
http://www.filefactory.com/file/71av1by59uit/n/ED108_Lesson_Slide_41_to_60.pdf
Download now!

ED108 Lesson Slide 61 to 80.pdf (2.12MB)
http://www.filefactory.com/file/4qghmt89g2zr/n/ED108_Lesson_Slide_61_to_80.pdf
Download now!

ED108 Lesson Slide 81 to 100.pdf (2.22MB)
http://www.filefactory.com/file/11jmlg5ax3e1/n/ED108_Lesson_Slide_81_to_100.pdf
Download now!

ED108 Lesson Slide 101 to 120.pdf (2.57MB)
http://www.filefactory.com/file/67air98a9wpz/n/ED108_Lesson_Slide_101_to_120.pdf
Download now!

ED108 Lesson Slide 121 to 140.pdf (2.32MB)
http://www.filefactory.com/file/2fw5kwlelb03/n/ED108_Lesson_Slide_121_to_140.pdf
Download now!

ED108 Lesson Slide 141 to 168.pdf (2.7MB)
http://www.filefactory.com/file/5foiol6m9rwx/n/ED108_Lesson_Slide_141_to_168.pdf
Download now!

ED 108 Exercises.pdf (1.22MB)
http://www.filefactory.com/file/5o110j6pg6dz/n/ED_108_Exercises.pdf
Download now!

Part (2B) Training &Assessment Practice (Certificate IV in Training & Assessment TAE40110)

Follow the specific assessment instruction provided for the units in Part 2 of the levels

- ED111P Learning Program Design & Development Practice

  (TAEDES401A Design and develop learning programs)

- ED112P Assessing the needs of trainees

  (TAEDES402A Use training packages and accredited courses to meet client needs Delivery)

- ED113P Group based learning

  (TAEDEL401A Plan, organise and deliver group-based learning)

- ED114P Workplace Assessment

  (TAEDEL402A Plan, organise and facilitate learning in the workplace Assessment)

- ED115P Assessment Planning

  (TAEASS401B Plan assessment activities and processes)

- ED116P Competency Assessment

  (TAEASS402B Assess competence)

- ED117P Assessment Validation

  (TAEASS403B Participate in assessment validation)

- ED118P Work skills Instruction

  (TAEDEL301A Provide work skill instruction)

- ED119P Educational Presentation

  (BSBCMM401A Make a presentation)(TAEASS301B Contribute to assessment

RESOURCES FOR ABOVE UNITS

Working in Vocational Education & Assessment

http://www.filefactory.com/file/136bwooflstr/n/3_Assessment_Working_in_VET_zip

Preparing vocational teaching portfolios

http://www.filefactory.com/file/2l9iu8ptfk0t/n/8_Guides_for_preparing_VET_portfolios_zip

Learning , Facilitation & Teaching in Vocational Education and Training

http://www.filefactory.com/file/3b1d9kduz515/n/4_Learning_Facilitation_Teaching_in_VET_zip

Work-based Learning & Assessment

http://www.filefactory.com/file/5pef2h8dhav9/n/10_Workbased_Learning_amp_Assessment_2_zip

Learning Environment

http://www.filefactory.com/file/5l12qij9s67j/n/12_Learning_Environment_zip

Level 2-Adult Vocational Education

Part (1) Adult Vocational Education Theoretical Subjects

The students will have to write 20 pages study report for each of the subjects outlined in the Part 1 of any level .

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, points, key theory & practical application concepts

- Own idea on how to apply those concepts in real practical applications.
- Examples of curriculum designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

The book references for the subjects can be downloaded from the following links by entering the given password.

Password- to be given

- ED 401 Adult Learning Technology

  http://www.filefactory.com/file/68y4bd94ianb/ED%20401%20Adult%20Learning%20Technology.zip

- ED 202 Curriculum & Design

  http://www.filefactory.com/file/1jotv5d428j1/ED%20202%20Curriculum%20%26amp%3B%20Design.zip

- ED 205 Teaching & Measuring

  http://www.filefactory.com/file/4eu01ck2awl/ED%20205%20Teaching%20%26amp%3B%20Measuring.zip

- ED 206 Designing Instructions & Assessment

  http://www.filefactory.com/file/4dnh3r8wsd9t/ED%20206%20Designing%20Instructions%20%26amp%3B%20Assessment.zip

- ED 405 Training Principle

  http://www.filefactory.com/file/5qupttpxznin/ED%20405%20Training%20Principle.zip

Part (2) Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111)

Follow the specific assessment instruction provided for the units in Part 2 of the levels

- ED201P-Advanced Assessment Practice
  (TAEASS501A: Provide advanced assessment practice)
- ED202P-Assessment Development
  (TAEASS502B: Design and develop assessment tools)
- ED203P-Training Facilitation

  (TAEDEL502A: Provide advanced facilitation practice)
- ED204P-Learning Strategies

(TAEDES501A: Design and develop learning strategies)

- ED205P- Language Literacy & Numeracy

  (TAELLN401A: Address adult language, literacy and numeracy skills)

- ED206P-Continuing Professional Development
  (TAEPDD501A: Maintain and enhance professional practice)

- ED207P Learning Resources Design & Development

  (TAEDES502A: Design and develop learning resources)

- ED208P Organizational Training Needs Analysis

  (TAETAS501B: Undertake organisational training needs analysis)

- ED 404 Educational Research (Part 1)

  (TAERES501A: Apply research to training and assessment practice)

- ED209P- Training Program Evaluation

  (TAEDES505A: Evaluate a training program)

Vocational Education & Training Practice (Diploma in Vocational Education & Training TAE50111) Portfolio Guide

http://www.filefactory.com/file/rh0eb9n4sfn/TAE50111PortfolioGuide.pdf

SAMPLE PORTFOLIOS

Please note that the reference & example documents contained in the link of the portfolio can not be downloaded from the internet, they can only be available in DVDs that can be sent upon request.

The document is password protected. Password is needed and can be given upon request.

http://www.filefactory.com/file/3i8k0ls9peup/TAE50110_Diploma%20RPL%20Submission%20U%20Kyaw%20Naing.pdf

Level 3-Training Authorities Accreditation Compliances

Part (1) Educational Leadership Subjects

The students will have to write 20 pages study report for each of the subjects outlined in the Part 1 of any level .

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, points, key theory & practical application concepts

- Own idea on how to apply those concepts in real practical applications.

- Examples of curriculum designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

The book references for the subjects can be downloaded from the following links by entering the given password.

Password- to be given

- ED 402 Educational Leadership

  http://www.filefactory.com/file/68h2rewfq7jx/ED%20402%20Educational%20Leadership.zip

- ED 301 Educational Policy (Myanmar Engineering Council Accreditation Requirements)

  Registration Rules

  http://www.filefactory.com/file/yzxtm3a7z2b/06.%20Licensing%20%26amp%3B%20Registration%20Rules%20-%20Engineering%20-%20Myanmar%20-%20CCS%2068%20reduced.pdf

  Myanmar Assessment Statement

  http://www.filefactory.com/file/9adocfm4877/06.%20Myanmar%20Assessment%20Statement%20-%20%28ACPECC%2014%29.pdf

  Graduates Attributes

  http://www.filefactory.com/file/4r5z3i9uxw5p/1%20Graduate%20Attributes%20%26amp%3B%20Terminology.pptx

  Qualification Policy

  http://www.filefactory.com/file/69mj6zk64zj5/Policy%20%20Qualifications%20Policy%20POL11%20v4.PDF

  Regulations

  http://www.filefactory.com/file/65cxuftzoxmh/Regulations.pdf

  Engineers Australia References

  www.highlightcomputer.com/engineersaustraliareferences.htm

- ED 308 Change Management

  http://www.filefactory.com/file/4cxrjx86buot/n/9_Leadership_Change_Management_zip

- ED309 Educational Communication

  http://www.filefactory.com/file/6tbjy1omi7kz/n/1_Educational_Communication_zip

- ED 407 Learning Environment

  http://www.filefactory.com/file/31o7fw99ux7l/ED%20407%20Learning%20Environment.zip

- ED311 Outcome based Education

  http://www.filefactory.com/file/6sq2l3hmac3b/Final%20OBE%20Training%20at%20Myanmar%20July%202014.pptx

  Part (2) Myanmar Engineering Council's Accreditation Compliance Practice

- ED301P- Curriculum design for accreditation compliance

  http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf

  Example

  www.highlightcomputer.com/OverallProgramGeneral.pdf

- ED302P-Overall accreditation and compliance practice

  http://www.filefactory.com/file/2vyvpy64k4w3/Accredition%20Manual.pdf

  http://www.highlightcomputer.com/Accreditation.htm

  Preparation for self accreditation report

  http://www.filefactory.com/file/43x0yutpx31v/2%20SAR.pptx

  Engineering Accreditation Plan

  http://www.filefactory.com/file/2ynzo3fydckb/2015%20YTU%20First%20Workshop.pptx

  ASSIGNMENT

  Prepare the portfolios for your section/ department to comply with Myanmar Engineering Council's Accreditation Requirements.

Level 4-Specialized Teaching Areas

The students will have to write 20 pages study report for each of the subjects outlined in the Part 1 of any level .

The report needs to include

- Book review- Review on each chapter of the book highlighting the key concepts, points, key theory & practical application concepts
- Own idea on how to apply those concepts in real practical applications.
- Examples of curriculum designs that use the concepts & knowledge expressed in those books (If any)
- Your comment on each book

The book references for the subjects can be downloaded from the following links by entering the given password.

Password- to be given

- ED 308 Computer Supported Learning & Distance Education

  http://www.filefactory.com/file/4mdzrx52kl45/ED%20308%20Computer%20Supported%20Learning%20%26amp%3B%20Distance%20Education.zip

- ED 304 Maths Teaching

  http://www.filefactory.com/file/60ngdjnse60x/ED%20304%20Maths%20Teaching.zip

- ED 305 Science Teaching

  http://www.filefactory.com/file/4hqlf7r16xyf/ED%20305%20Science%20Teaching.zip

- ED 306 Technology Teaching

  http://www.filefactory.com/file/3crwj4pdyt7b/ED%20306%20Techology%20Teaching.zip

- ED 404 Educational Research (Part 2)

  http://www.filefactory.com/file/42pl9c8013ab/ED%20404%20Educational%20Research.zip

- ED310 Learning Technology I & II

  http://www.filefactory.com/file/3bsfz0ehba7z/n/5_Learning_Technology_1_zip

  http://www.filefactory.com/file/cvavvr9gonr/n/6_Learning_Technology_2_zip

- ED312 Technology in Classrooms

  http://www.filefactory.com/file/7jcivu232opx/n/7_Technology_in_classroom_zip

Professional Diploma in Hazardous Safety Engineering

Course Objective

This course provides the information and knowledge related to safely working in hazardous areas, safe working knowledge, safety protection equipments, systems and methods, auditing the safety requirements of hazardous area engineering works such as mining, petroleum, chemical plants ,civil ,electrical and mechanical engineering

Pre-requisite

Professional Diploma/ Bachelor degree in Engineering (Any discipline)

Course Outline

It consists of 8 units with each 5 credits.

BAE 631E Maintenance & Repair Works in Hazardous Areas

BAE 632E Electrical Wiring in Hazardous Areas

BAE 633E Hazardous Area Safety Audits

BAE 634E Explosion Protection

BAE 635E Testing in Hazardous Areas

BAE 636E Hazardous Area Inspection

BAE 637E Hazardous Chemical Management

BAE 638E Environmental Engineering in Hazardous Areas

Study Method & Assessment

The students will need to read the reference materials provided in folder of each unit & write the report on their study for each unit.

The report should contain

- Summary of knowledge acquired in the unit
- Practical methods related to assessment, safe working, protection, technical data, equipments utilized in hazardous areas
- Practical applications in work place
- Specific applications in the area of your choice
- Reference guides etc

Each report should be Arial 11 fonts with 10 to 20 pages written in own words by using English..

Insert the appropriate diagrams & tables, formula and data related to information.

Detailed Topics

BAE 631 Maintenance & Repair Works in Hazardous Areas

UEENEEM019A Attend to breakdowns in hazardous areas - coal mining

KS01-EM01

9A

Explosion protection, certification and techniques

Evidence shall show an understanding of Ex certification schemes and techniques to accepted Standards to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

- Purpose and scope of certification schemes.
- Schemes accepted in Australia and New Zealand.
- Schemes commonly used in countries other than Australia and New Zealand.
- Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).
- Typical situations where the flameproof explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Flameproof technique;
- The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).

 Typical situations where the Increased safety explosion-protection technique is used;

Actions or conditions that would void the protection provided the Increased safety technique;

 The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).

 Typical situations where the Non-sparking explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Non-sparking technique; and

 The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex ‘i’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex ‘i’) technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity

versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

- Typical situations where the Intrinsic safety explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Intrinsic safety;
- The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex 'p') explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex 'p') technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).
- Typical situations where the pressurization explosion-protection technique is used;
- Actions or conditions that would void the protection provided the pressurization technique;
- The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex 'tD') - explosion-protection technique encompassing:

The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

- Typical situations where the each dust explosion-protection technique is used;
- Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires)

UEENEEM020A Attend to breakdowns in hazardous areas - gas Atmospheres

KS01-EM020

A

Explosion protection, certification and techniques

Evidence shall show an understanding of Ex certification schemes and techniques to accepted Standards to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

 Purpose and scope of certification schemes.

 Schemes accepted in Australia and New Zealand.

 Schemes commonly used in countries other than Australia and New Zealand.

 Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).

 Typical situations where the flameproof explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Flameproof technique;

 The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).

 Typical situations where the Increased safety explosion-protection technique is used;

Actions or conditions that would void the protection provided the Increased safety technique;

 The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).

 Typical situations where the Non-sparking explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Non-sparking technique; and

 The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex ‘i’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex ‘i’) technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

 Typical situations where the Intrinsic safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Intrinsic safety;

 The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex ‘p’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex ‘p’) technique (Examples of characteristics

and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

- Typical situations where the pressurization explosion-protection technique is used;
- Actions or conditions that would void the protection provided the pressurization technique;
- The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex 'tD') - explosion-protection technique encompassing:
The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

- Typical situations where the each dust explosion-protection technique is used;
- Actions or conditions that would void the protection provided the each dust technique;
- The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

- The purposes of 'temperature classification' and 'gas grouping/apparatus grouping'.
- Compliance plate markings.
- Limitations of non-metallic or specific alloy enclosures.
- The purpose of conformity and certification/approval for equipment used in hazardous areas.
- Environmental conditions that may impact on explosion-protection techniques.
- The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex 'm'; oil-immersion Ex

‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

UEENEEM021A Attend to breakdowns in hazardous areas - dust Atmospheres

KS01-EM021

A

Explosion protection, certification and techniques

Evidence shall show an understanding of Ex certification schemes and techniques to accepted Standards to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

 Purpose and scope of certification schemes.

 Schemes accepted in Australia and New Zealand.

 Schemes commonly used in countries other than Australia and New Zealand.

 Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).

 Typical situations where the flameproof explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Flameproof

technique;

 The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).

 Typical situations where the Increased safety explosion-protection technique is used;

Actions or conditions that would void the protection provided the Increased safety technique;

 The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).

 Typical situations where the Non-sparking explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Non-sparking technique; and

 The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex ‘i’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex ‘i’) technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

 Typical situations where the Intrinsic safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Intrinsic safety;

 The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex ‘p’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex ‘p’) technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

 Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

UEENEEM022A Attend to breakdowns in hazardous areas – pressurisation

KS01-EM02

2A

Explosion protection, certification and techniques

Evidence shall show an understanding of Ex certification schemes and techniques to accepted Standards to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

 Purpose and scope of certification schemes.

 Schemes accepted in Australia and New Zealand.

 Schemes commonly used in countries other than Australia and New Zealand.

 Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).

 Typical situations where the flameproof explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Flameproof technique;

 The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).

 Typical situations where the Increased safety explosion-protection technique is used;

Actions or conditions that would void the protection provided the Increased safety technique;

 The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).

 Typical situations where the Non-sparking explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Non-sparking technique; and

 The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex ‘i’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex ‘i’) technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

 Typical situations where the Intrinsic safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Intrinsic safety;

 The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex ‘p’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex ‘p’) technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

 Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

UEENEEM027A Maintain equipment in hazardous areas - coal mining

KS01-EM027

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Explosion protection installation and maintenance requirements

Evidence shall show an understanding of explosion protection installation and maintenance requirements to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

 Purpose and scope of certification schemes.

 Schemes accepted in Australia and New Zealand.

 Schemes commonly used in countries other than Australia and New Zealand.

 Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).

 Typical situations where the flameproof explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Flameproof technique;

 The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).

 Typical situations where the Increased safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Increased safety technique;

 The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).

 Typical situations where the Non-sparking explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Non-sparking technique; and

 The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex ‘i’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex ‘i’) technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

 Typical situations where the Intrinsic safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Intrinsic safety;

 The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex ‘p’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex ‘p’) technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

 Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design

features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of 'temperature classification' and 'gas grouping/apparatus grouping'.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex 'm'; oil-immersion Ex 'o'; powder-filling Ex 'q', ventilation Ex 'v' and special protection Ex 's').

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

T9 Preparation to install and maintain explosion-protected equipment in hazardous areas encompassing:

 OHS procedures to be followed when working in a hazardous area;

the significance of information provided on the certification documentation and schedules for a given item of explosion-protected equipment;

 the typical contents of a verification dossier and their purpose; and

 limitations in the use of tools and testing devices in hazardous areas.

T10 The relationship between explosion-protected equipment, their certification documents and required locations given in specifications and layout drawings and/or written instructions encompassing:

 the purpose of markings on the compliance plate and certification documents for a given item of explosion-protected equipment;

 matching explosion-protected equipment with certification documents and the equipment specified for an installation; and

 the location the items of explosion-protected equipment for an installation from specifications and layout drawings and/or instructions.

T11 Installation Standards and requirements applicable to hazardous encompassing:

 the wiring systems permitted and not permitted in or above hazardous areas;

 equipment not permitted in or above hazardous areas;

 the regulations and Standards to which explosion-protected equipment and wiring must be installed in a hazardous area and how these are applied; and

 the documentation required as a record of the installation process, including certification documentation.

T12 Maintenance procedures in hazardous areas that will ensure the integrity of the explosion-protection technique encompassing:

 the purpose of a maintenance schedule;

 the purpose and extent of ‘close’, ‘sample’ and ‘periodic’ inspections;

 the features of each explosion-protection techniques that should be included in a maintenance schedule;

 the impact of environmental conditions on explosion-protected equipment, including corrosion and frequency of maintenance;

 the documentation requirements for recording the maintenance process and

results;

 the use of Standards in determining the requirements with which the design of explosion-protected apparatus shall comply.

T13 Cable termination types suitable for use in hazardous areas encompassing:

 explosion protection features of cable terminations devices.

 selecting compliant cable termination devices.

T14 Terminating cables suitable for use in hazardous areas encompassing:

 installing conduit systems, where applicable, including seals to meet hazardous areas requirements. (Gases only.)

 terminating a cable with a barrier gland. (Gases only.)

 terminating a multipair, SWA, overall screened, individual screened cable into an enclosure.

 testing termination/connections of installed cables/circuits.

UEENEEM028A Maintain equipment in hazardous areas - gas Atmospheres

KS01-EM028

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Explosion protection installation and maintenance requirements

Evidence shall show an understanding of explosion protection installation and maintenance requirements to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

 Purpose and scope of certification schemes.

 Schemes accepted in Australia and New Zealand.

 Schemes commonly used in countries other than Australia and New Zealand.

 Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).

 Typical situations where the flameproof explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Flameproof technique;

 The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).

 Typical situations where the Increased safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Increased safety technique;

 The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted

breathing).

- Typical situations where the Non-sparking explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Non-sparking technique; and
- The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex 'i') explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex 'i') technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).
- Typical situations where the Intrinsic safety explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Intrinsic safety;
- The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex 'p') explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex 'p') technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).
- Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or

drain wires).

T9 Preparation to install and maintain explosion-protected equipment in hazardous areas encompassing:

- OHS procedures to be followed when working in a hazardous area;

the significance of information provided on the certification documentation and schedules for a given item of explosion-protected equipment;

- the typical contents of a verification dossier and their purpose; and
- limitations in the use of tools and testing devices in hazardous areas.

T10 The relationship between explosion-protected equipment, their certification documents and required locations given in specifications and layout drawings and/or written instructions encompassing:

- the purpose of markings on the compliance plate and certification documents for a given item of explosion-protected equipment;
- matching explosion-protected equipment with certification documents and the equipment specified for an installation; and
- the location the items of explosion-protected equipment for an installation from specifications and layout drawings and/or instructions.

T11 Installation Standards and requirements applicable to hazardous encompassing:

- the wiring systems permitted and not permitted in or above hazardous areas;
- equipment not permitted in or above hazardous areas;
- the regulations and Standards to which explosion-protected equipment and wiring must be installed in a hazardous area and how these are applied; and
- the documentation required as a record of the installation process, including certification documentation.

T12 Maintenance procedures in hazardous areas that will ensure the integrity of the explosion-protection technique encompassing:

 the purpose of a maintenance schedule;

 the purpose and extent of ‘close’, ‘sample’ and ‘periodic’ inspections;

 the features of each explosion-protection techniques that should be included in a maintenance schedule;

 the impact of environmental conditions on explosion-protected equipment, including corrosion and frequency of maintenance;

 the documentation requirements for recording the maintenance process and results;

 the use of Standards in determining the requirements with which the design of explosion-protected apparatus shall comply.

T13 Cable termination types suitable for use in hazardous areas encompassing:

 explosion protection features of cable terminations devices.

 selecting compliant cable termination devices.

T14 Terminating cables suitable for use in hazardous areas encompassing:

 installing conduit systems, where applicable, including seals to meet hazardous areas requirements. (Gases only.)

 terminating a cable with a barrier gland. (Gases only.)

 terminating a multipair, SWA, overall screened, individual screened cable into an enclosure.

 testing termination/connections of installed cables/circuits.

UEENEEM029A Maintain equipment in hazardous areas - dust Atmospheres

KS01-EM029

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Explosion protection installation and maintenance requirements

Evidence shall show an understanding of explosion protection installation and maintenance requirements to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

- Purpose and scope of certification schemes.
- Schemes accepted in Australia and New Zealand.
- Schemes commonly used in countries other than Australia and New Zealand.
- Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).

Typical situations where the flameproof explosion-protection technique is used;

- Actions or conditions that would void the protection provided the Flameproof technique;
- The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).
- Typical situations where the Increased safety explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Increased

safety technique;

 The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).

 Typical situations where the Non-sparking explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Non-sparking technique; and

 The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex ‘i’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex ‘i’) technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

 Typical situations where the Intrinsic safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Intrinsic safety;

 The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex ‘p’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex ‘p’) technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

 Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

T9 Preparation to install and maintain explosion-protected equipment in hazardous areas encompassing:

 OHS procedures to be followed when working in a hazardous area;

the significance of information provided on the certification documentation and schedules for a given item of explosion-protected equipment;

 the typical contents of a verification dossier and their purpose; and

 limitations in the use of tools and testing devices in hazardous areas.

T10 The relationship between explosion-protected equipment, their certification documents and required locations given in specifications and layout drawings and/or written instructions encompassing:

 the purpose of markings on the compliance plate and certification documents for a given item of explosion-protected equipment;

 matching explosion-protected equipment with certification documents and the equipment specified for an installation; and

 the location the items of explosion-protected equipment for an installation from specifications and layout drawings and/or instructions.

T11 Installation Standards and requirements applicable to hazardous encompassing:

 the wiring systems permitted and not permitted in or above hazardous areas;

 equipment not permitted in or above hazardous areas;

 the regulations and Standards to which explosion-protected equipment and wiring must be installed in a hazardous area and how these are applied; and

 the documentation required as a record of the installation process, including certification documentation.

T12 Maintenance procedures in hazardous areas that will ensure the integrity of the explosion-protection technique encompassing:

 the purpose of a maintenance schedule;

 the purpose and extent of 'close', 'sample' and 'periodic' inspections;

 the features of each explosion-protection techniques that should be included in a maintenance schedule;

 the impact of environmental conditions on explosion-protected equipment, including corrosion and frequency of maintenance;

 the documentation requirements for recording the maintenance process and results;

 the use of Standards in determining the requirements with which the design of explosion-protected apparatus shall comply.

T13 Cable termination types suitable for use in hazardous areas encompassing:

 explosion protection features of cable terminations devices.

 selecting compliant cable termination devices.

T14 Terminating cables suitable for use in hazardous areas encompassing:

 installing conduit systems, where applicable, including seals to meet hazardous areas requirements. (Gases only.)

 terminating a cable with a barrier gland. (Gases only.)

 terminating a multipair, SWA, overall screened, individual screened cable into an enclosure.

 testing termination/connections of installed cables/circuits.

UEENEEM030A Maintain equipment in hazardous areas – pressurisation

KS01-EM030A Explosion protection installation and maintenance requirements

Evidence shall show an understanding of explosion protection installation and maintenance requirements to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

- Purpose and scope of certification schemes.
- Schemes accepted in Australia and New Zealand.
- Schemes commonly used in countries other than Australia and New Zealand.
- Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex 'd') explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex 'd') technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).
- Typical situations where the flameproof explosion-protection technique is used;

Actions or conditions that would void the protection provided the Flameproof technique;

- The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex 'e') explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex 'e') technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance

distances, absence of sparking contacts and enclosure entries).

 Typical situations where the Increased safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Increased safety technique;

 The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).

 Typical situations where the Non-sparking explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Non-sparking technique; and

 The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex ‘i’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex ‘i’) technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

 Typical situations where the Intrinsic safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Intrinsic safety;

 The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

REQUIRED SKILLS AND KNOWLEDGE

T6 Pressurization (Ex 'p') explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex 'p') technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

 Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex 'tD') - explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of 'temperature classification' and 'gas grouping/apparatus

grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

T9 Preparation to install and maintain explosion-protected equipment in hazardous areas encompassing:

 OHS procedures to be followed when working in a hazardous area;

 the significance of information provided on the certification documentation and schedules for a given item of explosion-protected equipment;

 the typical contents of a verification dossier and their purpose; and

 limitations in the use of tools and testing devices in hazardous areas.

T10 The relationship between explosion-protected equipment, their certification documents and required locations given in specifications and layout drawings and/or written instructions encompassing:

 the purpose of markings on the compliance plate and certification documents for a given item of explosion-protected equipment;

 matching explosion-protected equipment with certification documents and the equipment specified for an installation; and

 the location the items of explosion-protected equipment for an installation from specifications and layout drawings and/or instructions.

T11 Installation Standards and requirements applicable to hazardous encompassing:

 the wiring systems permitted and not permitted in or above hazardous areas;

 equipment not permitted in or above hazardous areas;

 the regulations and Standards to which explosion-protected equipment and wiring must be installed in a hazardous area and how these are applied; and

 the documentation required as a record of the installation process, including certification documentation.

T12 Maintenance procedures in hazardous areas that will ensure the integrity of the explosion-protection technique encompassing:

 the purpose of a maintenance schedule;

 the purpose and extent of 'close', 'sample' and 'periodic' inspections;

 the features of each explosion-protection techniques that should be included in a maintenance schedule;

 the impact of environmental conditions on explosion-protected equipment, including corrosion and frequency of maintenance;

 the documentation requirements for recording the maintenance process and results;

 the use of Standards in determining the requirements with which the design of explosion-protected apparatus shall comply.

T13 Cable termination types suitable for use in hazardous areas encompassing:

 explosion protection features of cable terminations devices.

 selecting compliant cable termination devices.

T14 Terminating cables suitable for use in hazardous areas encompassing:

 installing conduit systems, where applicable, including seals to meet hazardous

areas requirements. (Gases only.)

terminating a cable with a barrier gland. (Gases only.)

 terminating a multipair, SWA, overall screened, individual screened cable into

an enclosure.

 testing termination/connections of installed cables/circuits.

UEENEEM047A Develop and manage maintenance programs for

hazardous areas electrical equipment - coal mining

KS01-EM047

A

Hazardous areas maintenance management

Evidence shall show an understanding of hazardous areas maintenance management to

an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

 Purpose and scope of certification schemes.

 Schemes accepted in Australia and New Zealand.

 Schemes commonly used in countries other than Australia and New Zealand.

 Processes for having equipment certified under the acceptable Ex schemes —

scheme procedures; quality management requirements; conformance testing

and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits

protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics

and design features are flame paths, integrity under pressure, pressure piling,

and enclosure entries).

 Typical situations where the flameproof explosion-protection technique is

used;

 Actions or conditions that would void the protection provided the Flameproof

technique;

 The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).

 Typical situations where the Increased safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Increased safety technique;

 The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).

 Typical situations where the Non-sparking explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Non-sparking technique; and

 The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex ‘i’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex ‘i’) technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

 Typical situations where the Intrinsic safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Intrinsic safety;

 The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex ‘p’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex ‘p’) technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

 Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of 'temperature classification' and 'gas grouping/apparatus grouping'.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex 'm'; oil-immersion Ex 'o'; powder-filling Ex 'q', ventilation Ex 'v' and special protection Ex 's').

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

T9 Maintenance procedures in hazardous areas that will ensure the integrity of the explosion-protection technique encompassing:

 the purpose of a maintenance schedule;

 the purpose and extent of 'close', 'sample' and 'periodic' inspections;

 the features of each explosion-protection techniques that should be included in a maintenance schedule;

 the impact of environmental conditions on explosion-protected equipment,

including corrosion and frequency of maintenance;

 the documentation requirements for recording the maintenance process and results; and

 the use of Standards in determining the requirements with which the design of explosion-protected apparatus shall comply.

T10 The responsibilities of a person managing activities or a site related to a hazardous area, encompassing:

 OHS procedures that are to be established;

 responsibilities for ensuring that a hazardous area is safe; and

 responsibilities and processes for establishing and maintaining a verification dossier.

T11 Explosion-protection strategies in relation to a hazardous area, encompassing:

 the process of classifying a hazardous area;

 various ways in which electrical systems /apparatus can be treated to prevent them from becoming an ignition source; and

 the cost of the different ways of treating electrical systems/apparatus associated with hazardous areas.

T12 Requirements for the maintenance of electrical systems associated with hazardous areas, encompassing:

 the type and grades of inspection of hazardous areas;

 maintenance programs for electrical explosion-protected systems/apparatus;

And documentation requirements associated with maintenance procedures.

BAE 632 Electrical Wiring in Hazardous Areas

UEENEEM023A Install explosion-protected equipment and wiring systems

- coal mining

KS01-EM023

A

Explosion protection installation and maintenance requirements

Evidence shall show an understanding of explosion protection installation and maintenance requirements to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

- Purpose and scope of certification schemes.
- Schemes accepted in Australia and New Zealand.
- Schemes commonly used in countries other than Australia and New Zealand.
- Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).
- Typical situations where the flameproof explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Flameproof technique;
- The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).

 Typical situations where the Increased safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Increased safety technique;

 The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex 'n') explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex 'n') technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).

 Typical situations where the Non-sparking explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Non-sparking technique; and

 The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex 'i') explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex 'i') technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

 Typical situations where the Intrinsic safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Intrinsic

safety;

 The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex ‘p’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex ‘p’) technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

 Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

T9 Preparation to install and maintain explosion-protected equipment in hazardous areas encompassing:

 OHS procedures to be followed when working in a hazardous area;

 the significance of information provided on the certification documentation and schedules for a given item of explosion-protected equipment;

 the typical contents of a verification dossier and their purpose; and

 limitations in the use of tools and testing devices in hazardous areas.

T10 The relationship between explosion-protected equipment, their certification documents and required locations given in specifications and layout drawings and/or written instructions encompassing:

 the purpose of markings on the compliance plate and certification documents for a given item of explosion-protected equipment;

 matching explosion-protected equipment with certification documents and the equipment specified for an installation; and

 the location the items of explosion-protected equipment for an installation from specifications and layout drawings and/or instructions.

T11 Installation Standards and requirements applicable to hazardous encompassing:

- the wiring systems permitted and not permitted in or above hazardous areas;
- equipment not permitted in or above hazardous areas;
- the regulations and Standards to which explosion-protected equipment and wiring must be installed in a hazardous area and how these are applied; and
- the documentation required as a record of the installation process, including certification documentation.

T12 Maintenance procedures in hazardous areas that will ensure the integrity of the explosion-protection technique encompassing:

- the purpose of a maintenance schedule;
- the purpose and extent of ‘close’, ‘sample’ and ‘periodic’ inspections;
- the features of each explosion-protection techniques that should be included in a maintenance schedule;
- the impact of environmental conditions on explosion-protected equipment, including corrosion and frequency of maintenance;
- the documentation requirements for recording the maintenance process and results;
- the use of Standards in determining the requirements with which the design of explosion-protected apparatus shall comply.

T13 Cable termination types suitable for use in hazardous areas encompassing:

- explosion protection features of cable terminations devices.
- selecting compliant cable termination devices.

T14 Terminating cables suitable for use in hazardous areas encompassing:

- installing conduit systems, where applicable, including seals to meet hazardous areas requirements. (Gases only.)
- terminating a cable with a barrier gland. (Gases only.)

 terminating a multipair, SWA, overall screened, individual screened cable into an enclosure.

 testing termination/connections of installed cables/circuits.

UEENEEM025A Install explosion-protected equipment and wiring systems - dust atmospheres

KS01-EM02

5A

Explosion protection installation and maintenance requirements

Evidence shall show an understanding of explosion protection installation and maintenance requirements to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

 Purpose and scope of certification schemes.

 Schemes accepted in Australia and New Zealand.

 Schemes commonly used in countries other than Australia and New Zealand.

 Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).

 Typical situations where the flameproof explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Flameproof technique;

 The use of Standards in determining the requirements to which the installation

of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).
- Typical situations where the Increased safety explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Increased safety technique;
- The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).
- Typical situations where the Non-sparking explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Non-sparking technique; and
- The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex ‘i’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex ‘i’) technique (Examples of characteristics

and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

- Typical situations where the Intrinsic safety explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Intrinsic safety;
- The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex 'p') explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex 'p') technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).
- Typical situations where the pressurization explosion-protection technique is used;
- Actions or conditions that would void the protection provided the pressurization technique;

The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex 'tD') - explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).
- Typical situations where the each dust explosion-protection technique is used;
- Actions or conditions that would void the protection provided the each dust

technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of 'temperature classification' and 'gas grouping/apparatus grouping'.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex 'm'; oil-immersion Ex 'o'; powder-filling Ex 'q', ventilation Ex 'v' and special protection Ex 's').

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

T9 Preparation to install and maintain explosion-protected equipment in hazardous areas encompassing:

 OHS procedures to be followed when working in a hazardous area;

 the significance of information provided on the certification documentation and schedules for a given item of explosion-protected equipment;

 the typical contents of a verification dossier and their purpose; and

 limitations in the use of tools and testing devices in hazardous areas.

T10 The relationship between explosion-protected equipment, their certification documents and required locations given in specifications and layout drawings and/or

written instructions encompassing:

 the purpose of markings on the compliance plate and certification documents for a given item of explosion-protected equipment;

 matching explosion-protected equipment with certification documents and the equipment specified for an installation; and

 the location the items of explosion-protected equipment for an installation from specifications and layout drawings and/or instructions.

T11 Installation Standards and requirements applicable to hazardous encompassing:

 the wiring systems permitted and not permitted in or above hazardous areas;

 equipment not permitted in or above hazardous areas;

 the regulations and Standards to which explosion-protected equipment and wiring must be installed in a hazardous area and how these are applied; and

 the documentation required as a record of the installation process, including certification documentation.

T12 Maintenance procedures in hazardous areas that will ensure the integrity of the explosion-protection technique encompassing:

 the purpose of a maintenance schedule;

 the purpose and extent of 'close', 'sample' and 'periodic' inspections;

 the features of each explosion-protection techniques that should be included in a maintenance schedule;

 the impact of environmental conditions on explosion-protected equipment, including corrosion and frequency of maintenance;

 the documentation requirements for recording the maintenance process and results;

 the use of Standards in determining the requirements with which the design of explosion-protected apparatus shall comply.

T13 Cable termination types suitable for use in hazardous areas encompassing:

- explosion protection features of cable terminations devices.
- selecting compliant cable termination devices.

T14 Terminating cables suitable for use in hazardous areas encompassing:

- installing conduit systems, where applicable, including seals to meet hazardous areas requirements. (Gases only.)
- terminating a cable with a barrier gland. (Gases only.)
- terminating a multipair, SWA, overall screened, individual screened cable into an enclosure.
- testing termination/connections of installed cables/circuits.

UEENEEM026A Install explosion-protected equipment and wiring systems

- pressurisation

KS01-EM02

6A

Explosion protection installation and maintenance requirements

Evidence shall show an understanding of explosion protection installation and maintenance requirements to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

- Purpose and scope of certification schemes.
- Schemes accepted in Australia and New Zealand.
- Schemes commonly used in countries other than Australia and New Zealand.
- Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics

and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).

- Typical situations where the flameproof explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Flameproof technique;
- The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).

Typical situations where the Increased safety explosion-protection technique is used;

- Actions or conditions that would void the protection provided the Increased safety technique;
- The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).
- Typical situations where the Non-sparking explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Non-sparking technique; and

 The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex 'i') explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex 'i') technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

 Typical situations where the Intrinsic safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Intrinsic safety;

 The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex 'p') explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex 'p') technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

 Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation

of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

T9 Preparation to install and maintain explosion-protected equipment in hazardous areas encompassing:

 OHS procedures to be followed when working in a hazardous area;

 the significance of information provided on the certification documentation and schedules for a given item of explosion-protected equipment;

 the typical contents of a verification dossier and their purpose; and

 limitations in the use of tools and testing devices in hazardous areas.

T10 The relationship between explosion-protected equipment, their certification documents and required locations given in specifications and layout drawings and/or written instructions encompassing:

 the purpose of markings on the compliance plate and certification documents for a given item of explosion-protected equipment;

 matching explosion-protected equipment with certification documents and the equipment specified for an installation; and

the location the items of explosion-protected equipment for an installation from specifications and layout drawings and/or instructions.

T11 Installation Standards and requirements applicable to hazardous encompassing:

 the wiring systems permitted and not permitted in or above hazardous areas;

 equipment not permitted in or above hazardous areas;

 the regulations and Standards to which explosion-protected equipment and wiring must be installed in a hazardous area and how these are applied; and

 the documentation required as a record of the installation process, including certification documentation.

T12 Maintenance procedures in hazardous areas that will ensure the integrity of the explosion-protection technique encompassing:

 the purpose of a maintenance schedule;

 the purpose and extent of ‘close’, ‘sample’ and ‘periodic’ inspections;

 the features of each explosion-protection techniques that should be included in

a maintenance schedule;

 the impact of environmental conditions on explosion-protected equipment, including corrosion and frequency of maintenance;

 the documentation requirements for recording the maintenance process and results;

 the use of Standards in determining the requirements with which the design of explosion-protected apparatus shall comply.

T13 Cable termination types suitable for use in hazardous areas encompassing:

 explosion protection features of cable terminations devices.

 selecting compliant cable termination devices.

T14 Terminating cables suitable for use in hazardous areas encompassing:

 installing conduit systems, where applicable, including seals to meet hazardous areas requirements. (Gases only.)

 terminating a cable with a barrier gland. (Gases only.)

 terminating a multipair, SWA, overall screened, individual screened cable into an enclosure.

 testing termination/connections of installed cables/circuits.

BAE633 Safety Audit in Hazardous Areas

UEENEEM036A Conduct a conformity assessment of explosion-protected equipment - gas atmospheres

KS01-EM036

A

Explosion-protected equipment conformity assessment

Evidence shall show an understanding of explosion-protected equipment conformity assessment to an extent indicated by the following aspects:

T1 Occupational Health and Safety responsibilities related to hazardous areas encompassing:

 the main features and purpose of a ‘clearance to work’ system (includes hot work permit systems).

 typical safety procedures that should be followed before entering a hazardous area;

 the purpose of gas detectors and their limitations;

 effects of temperature on gas and vapour detection;

 frequency of monitoring for presence of gas or vapours, i.e. effects of temperature rise;

 factors affecting the accuracy of gas detectors, for example, contamination, condensation, temperature;

 safety in use of gas detectors, for example, ‘read and run concept’

 the safety precautions to be taken when working in a hazardous area.

T2 The roles of the parties involved in the safety of hazardous areas encompassing:

 common Acts and Regulations related to the safety of hazardous areas and the Authorities responsible for their implementation;

 where assistance and further information can be obtained to assist persons with hazardous area responsibilities, for example, Standard bodies, experienced consultants; and

 the hazardous area responsibilities of the owner of premises in which a hazardous area exists; the occupier of premises in which a hazardous area exists; enterprises and personnel engaged in installation and/or maintenance of explosion-protection systems; enterprises and personnel engaged in the classification of hazardous areas and/or design of explosion-protection systems; enterprises and personnel engaged in the overhaul, modification and/or assessment of explosion-protected equipment; enterprises and personnel engaged in the inspection of explosion-protection installations; manufacturers

of explosion-protected equipment; designated authorities; insurers.

T3 Properties of combustible substances and their potential to create an explosive hazard encompassing:

- condition in the workplace that will lead to an explosion;
- the terms ‘combustion’, ‘ignition’ and ‘propagation’;
- explosive range of substances encountered in the workplace i.e. LEL/UEL;
- explosive parameters of substances as given in tables of substance properties
- Note: Combustible materials are gases, vapours (from liquids), and dusts; flash point.
- the difference between gases and vapours; and
- the toxic nature of gases and vapours and potential harmful consequences.

T4 The nature of hazardous areas encompassing:

- the Standards definition of a ‘hazardous area’;
- the recommended methods for classifying the type and degree of explosion hazard in an area;
- hazardous area classifications as defined by Standards; and
- factors that are considered when a hazardous area is classified.
- the basics of how explosion-protection is achieved by the methods of exclusion, containment, energy limitation, dilution, avoidance of ignition source.

T5 Explosive-protected equipment encompassing:

- The principles of each explosion-protection technique, the methods used and how each technique works (Flameproof (Ex ‘d’); Increased safety (Ex ‘e’); Non-sparking (Ex ‘n’); Intrinsic safety (Ex ‘i’) and Pressurization (Ex ‘p’) for gas atmospheres and Dust-exclusion enclosures (Ex ‘tD’); Pressurization (Ex ‘pD’); Encapsulation (Ex ‘mD’); and Intrinsic safety (Ex ‘iD’) for dusts)
- How explosion-protected equipment is identified by the ‘Ex’ symbol marked

on the equipment, including old equipment and equipment certified in another country.

 Visible conditions or actions that would void the explosion-protection provided by a particular technique.

T6 Explosion-protection equipment — Ex certification schemes encompassing:

 Purpose and scope of certification schemes.

 Schemes accepted in Australia and New Zealand.

 Schemes commonly used in countries other than Australia and New Zealand.

 Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T7 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).

 Typical situations where the flameproof explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Flameproof technique;

 The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T8 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance

distances, absence of sparking contacts and enclosure entries).

- Typical situations where the Increased safety explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Increased safety technique;
- The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T9 Non-sparking (Ex 'n') explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex 'n') technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).
- Typical situations where the Non-sparking explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Non-sparking technique; and
- The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T10 Intrinsic safety (Ex 'i') explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex 'i') technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).
- Typical situations where the Intrinsic safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Intrinsic safety;

 The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T11 Pressurization (Ex ‘p’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex ‘p’) technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

 Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T12 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T13 Common characteristics of explosion-protection techniques encompassing:

 The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

T14 The compliance certification and the ‘Ex’ scheme for recognition of certification encompassing:

 the purposes of certification of explosion-protected equipment;

 the parties involved in the assessment/testing and certification of explosion-protected equipment and their responsibilities; and

 the process for recognition of assessment/testing and certification of explosion-protected equipment from other countries.

T15 The preparation required to assess explosion-protected equipment for compliance with Standards encompassing:

 the special safety measures that should be taken when assessing/testing explosion-protected equipment;

 documentation required prior to conducting conformity assessment;

 tests necessary to establish that an item of explosion-protected equipment conforms with relevant Standards; and

 situations where testing is not applicable or required.

T16 Assessing and testing explosion-protected equipment encompassing:

- assessment and test requirements; and.
- procedures for conducting a conformity assessment.

T17 Documentation used in assessing explosion-protected equipment for conformance to accepted Standards encompassing:

- The documentation and Standard(s) required to begin an assessment.
- The differences between the test requirements of Standards from other countries and the compliant/acceptable Standards against which the equipment is being assessed.
- Results given in equipment test reports.
- Conformity assessment processes and procedures.

T18 Assessing to a current acceptable Standard existing equipment that has been certified to previously acceptable Standards encompassing:

- processes and procedures used; and
- possible outcomes.

T19 A clause by clause assessment between the equipment manufacturing Standard(s) and the current acceptable Ex Standards encompassing:

- processes and procedures used; and
- differences between the Standards that may be detected.

UEENEEM057A Design explosion-protected electrical systems and installations - gas atmospheres

KS01-EM05

7A

Hazardous area electrical systems design

Evidence shall show an understanding of hazardous area electrical systems design to an extent indicated by the following aspects:

T1 Occupational Health and Safety responsibilities related to hazardous areas

encompassing:

 the main features and purpose of a ‘clearance to work’ system (includes hot work permit systems).

 typical safety procedures that should be followed before entering a hazardous area;

 the purpose of gas detectors and their limitations;

 effects of temperature on gas and vapour detection;

 frequency of monitoring for presence of gas or vapours, i.e. effects of temperature rise;

 factors affecting the accuracy of gas detectors, for example, contamination, condensation, temperature;

 safety in use of gas detectors, for example, ‘read and run concept’

 the safety precautions to be taken when working in a hazardous area.

T2 The roles of the parties involved in the safety of hazardous areas encompassing:

 common Acts and Regulations related to the safety of hazardous areas and the Authorities responsible for their implementation;

 where assistance and further information can be obtained to assist persons with hazardous area responsibilities, for example, Standard bodies, experienced

UEENEEM068A Assess the fitness-for-purpose of hazardous areas explosion-protected equipment - gas atmospheres

KS01-EM068

A

Explosion-protected equipment fitness-for-purpose

Evidence shall show an understanding of explosion-protected equipment fitness-for-purpose to an extent indicated by the following aspects:

T1 Preparation to install and maintain explosion-protected equipment in

hazardous areas encompassing:

- OHS procedures to be followed when working in a hazardous area;
- the significance of information provided on the certification documentation and schedules for a given item of explosion-protected equipment;
- the typical contents of a verification dossier and their purpose; and
- limitations in the use of tools and testing devices in hazardous areas.

T2 The relationship between explosion-protected equipment, their certification documents and required locations given in specifications and layout drawings and/or written instructions encompassing:

the purpose of markings on the compliance plate and certification documents for a given item of explosion-protected equipment;

- matching explosion-protected equipment with certification documents and the equipment specified for an installation; and
- the location the items of explosion-protected equipment for an installation from specifications and layout drawings and/or instructions.

T3 Installation Standards and requirements applicable to hazardous encompassing:

- the wiring systems permitted and not permitted in or above hazardous areas;
- equipment not permitted in or above hazardous areas;
- the regulations and Standards to which explosion-protected equipment and wiring must be installed in a hazardous area and how these are applied; and
- the documentation required as a record of the installation process, including certification documentation.

T4 Maintenance procedures in hazardous areas that will ensure the integrity of the explosion-protection technique encompassing:

- the purpose of a maintenance schedule;
- the purpose and extent of ‘close’, ‘sample’ and ‘periodic’ inspections;

 the features of each explosion-protection techniques that should be included in a maintenance schedule;

 the impact of environmental conditions on explosion-protected equipment, including corrosion and frequency of maintenance;

 the documentation requirements for recording the maintenance process and results;

 the use of Standards in determining the requirements with which the design of explosion-protected apparatus shall comply.

T5 Cable termination types suitable for use in hazardous areas encompassing:

 explosion protection features of cable terminations devices.

 selecting compliant cable termination devices.

T6 The relationship between the documentation held in a verification dossier and the installed equipment encompassing:

 consistency between the location and type of equipment with the area classification details in the verification dossier; and

 equipment certification and any attached conditions that relate to the equipment as it is installed.

T7 Inspecting a hazardous area installation encompassing:

 typical processes for undertaking the inspection of a hazardous area installation;

requirements applicable to a given installation; and

 reporting of an inspection of a hazardous area installation.

T8 Documentation used in assessing explosion-protected equipment for conformance to accepted Standards encompassing:

 The documentation and Standard(s) required to begin an assessment.

 The differences between the test requirements of Standards from other countries and the compliant/acceptable Standards against which the equipment

is being assessed.

- Results given in equipment test reports.
- Conformity assessment processes and procedures.

T9 Assessing to a current acceptable Standard existing equipment that has been certified to previously acceptable Standards encompassing:

- processes and procedures used; and
- possible outcomes.

T10 A clause by clause assessment between the equipment manufacturing Standard(s) and the current acceptable Ex Standards encompassing:

- processes and procedures used; and
- differences between the Standards that may be detected.

T11 Techniques used in fitness-for purpose assessment of equipment for use in hazardous areas encompassing:

- Processes for verifying that a design specification meets the integrity of the equipment, showing the equipment is fit-for-purpose and is safe to use:
- Standards against which fitness-for-purpose assessment is made;
- the need to maintain the accuracy/calibration of measuring/test devices/tools;
- assessment and measurements/tests requirements for determining that an item of explosion-protected equipment complies with the relevant Standards and meets the certification requirements;
- testing that is/is not required to determine compliance of the equipment being assessed; and
- development of different tests to those given in Standards and justification as to how they achieve the same result.
- Typical specification for the equipment to be assessed as fit-for-purpose.

T12 Processes used in auditing hazardous areas encompassing:

 Requirements to retain hazardous areas documentation on site.

 Components of an audit:

 authenticity of documentation;

hazardous areas delineations shown in site diagrams;

 location and operating parameters of equipment shown in certification

documents;

 compliance of equipment location;

 compliance of wiring systems; and

 alignment of hazardous areas documentation to as- built installation.

 Reporting non-conformance of an installation.

BAE 634 Explosion Protection Equipments & Methods

UEENEEM080A Report on the integrity of explosion-protected equipment

in a hazardous area

KS01-EM080A Hazardous areas and explosion-protection

principles

Evidence shall show an understanding of hazardous areas and explosion-protection

principles (including working safely in hazardous areas), principles of the following

explosion-protection techniques and visible conditions of explosion-protection

equipment that indicate the protection is void and changes in the nature of the

explosion hazard that may render the explosion-protection unsafe. to an extent

indicated by the following aspects:

T1 Occupational Health and Safety responsibilities related to hazardous areas

encompassing:

the main features and purpose of a 'clearance to work' system (includes hot work

permit systems).

 typical safety procedures that should be followed before entering a hazardous area;

 the purpose of gas detectors and their limitations;

 effects of temperature on gas and vapour detection;

 frequency of monitoring for presence of gas or vapours, i.e. effects of temperature rise;

 factors affecting the accuracy of gas detectors, for example, contamination, condensation, temperature;

 safety in use of gas detectors, for example, ‘read and run concept’

 the safety precautions to be taken when working in a hazardous area.

T2 The roles of the parties involved in the safety of hazardous areas encompassing:

 common Acts and Regulations related to the safety of hazardous areas and the Authorities responsible for their implementation;

 where assistance and further information can be obtained to assist persons with hazardous area responsibilities, for example, Standard bodies, experienced consultants; and

 the hazardous area responsibilities of the owner of premises in which a hazardous area exists; the occupier of premises in which a hazardous area exists; enterprises and personnel engaged in installation and/or maintenance of explosion-protection systems; enterprises and personnel engaged in the classification of hazardous areas and/or design of explosion-protection systems; enterprises and personnel engaged in the overhaul, modification and/or assessment of explosion-protected equipment; enterprises and personnel engaged in the inspection of explosion-protection installations; manufacturers of explosion-protected equipment; designated authorities; insurers.

T3 Properties of combustible substances and their potential to create an explosive hazard encompassing:

 condition in the workplace that will lead to an explosion;

 the terms ‘combustion’, ‘ignition’ and ‘propagation’;

 explosive range of substances encountered in the workplace i.e. LEL/UEL;

 explosive parameters of substances as given in tables of substance properties

Note: Combustible materials are gases, vapours (from liquids), and dusts; flash point.

 the difference between gases and vapours; and

 the toxic nature of gases and vapours and potential harmful consequences.

T4 The nature of hazardous areas encompassing:

 the Standards definition of a 'hazardous area';

 the recommended methods for classifying the type and degree of explosion hazard in an area;

 hazardous area classifications as defined by Standards; and

factors that are considered when a hazardous area is classified.

 the basics of how explosion-protection is achieved by the methods of exclusion, containment, energy limitation, dilution, avoidance of ignition source.

T5 Explosive-protected equipment encompassing:

 The principles of each explosion-protection technique, the methods used and how each technique works (Flameproof (Ex 'd'); Increased safety (Ex 'e'); Non-sparking (Ex 'n'); Intrinsic safety (Ex 'i') and Pressurization (Ex 'p') for gas atmospheres and Dust-exclusion enclosures (Ex 'tD'); Pressurization (Ex 'pD'); Encapsulation (Ex 'mD'); and Intrinsic safety (Ex 'iD') for dusts)

 How explosion-protected equipment is identified by the 'Ex' symbol marked on the equipment, including old equipment and equipment certified in another country.

 Visible conditions or actions that would void the explosion-protection provided by a particular technique.

T6 Explosion-protection visual checks encompassing:

 occupational, health and safety procedures to be followed before entering hazardous areas; and while conducting visual inspection.

 Visible defects in explosion-protected equipment and wiring.

 Conditions that may indicate a change in a given explosion hazard.

 Reporting defects in explosion-protected equipment and wiring - the purpose of a verification dossier; and various ways for reporting defects in explosion-protected equipment and wiring.

 procedures to be followed in the event of a change in the explosion hazard.

UEENEEM065A Conduct audit of hazardous areas installations - gas Atmospheres

KS01-EM065

A

Hazardous areas installation auditing

Evidence shall show an understanding of hazardous areas installation auditing to an extent indicated by the following aspects:

T1 Occupational Health and Safety responsibilities related to hazardous areas encompassing:

 the main features and purpose of a 'clearance to work' system (includes hot work permit systems).

 typical safety procedures that should be followed before entering a hazardous area;

 the purpose of gas detectors and their limitations;

 effects of temperature on gas and vapour detection;

 frequency of monitoring for presence of gas or vapours, i.e. effects of temperature rise;

 factors affecting the accuracy of gas detectors, for example, contamination, condensation, temperature;

 safety in use of gas detectors, for example, 'read and run concept'

 the safety precautions to be taken when working in a hazardous area.

T2 The roles of the parties involved in the safety of hazardous areas encompassing:

 common Acts and Regulations related to the safety of hazardous areas and the Authorities responsible for their implementation;

 where assistance and further information can be obtained to assist persons with hazardous area responsibilities, for example, Standard bodies, experienced consultants; and

 the hazardous area responsibilities of the owner of premises in which a hazardous area exists; the occupier of premises in which a hazardous area exists; enterprises and personnel engaged in installation and/or maintenance of explosion-protection systems; enterprises and personnel engaged in the classification of hazardous areas and/or design of explosion-protection systems; enterprises and personnel engaged in the overhaul, modification and/or assessment of explosion-protected equipment; enterprises and personnel engaged in the inspection of explosion-protection installations; manufacturers of explosion-protected equipment; designated authorities; insurers.

T3 Properties of combustible substances and their potential to create an explosive hazard encompassing:

 condition in the workplace that will lead to an explosion;

 the terms ‘combustion’, ‘ignition’ and ‘propagation’;

 explosive range of substances encountered in the workplace i.e. LEL/UEL;

 explosive parameters of substances as given in tables of substance properties

 Note: Combustible materials are gases, vapours (from liquids), and dusts; flash point.

 the difference between gases and vapours; and

 the toxic nature of gases and vapours and potential harmful consequences.

T4 The nature of hazardous areas encompassing:

- the Standards definition of a ‘hazardous area’;
- the recommended methods for classifying the type and degree of explosion hazard in an area;
- hazardous area classifications as defined by Standards; and
- factors that are considered when a hazardous area is classified.
- the basics of how explosion-protection is achieved by the methods of exclusion, containment, energy limitation, dilution, avoidance of ignition source.

T5 Explosive-protected equipment encompassing:

- The principles of each explosion-protection technique, the methods used and how each technique works (Flameproof (Ex ‘d’); Increased safety (Ex ‘e’); Non-sparking (Ex ‘n’); Intrinsic safety (Ex ‘i’) and Pressurization (Ex ‘p’) for gas atmospheres and Dust-exclusion enclosures (Ex ‘tD’); Pressurization (Ex ‘pD’); Encapsulation (Ex ‘mD’); and Intrinsic safety (Ex ‘iD’) for dusts)
- How explosion-protected equipment is identified by the ‘Ex’ symbol marked on the equipment, including old equipment and equipment certified in another country.
- Visible conditions or actions that would void the explosion-protection provided by a particular technique.

T6 Explosion-protection equipment — Ex certification schemes encompassing:

- Purpose and scope of certification schemes.
- Schemes accepted in Australia and New Zealand.
- Schemes commonly used in countries other than Australia and New Zealand.
- Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T7 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).
- Typical situations where the flameproof explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Flameproof technique;
- The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T8 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).
- Typical situations where the Increased safety explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Increased safety technique;
- The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T9 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted

breathing).

 Typical situations where the Non-sparking explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Non-sparking technique; and

 The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T10 Intrinsic safety (Ex 'i') explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex 'i') technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).

 Typical situations where the Intrinsic safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Intrinsic safety;

 The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T11 Pressurization (Ex 'p') explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex 'p') technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

 Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T12 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T13 Common characteristics of explosion-protection techniques encompassing:

 The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed or use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or

drain wires).

T14 Preparation to install and maintain explosion-protected equipment in hazardous areas encompassing:

- OHS procedures to be followed when working in a hazardous area;
- the significance of information provided on the certification documentation and schedules for a given item of explosion-protected equipment;
- the typical contents of a verification dossier and their purpose; and
- limitations in the use of tools and testing devices in hazardous areas.

T15 The relationship between explosion-protected equipment, their certification documents and required locations given in specifications and layout drawings and/or written instructions encompassing:

- the purpose of markings on the compliance plate and certification documents for a given item of explosion-protected equipment;
- matching explosion-protected equipment with certification documents and the equipment specified for an installation; and
- the location the items of explosion-protected equipment for an installation from specifications and layout drawings and/or instructions.

T16 Installation Standards and requirements applicable to hazardous encompassing:

- the wiring systems permitted and not permitted in or above hazardous areas;
- equipment not permitted in or above hazardous areas;
- the regulations and Standards to which explosion-protected equipment and wiring must be installed in a hazardous area and how these are applied; and
- the documentation required as a record of the installation process, including certification documentation.

T17 Processes used in auditing hazardous areas encompassing:

- Requirements to retain hazardous areas documentation on site.

- Components of an audit:
- authenticity of documentation;
- hazardous areas delineations shown in site diagrams;
- location and operating parameters of equipment shown in certification documents;
- compliance of equipment location;
- compliance of wiring systems; and
- alignment of hazardous areas documentation to as- built installation.
- Reporting non-conformance of an installation.

BAE 635 Testing in Hazardous Areas

UEENEEM039A Conduct testing of hazardous areas installations - gas Atmospheres

KS01-EM03

9A

Hazardous area installations testing

Evidence shall show an understanding of hazardous area installations testing to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

- Purpose and scope of certification schemes.
- Schemes accepted in Australia and New Zealand.
- Schemes commonly used in countries other than Australia and New Zealand.
- Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits

protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).

- Typical situations where the flameproof explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Flameproof technique;
- The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).

Typical situations where the Increased safety explosion-protection technique is used;

- Actions or conditions that would void the protection provided the Increased safety technique;
- The use of Standards in determining the requirements to which the installation of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).
- Typical situations where the Non-sparking explosion-protection technique is

used;

- Actions or conditions that would void the protection provided the Non-sparking technique; and
- The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex 'i') explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex 'i') technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).
- Typical situations where the Intrinsic safety explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Intrinsic safety;
- The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex 'p') explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Pressurization (Ex 'p') technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).
- Typical situations where the pressurization explosion-protection technique is used;
- Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

T9 Preparation to install and maintain explosion-protected equipment in

hazardous areas encompassing:

- OHS procedures to be followed when working in a hazardous area;
- the significance of information provided on the certification documentation and schedules for a given item of explosion-protected equipment;
- the typical contents of a verification dossier and their purpose; and
- limitations in the use of tools and testing devices in hazardous areas.

T10 The relationship between explosion-protected equipment, their certification documents and required locations given in specifications and layout drawings and/or written instructions encompassing:

- the purpose of markings on the compliance plate and certification documents for a given item of explosion-protected equipment;
- matching explosion-protected equipment with certification documents and the equipment specified for an installation; and

the location the items of explosion-protected equipment for an installation from specifications and layout drawings and/or instructions.

T11 Installation Standards and requirements applicable to hazardous encompassing:

- the wiring systems permitted and not permitted in or above hazardous areas;
- equipment not permitted in or above hazardous areas;
- the regulations and Standards to which explosion-protected equipment and wiring must be installed in a hazardous area and how these are applied; and
- the documentation required as a record of the installation process, including certification documentation.

T12 Cable termination types suitable for use in hazardous areas encompassing:

- explosion protection features of cable terminations devices.
- selecting compliant cable termination devices.

T13 Terminating cables suitable for use in hazardous areas encompassing:

 installing conduit systems, where applicable, including seals to meet hazardous areas requirements. (Gases only.)

 terminating a cable with a barrier gland. (Gases only.)

 terminating a multipair, SWA, overall screened, individual screened cable into an enclosure.

 testing termination/connections of installed cables/circuits.

T14 Preparation for conducting installation testing in a hazardous area encompassing:

 OHS procedures to be followed for working in a hazardous area; and

 procedures for determining whether a given hazardous area is safe to conduct electrical testing.

T15 Characteristics and limitations of testing equipment used to test installation in hazardous areas encompassing:

 testing devices required to test an installation in a hazardous area; and

 the suitability of testing device for use in a hazardous area.

T16 Documentation of results of hazardous area installation tests encompassing:

 test results that should be recorded in a verification dossier; and

 procedures and options for dealing with test results that show non-conformance.

UEENEEM052A Classify hazardous areas - gas atmospheres

KS01-EM052A Hazardous areas classification

Evidence shall show an understanding of processes involved in gathering and analysing technical data to classify non-specific hazardous areas. The following aspects indicate the extent of understanding required.

T1 Occupational Health and Safety responsibilities related to hazardous areas encompassing:

 the main features and purpose of a ‘clearance to work’ system (includes hot work permit systems).

 typical safety procedures that should be followed before entering a hazardous area;

 the purpose of gas detectors and their limitations;

 effects of temperature on gas and vapour detection;

 frequency of monitoring for presence of gas or vapours, i.e. effects of temperature rise;

 factors affecting the accuracy of gas detectors, for example, contamination, condensation, temperature;

 safety in use of gas detectors, for example, ‘read and run concept’

 the safety precautions to be taken when working in a hazardous area.

T2 The roles of the parties involved in the safety of hazardous areas encompassing:

 common Acts and Regulations related to the safety of hazardous areas and the Authorities responsible for their implementation;

 where assistance and further information can be obtained to assist persons with hazardous area responsibilities, for example, Standard bodies, experienced consultants; and

 the hazardous area responsibilities of the owner of premises in which a hazardous area exists; the occupier of premises in which a hazardous area exists; enterprises and personnel engaged in installation and/or maintenance of explosion-protection systems; enterprises and personnel engaged in the classification of hazardous areas and/or design of explosion-protection systems; enterprises and personnel engaged in the overhaul, modification and/or assessment of explosion-protected equipment; enterprises and personnel engaged in the inspection of explosion-protection installations; manufacturers of explosion-protected equipment; designated authorities; insurers.

T3 Properties of combustible substances and their potential to create an explosive hazard encompassing:

- condition in the workplace that will lead to an explosion;
- the terms ‘combustion’, ‘ignition’ and ‘propagation’;
- explosive range of substances encountered in the workplace i.e. LEL/UEL;
- explosive parameters of substances as given in tables of substance properties

Note: Combustible materials are gases, vapours (from liquids), and dusts; flash point.

- the difference between gases and vapours; and
- the toxic nature of gases and vapours and potential harmful consequences.

T4 The nature of hazardous areas encompassing:

- the Standards definition of a ‘hazardous area’;
- the recommended methods for classifying the type and degree of explosion hazard in an area;
- hazardous area classifications as defined by Standards; and
- factors that are considered when a hazardous area is classified.
- the basics of how explosion-protection is achieved by the methods of exclusion, containment, energy limitation, dilution, avoidance of ignition source.

T5 The process of classifying hazardous areas encompassing:

- methods by which an area can be classified;
- the characteristics/attributes of an area that should be considered in the classification process, for example, type of process, nature of plant, source and nature of release;
- the requirements and Standards for classifying a hazardous area; and
- the responsibilities of the owner/occupiers for classification of a hazardous area.

T6 The likelihood (zoning) or risk assessment method of an explosive hazard encompassing:

- ignition properties of materials relevant to determining the likelihood and extent of

an explosive hazard;

 sources for obtaining data on ignition properties of materials under the conditions in which they could be present in a given process;

 methods for assessment and calculation of factors such as release rate , ventilation and dispersion characteristics; and and

 means for reducing hazard risk.

T7 The extent of an explosive hazard and classifying an area accordingly encompassing:

 the extent of zones for an area given data on the likelihood of the explosive hazard for that area;

 requirements for documenting the classification of a hazardous area; and

 the extent of the zones, temperature classes and gas groups on site drawings in a hazardous area.

BAE 636 Inspection in Hazardous Area

UEENEEM078A Manage compliance of hazardous areas

KS01-EM078A Hazardous areas compliance requirements

Evidence shall show an understanding of hazardous areas compliance requirements to an extent indicated by the following aspects:

T1 Occupational Health and Safety responsibilities related to hazardous areas encompassing:

 the main features and purpose of a 'clearance to work' system (includes hot work permit systems).

 typical safety procedures that should be followed before entering a hazardous area;

 the purpose of gas detectors and their limitations;

 effects of temperature on gas and vapour detection;

 frequency of monitoring for presence of gas or vapours, i.e. effects of temperature

rise;

 factors affecting the accuracy of gas detectors, for example, contamination, condensation, temperature;

 safety in use of gas detectors, for example, ‘read and run concept’

the safety precautions to be taken when working in a hazardous area.

T2 The roles of the parties involved in the safety of hazardous areas encompassing:

 common Acts and Regulations related to the safety of hazardous areas and the Authorities responsible for their implementation;

 where assistance and further information can be obtained to assist persons with hazardous area responsibilities, for example, Standard bodies, experienced consultants; and

 the hazardous area responsibilities of the owner of premises in which a hazardous area exists; the occupier of premises in which a hazardous area exists; enterprises and personnel engaged in installation and/or maintenance of explosion-protection systems; enterprises and personnel engaged in the classification of hazardous areas and/or design of explosion-protection systems; enterprises and personnel engaged in the overhaul, modification and/or assessment of explosion-protected equipment; enterprises and personnel engaged in the inspection of explosion-protection installations; manufacturers of explosion-protected equipment; designated authorities; insurers.

T3 Properties of combustible substances and their potential to create an explosive hazard encompassing:

 condition in the workplace that will lead to an explosion;

 the terms ‘combustion’, ‘ignition’ and ‘propagation’;

 explosive range of substances encountered in the workplace i.e. LEL/UEL;

 explosive parameters of substances as given in tables of substance properties

Note: Combustible materials are gases, vapours (from liquids), and dusts; flash point.

 the difference between gases and vapours; and

 the toxic nature of gases and vapours and potential harmful consequences.

T4 The nature of hazardous areas encompassing:

 the Standards definition of a 'hazardous area';

 the recommended methods for classifying the type and degree of explosion hazard in an area;

 hazardous area classifications as defined by Standards; and

 factors that are considered when a hazardous area is classified.

 the basics of how explosion-protection is achieved by the methods of exclusion, containment, energy limitation, dilution, avoidance of ignition source.

T5 The responsibilities of a person managing activities or a site related to a hazardous area, encompassing:

 OHS procedures that are to be established;

 responsibilities for ensuring that a hazardous area is safe; and

 responsibilities and processes for establishing and maintaining a verification dossier.

T6 Explosion-protection strategies in relation to a hazardous area, encompassing:

 the process of classifying a hazardous area;

 various ways in which electrical systems /apparatus can be treated to prevent them from becoming an ignition source; and

 the cost of the different ways of treating electrical systems/apparatus associated with hazardous areas.

T7 Requirements for the maintenance of electrical systems associated with hazardous areas, encompassing:

 the type and grades of inspection of hazardous areas;

 maintenance programs for electrical explosion-protected systems/apparatus; and

documentation requirements associated with maintenance procedures.

UEENEEM042A Conduct visual inspection of hazardous areas installations

KS01-EM04

2A

Hazardous areas visual inspection

Evidence shall show an understanding of the purpose and process of hazardous areas visual inspections to an extent indicated by the following aspects:

T1 Occupational, health and safety procedures encompassing:

 occupational, health and safety procedures to be followed before entering hazardous areas; and

occupational, health and safety procedures to be followed while conducting visual inspection.

T2 Requirements for a verification dossier and relationship to as-built electrical installation.

T3 Purpose, scope and limitations of visual inspections.

T4 Documentation requirements resulting from a visual inspection.

UEENEEM044A Conduct detailed inspection of hazardous areas installations - gas atmospheres

KS01-EM044

A

Hazardous areas detailed inspection techniques

Evidence shall show an understanding of hazardous areas detailed inspection techniques to an extent indicated by the following aspects:

T1 Explosion-protection equipment — Ex certification schemes encompassing:

 Purpose and scope of certification schemes.

 Schemes accepted in Australia and New Zealand.

 Schemes commonly used in countries other than Australia and New Zealand.

 Processes for having equipment certified under the acceptable Ex schemes — scheme procedures; quality management requirements; conformance testing and assessment; and requirements for ongoing certification.

T2 Flameproof (Ex ‘d’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the flameproof (Ex ‘d’) technique. (Examples of characteristics and design features are flame paths, integrity under pressure, pressure piling, and enclosure entries).

 Typical situations where the flameproof explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Flameproof technique;

 The use of Standards in determining the requirements to which the installation of flameproof explosion-protected apparatus shall comply.

T3 Increased safety (Ex ‘e’) explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the Increased safety (Ex ‘e’) technique (Examples of characteristics and design features are temperature rise, maximum power dissipation, protection devices, certified components, creepage and clearance distances, absence of sparking contacts and enclosure entries).

 Typical situations where the Increased safety explosion-protection technique is used;

 Actions or conditions that would void the protection provided the Increased safety technique;

 The use of Standards in determining the requirements to which the installation

of Increased safety explosion-protected apparatus shall comply.

T4 Non-sparking (Ex ‘n’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Non-sparking (Ex ‘n’) technique (Examples of characteristics and design features are creepage and clearance distances and restricted breathing).
- Typical situations where the Non-sparking explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Non-sparking technique; and
- The use of Standards in determining the requirements to which the installation of Non-sparking explosion-protected apparatus shall comply.

T5 Intrinsic safety (Ex ‘i’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits protected by the Intrinsic safety (Ex ‘i’) technique (Examples of characteristics and design features are field devices, cables, safe area devices, earthing, entity versus integrated system concept, simple devices and interface devices and their parameters, segregation, infallible components, current and voltage limiting, creepage and clearance distances).
- Typical situations where the Intrinsic safety explosion-protection technique is used;
- Actions or conditions that would void the protection provided the Intrinsic safety;
- The use of Standards in determining the requirements to which the installation of Intrinsic safety explosion-protected apparatus shall comply.

T6 Pressurization (Ex ‘p’) explosion-protection technique encompassing:

- The purpose and characteristics of the design features of apparatus and circuits

protected by the Pressurization (Ex ‘p’) technique (Examples of characteristics and design features are exclusion and dilution; purge periods, controlled shut down, monitoring and sources of internal release).

 Typical situations where the pressurization explosion-protection technique is used;

 Actions or conditions that would void the protection provided the pressurization technique;

 The use of Standards in determining the requirements to which the installation of pressurization explosion-protected apparatus shall comply.

T7 Enclosures for dusts (Ex ‘tD’) - explosion-protection technique encompassing:

 The purpose and characteristics of the design features of apparatus and circuits protected by the techniques for dusts (Examples of characteristics and design features are for enclosures; pressurization; encapsulation; and intrinsic safety).

 Typical situations where the each dust explosion-protection technique is used;

 Actions or conditions that would void the protection provided the each dust technique;

 The use of Standards in determining the requirements to which the installation of dust explosion-protected apparatus shall comply.

REQUIRED SKILLS AND KNOWLEDGE

T8 Common characteristics of explosion-protection techniques encompassing:

 The purposes of ‘temperature classification’ and ‘gas grouping/apparatus grouping’.

 Compliance plate markings.

 Limitations of non-metallic or specific alloy enclosures.

 The purpose of conformity and certification/approval for equipment used in hazardous areas.

 Environmental conditions that may impact on explosion-protection techniques.

 The principles and applications of other and mixed explosion-protection techniques (Other techniques include encapsulation Ex ‘m’; oil-immersion Ex ‘o’; powder-filling Ex ‘q’, ventilation Ex ‘v’ and special protection Ex ‘s’).

 Features and purpose of conduit seals and cable termination devices designed for use in hazardous areas (These include conduit seals and barrier and compression glands for cables with or without armouring, screening and/or drain wires).

T9 Preparation to install and maintain explosion-protected equipment in hazardous areas encompassing:

 OHS procedures to be followed when working in a hazardous area;

 the significance of information provided on the certification documentation and schedules for a given item of explosion-protected equipment;

 the typical contents of a verification dossier and their purpose; and

 limitations in the use of tools and testing devices in hazardous areas.

T10 The relationship between explosion-protected equipment, their certification documents and required locations given in specifications and layout drawings and/or written instructions encompassing:

 the purpose of markings on the compliance plate and certification documents for a given item of explosion-protected equipment;

 matching explosion-protected equipment with certification documents and the equipment specified for an installation; and

 the location the items of explosion-protected equipment for an installation from specifications and layout drawings and/or instructions.

T11 Installation Standards and requirements applicable to hazardous encompassing:

 the wiring systems permitted and not permitted in or above hazardous areas;

 equipment not permitted in or above hazardous areas;

 the regulations and Standards to which explosion-protected equipment and wiring must be installed in a hazardous area and how these are applied; and

 the documentation required as a record of the installation process, including certification documentation.

T12 Maintenance procedures in hazardous areas that will ensure the integrity of the explosion-protection technique encompassing:

 the purpose of a maintenance schedule;

 the purpose and extent of 'close', 'sample' and 'periodic' inspections;

 the features of each explosion-protection techniques that should be included in a maintenance schedule;

 the impact of environmental conditions on explosion-protected equipment, including corrosion and frequency of maintenance;

 the documentation requirements for recording the maintenance process and results;

 the use of Standards in determining the requirements with which the design of explosion-protected apparatus shall comply.

T13 Cable termination types suitable for use in hazardous areas encompassing:

 explosion protection features of cable terminations devices.

 selecting compliant cable termination devices.

T14 Terminating cables suitable for use in hazardous areas encompassing:

 installing conduit systems, where applicable, including seals to meet hazardous areas requirements. (Gases only.)

 terminating a cable with a barrier gland. (Gases only.)

 terminating a multipair, SWA, overall screened, individual screened cable into an enclosure.

 testing termination/connections of installed cables/circuits.

T15 The relationship between the documentation held in a verification dossier and

the installed equipment encompassing:

- consistency between the location and type of equipment with the area classification details in the verification dossier; and
- equipment certification and any attached conditions that relate to the equipment as it is installed.

T16 Inspecting a hazardous area installation encompassing:

- typical processes for undertaking the inspection of a hazardous area installation;
- requirements applicable to a given installation; and
- reporting of an inspection of a hazardous area installation.

BAE 637 Chemical Hazardous Management

BAE 638 Environmental Engineering in Hazardous Areas

HAZARDOUS MATERIALS AND HAZARDOUS WASTE MANAGEMENT

NOISE

SOCIOECONOMICS

TRANSPORTATION

UTILITIES

ENVIRONMENTAL JUSTICE

SUBSISTENCE

Mercury in the Environment

Health Hazards

MINE HEALTH AND SAFETY ACT

PIPELINE SAFETY REGULATIONS

Diploma in Renewable Energy Engineering

This course provides the necessary knowledge and skills required to assess, plan, select and design the renewable energy engineering.

It integrates renewable energy principles, electrical/ mechanical and civil engineering principles in renewable contexts.

The program will equip graduates with the knowledge and ability to design and apply a range of technologies in the renewable energy spectrum, with specialisation in either electrical and mechanical/civil engineering. These specialisations reflect the diverse opportunities within the industry, from the process of conversion and storage of energy to infrastructure and associated civil engineering activities. The program will provide educational and career pathways to students from multiple industry backgrounds across a range of different career aspirations.

Pre-requisites

- AGTI, BE Degree in any discipline
- B.Sc Degree
- B C Sc, B C Tech degrees

List of subjects

RE001- Foundation Studies in Renewable Energy and Sustainability

RE002- Grid Connected Photovoltaic Power Systems

RE003- Solar and Thermal Energy Systems

RE004- Energy Storage Systems

RE005- Renewable Energy Resource Analysis

RE006- Wind Energy Conversion Systems

RE007- Energy System Efficiency

Duration of the course

(A) Publics Seminar Mode

Part 1-

Day 1 Morning

RE001- Foundation Studies in Renewable Energy and Sustainability

Day 1 Afternoon

RE002- Grid Connected Photovoltaic Power Systems

Day 2 Morning

RE003- Solar and Thermal Energy Systems

Day 2 Afternoon

RE004- Energy Storage Systems

Part 2-

Day 3 Morning

RE005- Renewable Energy Resource Analysis

Day 3 Afternoon

RE006- Wind Energy Conversion Systems
RE007- Energy System Efficiency

The participants who attends the session will receive the Certificate of Attendances

(B) Formal Attendance Mode

One year

RE001- Foundation Studies in Renewable Energy and Sustainability

In this subject you will learn about the areas of renewable energy technologies and sustainability. On completing this subject you will be able to:

□□investigate the factual basis behind climate change and its impact on Earth;

□□utilise Engineering Principles to evaluate both non-renewable and renewable energy systems;

□□analyse the principles and benefits of renewable energy technologies; and

□□propose principles of sustainable living and how society can move to a sustainable post-carbon economy.

RE002- Grid Connected Photovoltaic Power Systems

In this subject you will learn the basics about photovoltaics and grid design. On completing this subject you will be able to:

□□perform calculations relating to solar geometry and available solar energy;

□□design and cost a grid connected photovoltaic power system to suit a client's load requirement, location and budget, in accordance with workplace health and safety, Australian and industry standards; and

□□provide advice to clients on selection of a grid connect photovoltaic power system.

RE003- Solar and Thermal Energy Systems

In this subject you will learn about solar and thermal energy systems. On completing this subject you will be able to:

□□analyse relevant background issues in solar and waste heat based heating, cooling and mechanical power generation systems;

□□perform heating load calculations for domestic, commercial and industrial applications;

□□identify the solar/-thermal environment for any terrestrial location;

□□examine the various generic types of solar thermal collectors, together with limitations and typical applications of each type;

□□identify various methods of thermal energy storage, together with typical applications;

□□identify various methods of cooling and mechanical power generation using solar and/or waste heat, together with typical applications; and

□□perform calculations aimed at sizing components of heating, cooling and mechanical power generation systems powered from solar or waste heat.

RE004- Energy Storage Systems

In this subject you will learn about energy storage systems. On completing this subject you will be able to:

□□establish a rationale for energy storage technology in energy systems;

□□investigate the application of energy storage in renewable and non-renewable energy systems;

□□relate physical principles associated with energy storage systems;

□□perform calculations related to development of energy storage systems;

□□assess the environmental impacts and benefits of energy storage; and

□□design and cost a small-scale energy storage system to suit a given engineering requirement.

RE005- Renewable Energy Resource Analysis

In this subject you will learn about renewable energy resource analysis. On completing this subject you will be able to:

□□undertake calculations on energy generation and consumption, and relate findings to behavioural trends;

□□explain contemporary thermodynamic power cycles and relate scope of fossil fuel consumption;

□□investigate renewable energy initiatives and technologies, including solar, wind, hydro and biomass initiatives and technologies;

□□investigate regional approaches to using renewable energy sources, including geo-thermal and ocean energy; and

□□analyse and critique concepts related to the hydrogen economy, and explain physical and political constraints associated with its practical operation.

RE006- Wind Energy Conversion Systems

In this subject you will learn about wind energy conversion systems. On completing this subject you will be able to:

□□undertake various kinematic, power, wind and site related calculations;

□□use instruments, internet resources, site features to undertake wind energy calculations;

□□analyse WECS turbine construction and characteristics;

□□select and position a tower to suit anemometer and turbine and undertake basic DC wiring of a system;

□□use site and turbine data to fully design and evaluate energy yield with payback; and

□□identify workplace health and safety considerations related to the design and construction of wind conversion systems.

RE007- Energy System Efficiency

In this subject you will learn about the efficiency of energy systems. On completing this subject you will be able to:

perform calculations related to energy conversion and energy auditing, and outline their underlying principles;

outline the economic and environmental benefits of energy efficiency;
explain current methods employed to improve energy efficiency in all areas of the energy supply sector; and

explain the principles of distributed generation systems in relationship efficiency and renewable energy systems.

Advanced Diploma in Electro-Mechanical Engineering (Renewable Energy Construction) (International)

The program will provide broad trans-disciplinary knowledge and skills across the range of Engineering disciplines required to design and implement complex custom distributed energy generation solutions. At the same time students will have an opportunity to acquire in-depth knowledge and skills in either Electrical, Mechanical/Civil Engineering through the selection of a specialisation.

Semester (1)

RE008-Mathematics & Physics (I)

RE009-Mathematics & Physics (II)

RE010-Engineering Materials

RE011-Civil & Mechanical Engineering

Semester (2)

RE012-Electrical Engineering

RE013-Electrical Machines

RE014-Electronics Control

RE015-Electrical Project

Final Project

RE016-Design & Management

RE008-Mathematics & Physics (I)

In this subject you will learn basic principles of mathematics and physics for engineer
You will develop knowledge relating to:

Mathematics:

- Essential algebra
- The number system
- Functions and relations
- Introductory Calculus

Physics:

- Common topics:
- SI units (International System of Units)
- Vectors and scalars

Statics:

- Equilibrium of static forces

Kinematics:

- Motion in one-dimension
- Motion in two-dimensions
- Newton's Laws of Motion
- Work and energy
- Momentum and collisions
- Rotational mechanics

Wave Mechanics:

- Types of waves
- Sound waves
- Oscillations
- Water waves.

Mathematics:

- Ordinary differential equations
- Techniques of integration
- Optimisation
- Riemann integral
- Lines and planes
- Vectors and scalars
- Graphs illustrating various functions

Physics:

- Thermal physics
- Fluid mechanics and hydrostatics
- Electrostatics

Electromagnetism:

- Current electricity.

RE009 Mathematics & Physics (II)

In this subject you will build upon previous study and gain further knowledge and expertise in applied mathematics and physics. You will develop specific knowledge and skills relating to:

Mathematics:

- Sequences, series and approximations
- Statistics
- Partial Differential Equations
- Matrices

Physics:

- Particle physics and cosmology
- Electromagnetic waves and the EM Spectrum
- Nature of light
- Reflection, refraction and diffraction of light and lenses.

In this subject you will gain advanced skills in mathematics and physics. You will develop specialised knowledge and skills relating to:

Mathematics

- Functions and Coordinates
- Eigenvectors and Eigenvalues
- Introduction to Comsol Simulation Program

Physics

- Elements and compounds
- Quantum Mechanics
- Nuclear Physics.

RE012-Electrical Engineering

In this subject you will learn about basic principles of electrical engineering. You will develop a range of foundation knowledge and skills relating to:

- Notation and units
- Circuit topologies

Direct current (DC) circuit principles:

- Voltage, current, power, resistance, conductance
- Ohm's Law; Kirchhoff voltage and current laws
- Series and parallel configurations
- Linearity and Superposition
- Thévenin and Norton equivalent circuits (simple cases)
- Nodal and mesh analysis (simple cases)
- Maximum power transfer
- Capacitors
- Passive and switched resistor-capacitor (RC) circuits
- Inductors
- Passive and switched resistor-inductor (RL) circuits
- Diodes

Alternating current (AC) circuit principles:

- Amplitude, frequency and phase
- Voltage
- Current and power in resistors, inductors & capacitors
- Time domain analysis of ac circuits
- Review of complex numbers
- Phasors and phasor notation
- Complex impedance and admittance
- Thévenin and Norton equivalents (simple cases)
- AC power (real, reactive, complex)
- Root-mean-square (RMS) values
- Maximum power transfer.

In this subject you will build on basic engineering knowledge gained in previous and develop further knowledge and skills relating to electrical engineering:

Circuit analysis:

- DC and AC Network theorems (Kirchhoff's, Superposition)
- Resonance
- Magnetically coupled circuits

Communications and signalling processing and applications:

- Analogue and digital communications principles
- Filters
- Amplifiers and attenuators
- Communication protocols

Analogue and digital communication systems and control circuits:

- Telemetry and monitoring systems
- Control systems and applications.

RE010-Engineering Materials

In this subject you will learn about the structure, properties and usage of a variety of materials used in engineering applications. You will develop specialised knowledge relating to:

- Material structure and properties
- Mechanical properties
- Metals - ferrous and non-ferrous
- Polymers
- Ceramics
- Composites, concrete, other
- Basic destructive testing
- Steel – FeC (Iron/Carbon), heat treatment
- Casting - perm/non-perm
- Forming - hot, cold
- Processes - PowderM, welding, Rapid Proto
- Polymer processes - IM, BM, extrus, thermoset, composites
- Joining - fasteners, weld, non-fusion
- Corrosion
- Surface treatments - plating, coatings, peening, anodising
- Non-destructive testing
- Quality assurance and control, certified testing, safety, materials safety data sheets (MSDS)
- Economic and environmental issues - production/recycling.

RE011-Civil & Mechanical Engineering

In this subject you will learn the basics about mechanical and civil engineering principles. You will develop knowledge and applied skills relating to:

- Reactions at beam supports
- Force couples
- Shear and bending in beams
- Analysis of trusses
- Axial tension and compression
- Direct shear
- Bolted connections
- Welded connections
- Concrete structures
- Torsion
- Thermal stresses
- Basic properties of fluids
- Fluid system components (friction and losses)
- Fluid statics (storage of energy)
- Fluid flow (hydro systems)
- Fluid power (wind and wave)
- Forces developed by flowing fluids (turbines).

In this subject you will learn about advanced mechanical and civil engineering principles. You will develop specialised knowledge and skills relating to:

- Dynamics of motion
- Momentum, Energy and Power
- Mechanical Vibration
- Balance and reaction of rotating masses
- Stress and Strain
- Strain Energy and dynamic loads
- Centroid and second moment of area
- Bending and sheer in beams and shafts
- Combined Stress
- Beam Deflection
- Concrete Structures
- Reynolds number and flow regime
- Head loss in pipes and fittings
- Pipe flow series and parallel
- Fluid machinery (Wind and wave energy)
- Pumping Systems (Hydro energy storage systems).

RE013 Electrical Machines

In this subject you will learn basic principles of electrical machinery. You will develop specialised knowledge and skills relating to:

Transformers:

- Transformer Principles and Construction
- Efficiency
- Impedance
- Equivalent circuit
- Polarity
- Vector groups
- Parallel operations
- Special Transformers (Auto and Instrument etc)

Induction Motors:

- Principle of Induction Motor
- Construction and operation of Squirrel Cage Induction Motors (SCIM) and Wound Rotor Induction Motors (WRIM)
- Operation and characteristics
- Induction Generator
- Single Phase Induction Motor

Synchronous Machines:

- Principles of operation
- Characteristics
- Motors
- Alternators

DC Machines:

- Principles of operation
- Shunt Series Compound Machines
- Characteristics

Single Phase and Special Motors:

- Split Phase motor
- Capacitor Sturt/Run motor

- Shaded Pole motor
- Universal motor
- Hysteresis motor
- Stepper motors
- Brushless DC motors
- Permanent magnet motors
- Variable reluctance motors
- Stepper motors
- Brushless DC motors

Electronic Control of Motors

- DC Motors
- AC Motors.

RE014-Electronics Control

In this subject you will learn about electronics and power control. You will develop specialised knowledge and skills relating to:

Semiconductors, diodes, transistors and integrated circuits:

- Semiconductor materials and junctions
- Diode construction, operation, ratings and applications
- Transistor construction, operation, ratings and applications
- Integrated circuit construction, operation, ratings and applications especially as related to operational amplifiers

Linear regulated dc power supplies:

- Basic power supplies (ac to dc and dc to dc), circuits and applications
- Regulation requirements and applications

Switching power control circuits:

- Basic types, operation
- Critical issues, solutions and applications

Digital electronics

- Digital logic, circuits and power control applications

Power Inverters (DC to AC):

- Basic types, operation
- Critical issues, solutions and applications.

RE015-Electrical Practice

In this subject you will learn about the practices of an engineering professional within a multidisciplinary framework. You will develop basic knowledge and skills relating to electrical and other engineering specialisations, including:

Introduction to the Regulatory System:

- Electricity Act
- Electricity Regulation Australian
- Standards State Regulators
- Workplace Health and Safety
- Engineers Code of Ethics

Drawings And Specifications:

- Drawing Interpretation
- Overview of Computer Aided Design (CAD)
- Writing a Specification

Generation and Distribution:

- Generating Plant
- Transmission Grid
- Substations

Fasteners and Fastening Methods:

- Methods of securing electrical equipment to various surfaces

Wiring Systems:

- Load Calculations
- Max. Demand
- Cables and Systems
- AS3008

Control and Protection:

- Earthing
- Protection for safety
- Faults and overloads
- Protective devices and methods

Illumination:

- Basic Lighting Concepts
- Vision and Colour
- Lamps and luminaires
- Control
- Photometric calculations

Emergency Systems:

- Batteries
- Emergency Lighting
- Fire/Smoke detection systems.

RE016-Design & Management

In this subject you will learn the fundamentals of engineering management. You will develop foundation knowledge and skills relating to:

Foundation Engineering Management:

- Management past and present
- Management versus leadership
- Managing technology
- Management processes
- Management decision making / problem solving

Engineering in society:

- Role and social responsibilities of engineering
- Engineering ethics / professional practice
- Sustainability management
- Managing innovation
- Engineers in business
- People and organisations:
- Leadership
- Culture in organisations
- Human resource management
- Building interpersonal and communication skills
- Workplace health and safety
- Organisational structures

Managing projects:

- Project team dynamics
- Project lifecycle and phases
- Client management and contracts
- Project scoping and planning
- Project resources (human, financial, physical etc.)
- Project task analysis and budgeting
- Project task control
- Project finalisation

Advanced Study

Bachelor of Engineering (Renewable Energy Engineering)

Associate Degree in Applied Engineering (Renewable Energy Engineering)

(4 points / unit x 15 units = 60 points)

Year 1	BE (RE)Units of UNSW
RE101	Mathematics 1A (MATH1131)
RE102	Mathematics 1B (MATH1231)
RE103	Physics 1A (PHYS1121)
RE104	Physics 1B (PHYS1221)
RE105	Engineering Design (ENGG1000)
RE106	Electronics & Telecomm Engineering (1) (ELEC1111)
RE107	Sustainable Energy (SOLA1070)

Year 2	BE (RE)Units of UNSW
RE201	Electronics & Telecomm Engineering (2) (ELEC1111)
RE202	Numerical Methods & Statistics (MATH2089)
RE203	Engineering Materials and Chemistry (MATS1101)
RE204	Project in PV and Solar Energy (SOLA2051)
RE205	Sustainable & Renewable. Energy. Technology (SOLA2053)
RE206	Introduction to Electronics Devices (SOLA2060)
RE207	Applied Photo Voltaics (SOLA2540)
RE208	Project Presentation

Bachelor of Applied Engineering (Renewable Energy Engineering)

(4 points / unit x 15 units = 60 points+ Thesis)

Year 3	BE (RE)Units of UNSW
RE301	Low Energy Buildings and PV (SOLA3010)
RE302	PV Technology & Manufacturing (SOLA3020)
RE303	Software Engineering (COMP3111)
RE304	Analogue Electronics (ELEC2133)
RE305	Power Electronics (ELEC4614)

RE306	Electromagnetic Engineering (ELEC3115)
RE307	Circuits and Signals (ELEC2134)
RE308	Control Systems (ELEC3114)

Year 4	BE (RE)Units of UNSW
RE401	Fluid Mechanics (MMAN2600)
RE402	Thermodynamics (MMAN2700)
RE403	Computational Fluid Dynamics (MECH9620)
RE404	Strategic Leadership & Ethics (ELEC4122)
RE405	Grid-Connect PV System (SOLA4012)
RE406	Wind Energy Converters (SOLA5053)
RE407	Semiconductor Devices (SOLA5055)
RE408	Thesis

Total 120 Points + Thesis for award of Bachelor of Engineering (Renewable Energy Engineering)

PATHWAY (1)

PUBLIC SEMINAR + ASSIGNMENT ---Diploma in Renewable Energy Engineering--------then continue ---- BE (RE)

OR

Diploma in Renewable Energy Engineering (International)

--------then continue ---- BE (RE)

PATHWAY (2)

PUBLIC SEMINAR + ASSIGNMENT --- Diploma in Renewable Energy Engineering

OR

Diploma in Renewable Energy Engineering (International)

Then continue to do Advanced Diploma in Electro-Mechanical Engineering (Renewable Energy Construction)

Then do the advanced units in BE (RE) & complete BE (RE)

Detailed description of subjects in BE (Renewable Energy Engineering)

RE101-Mathematics 1A - MATH1131

Description

- Complex numbers, vectors and vector geometry, linear equations, matrices and matrix algebra, determinants. Functions, limits, continuity and differentiability, integration, polar coordinates, logarithms and exponentials, hyperbolic functions. Introduction to computing and the Maple symbolic algebra package.

  Assumed knowledge: HSC Mathematics Extension 1. Students will be expected to have achieved a combined mark of at least 100 in Mathematics and Mathematics Extension 1

RE102-Mathematics 1B - MATH1231.

Description

- Vector spaces, linear transformations, eigenvalues and eigenvectors. Introduction to probability and statistics. Integration techniques, solution of ordinary differential equations, sequences, series, applications of integration.

RE103-Physics 1A - PHYS1121.

Description

- This course provides an introduction to Physics. It is a calculus based course. The course is examined at two levels, with Physics 1A being the lower of the two levels.
  Mechanics: particle kinematics in one dimension, motion in two and three dimensions, particle dynamics, work and energy, momentum and collisions.
  Thermal physics: temperature, kinetic theory and the ideal gas, heat and the first law of thermodynamics. Waves: oscillations, wave motion, sound waves.

RE104-Physics 1B - PHYS1221

Description

- This is the second of the two introductory courses in Physics. It is a calculus based course. The course is examined at two levels, with Physics 1A being the lower of the two levels.

  Electricity and Magnetism: electrostatics, Gauss's law, electric potential, capacitance and dielectrics, magnetic fields and magnetism, Ampere's and Biot-Savart law, Faraday's law,

induction and inductance. Physical Optics: light, interference, diffraction, gratings and spectra, polarization. Introductory quantum theory and the wave nature of matter. Introductory solid state and semiconductor physics: simple energy band picture.

RE105-Introduction to Engineering Design and Innovation - ENGG1000

Description

- In this course, students will experience first hand one of the major things that engineers do: designing and building creative solutions to problems. They will learn to think the way that engineers think, coming up with good solutions to problems despite being limited by budget, time and resources, the requirement to also meet environmental and social objectives and of course the limitations of the laws of physics. This will help them to appreciate the central ideas of engineering design as an on-time, on-budget and fit for purpose solution to a poorly specified, open-ended problem. They will be assigned to a team to work over a ten week period to solve a practical problem. The projects on offer change from year to year. In doing all this they will start to build key skills for engineers that will be called upon repeatedly in their academic and professional lives, including concept development, critical thinking and evaluation skills, clear communication, research and information literacy skills and the skills involved in successfully functioning within a team environment to complete a given task.

RE106-Electrical and Telecommunications Engineering - ELEC1111

Description

- An introduction to the art and science of Electrical Engineering and Telecommunications, and the systems approach to engineering design. Examples of electrical and electronic devices, circuits and analogue and digital systems. Analogue circuit analysis. Digital electronics and combinatorial logic. Transformers, power sources and electrical energy systems including DC and AC motors. Feedback control. Telecommunications systems, including frequency, spectra, modulation and Internet systems. Safety standards.

RE107-Sustainable Energy - SOLA1070

Description

- Students will be introduced to the concept of energy in its different forms through a range of lectures and demonstrations. These demonstrations will also introduce the concepts of energy storage, energy efficiency, energy conversion and sustainability. An overview is given of issues surrounding sustainable energy for future generations. The status and impact of

present day sources of energy are covered, including the sustainability of fossil fuel reserves and the impact of pollution and greenhouse gas emissions on the environment. Energy efficiency, as an important way to conserve our natural fuel reserves and reduce environmental and financial costs, is covered. Building design, appliance efficiency and other issues related to the smart and efficient use of energy are covered. Trends in the renewable energy industry are considered. An overview is given of renewable energy sources, their harnessing and their conversion into electricity via various technologies. In particular, an overview is given of solar cells and their applications with emphasis on visual presentations and interesting case histories, including some fascinating mistakes and disasters. Students will also explore the design and fabrication of silicon solar cells while working as engineers on the "Virtual Solar Cell Production Line".

RE201-Electrical and Telecommunications Engineering (2)- ELEC1111

Description

- An introduction to the art and science of Electrical Engineering and Telecommunications, and the systems approach to engineering design. Examples of electrical and electronic devices, circuits and analogue and digital systems. Analogue circuit analysis. Digital electronics and combinatorial logic. Transformers, power sources and electrical energy systems including DC and AC motors. Feedback control. Telecommunications systems, including frequency, spectra, modulation and Internet systems. Safety standards.

RE202-Numerical Methods and Statistics - MATH2089

Description

- Numerical Methods: Numerical differentiation, integration, interpolation and curve fitting (regression analysis). Solution of linear and non-linear algebraic equations. Matrix operations, and applications to solution of systems of linear equations, elimination and tridiagonal matrix algorithms. Introduction to numerical solution of ordinary and partial differential equations.
  Statistics: Exploratory data analysis. Probability and distribution theory including binomial, Poisson and normal. Large sample theory including the Central Limit Theorem. Statistical inference including estimation, confidence intervals and hypothesis testing. One-sample and two-sample tests. Linear regression. Analysis of variance. Design and analysis of experiments. Applications will be drawn from mechanical, mining, photovoltaic and chemical engineering and surveying. Matlab will be used in this course.

RE203-Engineering Materials and Chemistry - MATS1101

Description

- The course covers: stoichiometry, atomic and molecular structure, states of matter, equilibrium, oxidation and reduction, electrochemistry; an introduction to organic chemistry and polymers; microstructure and structure-property relationships of the main types of engineering materials (metals, ceramics, polymers and composites); micromechanisms of elastic and plastic deformation; fracture mechanisms for ductile, brittle, creep and fatigue modes of failure in service; corrosion; metal forming by casting and wrought processes; phase equilibria of alloys; microstructural control by thermomechanical processing and application to commercial engineering materials.

RE204-Project in Photovoltaics and Solar Energy 1 - SOLA2051

Description

- .The main emphasis of the second year group project course is hands-on project engineering. The course has a lecture component covering project engineering, report writing, presentation skills, occupational health and safety, and theoretical principles specific to the project work to be undertaken. The project comprises a research component, a planning and design component, a significant hands-on component, and a presentation/reporting component.

RE205-Sustainable & Renewable Energy Technologies - SOLA2053

Description

- This course includes an introduction to issues in sustainable and renewable energy, including environmental impact, resource depletion, basic engineering economic analysis, embodied energy, payback times and the integration of renewable energy sources with conventional infrastructure. The course reviews key concepts such as basic thermodynamics, heat transfer and fluid dynamics to allow analysis of the physical operation of energy generation systems, with key renewable energy sources and generation systems examined including wind, biomass, solar thermal, hydroelectric, geothermal, tidal and wave energy. The course emphasises engineering problem solving, design skills and creative thinking.

RE206-Introduction to Electronic Devices - SOLA2060

Description

- Operation, circuit characteristics, basic design principles and applications of a range of semiconductor devices. Material covered includes pn junction theory, bipolar junction transistors, avalanche diodes, MOSFET's, basic digital circuits, solar cells, light emitting diodes, semiconducting lasers and photodetectors.

RE207-Applied Photovoltaics - SOLA2540

Description

- Photovoltaic (PV) devices convert sunlight directly to electricity with low levels of greenhouse gas emissions per kWh of electricity produced. This course covers factors important to the operation, design and construction of solar cells and PV system design. Students will learn principle of operation of solar cells, loss mechanisms and design features to improve efficiency of solar cells and modules. In addition, students are introduced to application and design of PV systems. System design is focused on stand-alone PV systems but other specific applications such as Remote Area Power Supply systems and Grid-Connected PV systems are also discussed. Importantly, simulation and laboratory exercises are used to reinforce an understanding of modelling and characterisation of solar cells and PV modules.

RE301-Low Energy Buildings and Photovoltaics - SOLA3010

Description

- There is currently significant interest in reducing energy use and greenhouse gas production in buildings by designing buildings that are climate-appropriate, implementing energy efficiency measures and producing energy from renewable sources. Prediction of building thermal, lighting performance and solar access, and techniques for energy efficient design will be introduced, with a focus on residential buildings. A competency in the use of building energy simulation software will be developed.

  Photovoltaics (PV) is one of the few renewable electricity generation options that can be readily used in urban areas and has no environmental impacts at the site. This course will examine the integration of PV modules into the building envelope. Technical issues associated with the use of PV in buildings and the urban environment, such as heat transfer

processes, partial shading, and mismatch and system siting, sizing and configuration will be investigated. System performance assessment and prediction will be introduced.

RE302-Photovoltaic Technology and Manufacturing - SOLA3020

Description

- Sufficient theory relating to the operating principles of solar cells is covered to give an appreciation of the strengths and weaknesses of the dominant commercial cell technologies. Trends in commercial cell technology and the corresponding manufacturing processes and environment are considered. The impact of various processing and device parameters on performance, yields and product reliability are studied. Insight is given into complete production processes for both screen-printed solar cells and buried contact solar cells. In-line quality control techniques are studied with laboratory classes used to give students first-hand experience in their use as well as exposing them to manufacturing processes. Students will also be given the opportunity to take control of the "virtual production line" to adjust the equipment controls and processing parameters to try and optimize performance and maximize yields, etc. In-line quality control procedures are available to the student to aid in this optimization and will prove to be particularly useful in identifying and rectifying computer generated faults associated with the production. Other laboratory work focuses on the use, measurement and analysis of encapsulated modules of cells. Modules with a range of faults are examined and techniques for fault diagnosis developed.

- Solar cells harness the energy of sunlight and convert it directly into electricity. This course covers factors important in the understanding, design and characterisation of solar cells. It will extend students’ existing semiconductor device understanding and provide a sound basis in key practical processes such as solid state diffusion and device contacting. Students are introduced to a range of laboratory-based and commercial solar cell technologies in this course including silicon (wafer-based) technologies, thin film technologies, multi-junction, concentrator and third generation concepts and technologies. Simulation exercises, using the PC1D program, are used to reinforce an understanding of device physics and the different solar cell technologies. In addition, students will learn about characterisation techniques that will enable them to study solar cells with regard to their effects on spectral response, temperature sensitivity, resistive losses, current generation and open-circuit voltages.

RE303-Software Construction: Techniques and Tools - COMP2041

Description

- Software system decomposition and design. Overview of the software development life-cycle. Command languages. Version control and configuration management, programming for reliability. Testing and debugging techniques. Profiling and code improvement techniques. Practical work involving programming-in-the-large.

RE304-Analogue Electronics - ELEC2133

Description

- Device physics of diodes, BJTs and MOSFETs. Nonlinear transistor models: Ebers-Moll, transport. Full and simplified models of BJTs and MOSFETs (inc. small-signal models). Zener and Schottky diodes. DC biasing, biasing using current sources, operating point, large-signal analysis. Linearisation, small-signal analysis. Input- and output impedances, power gain. Two-ports. Feed-back, effects of feed-back; stability and compensation techniques. Circuits with non-ideal op-amps. Common base, emitter and collector amplifiers; differential pairs. Multistage amplifiers, cascades, cascodes. AC response of 1-stage amplifiers, Miller effect. Non-linear circuits: oscillator, Schmitt trigger. A-D and D-A converter principles

- Non-ideal effects in electronic circuits and systems: Noise; device noise, external noise, CMRR, PSRR, mixed A/D. Distortion; non-linearity, dynamic range, saturation. Stability and performance sensitivity to parameter variations. Some simple design for stability and performance. Design optimisation. Power-supply distribution and decoupling. Mixed analogue/digital system design, including grounding and shielding. Device modelling in SPICE. Data sheet interpretation. Design of analogue and digital circuits and system components: Non-linear circuits; oscillators, PLLs, multipliers, AGCs, schmitt triggers. Introduction to filter design; active filters; op-amp. Sensors and actuators, PTAT; instrumentation amplifiers and signal conditioning. Low-level design and optimisation of digital CMOS gates. Gate delay, power dissipation, noise margins, fan-out. Introduction to integrated circuit design.
  Thermal consideration, power supplies, reliability, uC watchdongs

RE305-Power Electronics - ELEC4614

Description

- Power semiconductor switching devices and their limitations; Switching characteristics, protection and limitations of various types of power semiconductor switches; Elementary concepts in power electronics; Application of power electronic converters in energy conversion, utility applications and power supplies and utilizations; Diode rectifier circuits, multi-pulse rectifiers, input and output waveform characterization, filter design. Non isolated DC-DC converters, circuits topologies, characteristics with continuous and discontinuous conduction, circuit design and control considerations, Quadrant operation; Isolated DC-DC converters, transformer design issues, core resetting; Single-phase and three-phase DC-AC inverters, modulation strategies, output waveform analysis and filter design; Utility interfaces; High power applications; Converter system implementation

RE306-Electromagnetic Engineering - ELEC3115

Description

- Review of vector calculus, Electric Fields: Coulomb's and Gauss's laws and Maxwell's equations, Electric potential, Laplace's and Poisson's equations; Magnetic Fields: Biot-Savart law, Vector potential and Ampere's law and Maxwell's equations;Application of Gauss's law; Solution of Poisson's and Laplace's equations for electric field; Boundary value problems and method of images; Dielectric materials, capacitance, electrostatic energy and forces, losses; Field and current density, conductance; Application of Ampere's law; Magnetic materials, inductance, coupling in magnetic circuits; Magnetic energy and forces.Application of Faraday's law, transformers; Skin effect and skin depth, hysteresis and eddy current losses. Electromagnetic spectrum. Time-varying fields and Maxwell's equations: forms, boundary conditions. Plane electromagnetic waves in lossless/lossy media: polarization, group velocity dispersion, energy flows, Poynting vector, reflection/refraction at boundary. Transmission lines: wave characteristics, impedance and matching.Waveguides: modal analysis of rectangular metallic waveguides. Antennas: antenna patterns and parameters, linear dipole, antenna array.

RE307-Circuits and Signals - ELEC2134

Description

- Circuit elements - energy storage and dynamics. Ohm's Law, Kirchhoff's Laws, simplifying networks of series/parallel circuit elements. Nodal analysis. Thivenin and Norton equivalents, superposition. Operational amplifiers. Transient response in first-order RLC circuits. Solutions via solving differential equations. Transient response in second-order RLC circuits. State equations, zero input response, zero state response. Using MATLAB to solve state equations. Sinusoidal signal: frequency, angular frequency, peak value, RMS value, and phase. DC vs AC, average vs RMS values. AC circuits with sinusoidal inputs in steady state. Use of phasor and complex impedance in AC circuit analysis. AC power (real, reactive, apparent), power factor, leading/lagging. Resonance. Transformers and coupled coils. Laplace transforms of signals and circuits. Network functions and frequency response. Periodic signals and Fourier series. Introduction to filter design. Introduction to nonlinear circuits and small signal analysis.

RE308-Control Systems - ELEC3114

Description

- Recognition of what a control system is, and the distinction between simple and complex control systems. Analysis and design tools for dealing with simple control systems up to second order: Differential equations, Laplace transforms, transfer functions, poles and zeros, state space models, modeling, first and second order systems, stability, steady-state errors, root locus, Bode and Nyquist plots, transient response analysis and design, PID control, lead-lag compensation, simple frequency response techniques. Stabilising feedback control for transfer function and state-space models.

RE401-Fluid Mechanics - MMAN2600

Description

- Fluid properties. Fluids in static equilibrium. Buoyancy. Pressures in accelerating fluid systems. Steady flow energy equations. Flow measurement. Momentum analysis. Dimensional analysis and similarity. Pipe flow. Incompressible laminar and turbulent flow in pipes; friction factor. Laminar flow between parallel plates and in ducts. Elementary boundary layer flow; skin friction and drag. Pumps and turbines. Pump and pipeline system characteristics.

RE402-Thermodynamics - MMAN2700

Description

- Thermodynamic concepts, systems, property, state, path, process. Work and heat. Properties of pure substances, tables of properties and equations of state. First law of thermodynamics. Analysis of closed and open systems. Second law of thermodynamics, Carnot cycle, Clausius inequality, entropy, irreversibility, isentropic efficiencies. Air-standard cycles. Vapour cycles.

RE403-Computational Fluid Dynamics - MECH9620

Description

- Incompressible flow: primitive equations, stream function, vorticity equations. The conservative property. Stability analysis. Explicit, implicit methods. Upwind differences. SOR methods. Fourier series methods. Pressure, temperature solutions. Solving the primitive equations.

RE404-Strategic Leadership & Ethics - ELEC4122

Description

- Theories of leadership; leadership of teams. Organisational behaviour. Strategic planning. Uncertainty and risk. The interaction of laws with engineering projects and innovations. The role of engineering in society; assessment of innovation in processes and products. Engineering ethics principles and practice: an introduction to ethical systems; the application of ethical frameworks to engineering practice with particular reference to electrical engineering and computing; codes of ethics in the professions; social, political, environmental and economic considerations.

RE405-Grid-Connected Photovoltaic Systems - SOLA4012

Description

- This course familiarizes students with issues relevant to the use of photovoltaics in systems connected to the electricity distribution network with the aim of attaining competency in design and specification. The types of systems considered include residential, building

integrated, distributed grid-support and central station. System components, design, operation, safety, standards and economics are addressed making extensive use of past field experience and site visits where appropriate.

RE406-Wind Energy Converters - SOLA5053

Description

- This course will cover the principles of wind energy and wind power, as well as the design and operation of different types of wind energy converters. It will include machines for water pumping, remote area power supply and grid electricity generation. It will cover issues of site selection, monitoring and analysing wind data, estimating output from wind generators, integrating wind generators into hybrid power systems or the grid, economics, standards and environmental impacts.

RE407-Semiconductor Devices - SOLA5055

.Description

- This course describes the operating principles of modern semiconductor devices, relates terminal properties to their internal structure, and gives an understanding of how terminal properties will change with operating conditions. Devices covered include p-n junction diodes, solar cells, bipolar junction transistors, field effect transistors (MOSFETs), light-emitting diodes and semiconductor lasers, with emphasis on photovoltaic (semiconductor solar cells) and photonic (semiconductor LEDs and lasers) applications. This course may be taught concurrently with SOLA9005.

MASTER OF SCIENCE (RENEWABLE ENERGY) LEARNING SUPPORT WEBSITE

www.mongroupsydney1.com/redegree.pdf

Part (1) Preliminary Course

ENEGY101A FOUNDATION STUDIES IN RENEWABLE ENERGY AND SUSTAINABILITY

RE001 Audio.zip (398.77MB)
http://www.filefactory.com/file/bivi3ahp1dj/n/RE001_Audio.zip
RE001+ENERGY 101A.pptx (209.26MB)
http://www.filefactory.com/file/2uf9ao1a2vlb/n/RE001+ENERGY_101A.pptx

AEEGY202A RENEWABLE ENERGY RESOURCES ANALYSIS

AEEGY202A+RE005 Part 1.ppt (53.86MB)
http://www.filefactory.com/file/77y5i78hdzcn/n/AEEGY202A+RE005_Part_1.ppt

AEEGY202A+RE005 Part 1 Audio.zip (41.66MB)
http://www.filefactory.com/file/3bpvzmy8xbzd/n/AEEGY202A+RE005_Part_1_Audio.zip

AEEGY202A+RE005 Part 2.pptx (39.15MB) (A)
http://www.filefactory.com/file/64zy2zn488hz/n/AEEGY202A+RE005_Part_2.pptx

AEEGY202A+RE005 Part 2 Audio.zip (45.64MB) (A)
http://www.filefactory.com/file/28ezfxr81nrd/n/AEEGY202A+RE005_Part_2_Audio.zip

AEEGY202A+RE005 Part 2B.pptx (93.09MB)
http://www.filefactory.com/file/64klwvxw0ihr/n/AEEGY202A+RE005_Part_2B.pptx

AEEGY202A+RE005 Part 2B Audio.zip (81.25MB)
http://www.filefactory.com/file/5bj0lat5uj9n/n/AEEGY202A+RE005_Part_2B_Audio.zip

AEEGY202A+RE005 Part 3.pptx (118.93MB)
http://www.filefactory.com/file/2p5ermf05afl/n/AEEGY202A+RE005_Part_3.pptx

AEEGY202A+RE005 Part 3 Audio.zip (64.72MB)
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AEEGY202A+RE005 Part 4.pptx (123.38MB)
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http://www.filefactory.com/file/56apturehhrt/n/AEEGY202A+RE005_Part_5.pptx

AEEGY202A+RE005 Part 5 Audio.zip (109.2MB)
http://www.filefactory.com/file/4ta6mux5uzk7/n/AEEGY202A+RE005_Part_5_Audio.zip

AEEGY202A+RE005 Part 5a.pptx (181.83MB)
http://www.filefactory.com/file/4o9q6qr2xr0r/n/AEEGY202A+RE005_Part_5a.pptx

AEEGY202A+RE005 Part 5a Audio.zip (82.43MB)
http://www.filefactory.com/file/13akyrczg9tf/n/AEEGY202A+RE005_Part_5a_Audio.zip

AEEGY202A+RE005 Part 6.pptx (140.55MB)
http://www.filefactory.com/file/6ecfxxbaih11/n/AEEGY202A+RE005_Part_6.pptx

AEEGY202A+RE005 Part 7.pptx (37.26MB)
http://www.filefactory.com/file/6kw4yv0yd4lh/n/AEEGY202A+RE005_Part_7.pptx

AEEGY202A+RE005 Part 7 Audio.zip (12.28MB)
http://www.filefactory.com/file/44xii255egpr/n/AEEGY202A+RE005_Part_7_Audio.zip

AEEGY202A+RE005 Part 6 Audio.zip (56.4MB)
http://www.filefactory.com/file/31cfsc70cqn7/n/AEEGY202A+RE005_Part_6_Audio.zip

AEEGY 203A WIND ENERGY CONVERSION SYSTEM

AEEGY202A+RE005 Part 4.pptx (123.38MB)
http://www.filefactory.com/file/sbvdq1ehtr9/n/AEEGY202A+RE005_Part_4.pptx

AEEGY 201A ENERGY STORAGE SYSTEM

AEEGY201A-RE004 Part 1.pptx (84.17MB)
http://www.filefactory.com/file/3zjf4agidtd1/n/AEEGY201A-RE004_Part_1.pptx

AEEGY201A-RE004 Part 1 Audio.zip (98.34MB)
http://www.filefactory.com/file/2cq8kk74lcch/n/AEEGY201A-RE004_Part_1_Audio.zip

AEEGY201A-RE004 Part 2 Audio.zip (78.24MB)
http://www.filefactory.com/file/59f24emes5d5/n/AEEGY201A-RE004_Part_2_Audio.zip

AEEGY201A-RE004 Part 2.pptx (81.12MB)
http://www.filefactory.com/file/593fqr2l92gl/n/AEEGY201A-RE004_Part_2.pptx

AEEGY201A-RE004 Part 3.pptx (122.11MB)
http://www.filefactory.com/file/3sb7u9ni7bx1/n/AEEGY201A-RE004_Part_3.pptx

AEEGY201A-RE004 Part 3 Audio.zip (54.66MB)
http://www.filefactory.com/file/99lsa2qr9j1/n/AEEGY201A-RE004_Part_3_Audio.zip

AEEGY 102A SOLAR AND THERMAL ENERGY SYSTEM

AEEGY102A-Solar & Thermal Energy System-RE003 Part 1.pptx (86.74MB)
http://www.filefactory.com/file/4pfhys6r4f5v/n/AEEGY102A-Solar_&_Thermal_Energy_System-RE003_Part_1.pptx

AEEGY102A Solar & thermal Energy system-RE003 Audio Part 1.zip (78.57MB)
http://www.filefactory.com/file/3g7xyhh758iv/n/AEEGY102A_Solar_&_thermal_Energy_system-RE003_Audio_Part_1.zip

AEEGY102A Solar & thermal Energy system-RE003 Audio Part 2.zip (114.71MB)
http://www.filefactory.com/file/6j6d6ba68kmt/n/AEEGY102A_Solar_&_thermal_Energy_system-RE003_Audio_Part_2.zip

AEEGY102A Solar & thermal Energy system-RE003 Audio Part 3.zip (101.76MB)
http://www.filefactory.com/file/6fpzm5yhalkb/n/AEEGY102A_Solar_&_thermal_Energy_system-RE003_Audio_Part_3.zip

AEEGY 101A GRID CONNECTED PHOTOVOLTAICS POWER SYSTEM

AEEGY101A Grid Connected Inverter-RE001 Part 1.pptx (200.1MB)
http://www.filefactory.com/file/7gj00wjnbhgl/n/AEEGY101A_Grid_Connected_Inverter-RE001_Part_1.pptx

AEEGY101A Grid Connected Inverter-RE001 Part 2.pptx (42.84MB)
http://www.filefactory.com/file/2inbe45j7daf/n/AEEGY101A_Grid_Connected_Inverter-RE001_Part_2.pptx

AEEGY101A Grid Connected PV Power System-RE002 Audio 1.zip (87.52MB)
http://www.filefactory.com/file/zugaz0yoa7z/n/AEEGY101A_Grid_Connected_PV_Power_System-RE002_Audio_1.zip

AEEGY101A Grid Connected PV Power System-RE002 Audio 2.zip (146.66MB)
http://www.filefactory.com/file/3rnl5ra5u1yp/n/AEEGY101A_Grid_Connected_PV_Power_System-RE002_Audio_2.zip

AEEGY101A Grid Connected PV Power System-RE002 Audio 3.zip (37.72MB)
http://www.filefactory.com/file/4t3e8rcrzcpp/n/AEEGY101A_Grid_Connected_PV_Power_System-RE002_Audio_3.zip

AEEGY 204 A ENERGY EFFICIENCY

AEEGY204A-Energy Effcy.pptx (308.2MB)
http://www.filefactory.com/file/4m2zxs94ooyh/n/AEEGY204A-Energy_Effcy.pptx

AEEGY204A-Energy Syst Effcy-RE007 Audio.zip (283.59MB)
http://www.filefactory.com/file/64pi797xv52t/n/AEEGY204A-Energy_Syst_Effcy-RE007_Audio.zip

ENEGY101A FOUNDATION STUDIES IN RENEWABLE ENERGY AND SUSTAINABILITY

Course Outline

In this subject you will learn about the areas of renewable energy technologies and sustainability. You will develop foundation knowledge relating to:

- Defining sustainability and renewable energy
- Non-technical issues in sustainability and renewable energy
- Energy basics efficiency and calculations
- Solar energy systems
- Wind energy systems
- Hydro energy systems
- Biomass energy systems
- Ocean energy systems
- Principles of sustainable living
- Moving to a sustainable economy.

Prescribed Texts:

Mackay, D.J.C. 2008, *Sustainable Energy without the Hot Air*, UIT, Cambridge, England

Study Guide

WEEK NO:	TOPICS AND ACTIVITIES
Orientation Week	**Orientation activities** Review of syllabus and assessment activities.
Week 1	• Introduction to the Subject. • The cause of Climate Change. • Global and Australian Figures. • Climate Change - The Impacts and the imperative for change. **Reading List:** • *Sustainable Energy Without the Hot air*, pp. 5-18 • *ZCA Stationary Energy Plan*, pp. 2-3
Week 2	• Energy use in Australia. • Energy conversion and efficiency. • Primary, Secondary and End Use energy. **Reading List:** • Dept. of Energy Resources and Tourism, *Energy in Australia 2012*, pp. 15-28
Week 3	• Coal, Oil, Gas and Nuclear Energy Systems. **Reading List:** • Course notes
Week 4	• Solar Energy Systems – The Solar Resource – Photovoltaics. **Reading List:** • *Sustainable Energy Without the Hot air*, pp. 38-49
Week 5	**Field Trip** • Solar Energy Systems - Solar Hot Water, Solar Air conditioning and Solar Thermal Electricity. **Reading List:** • *Sustainable Energy Without the Hot air*, pp. 38-49 • *ZCA Solar Thermal Power Basics and Solar Thermal Power fact sheets*
Week 6	• Wind Energy Systems – size of the resource, principles of operation, World and Australian wind energy. **Reading List:** • *Sustainable Energy Without the Hot air*, pp. 32-34, 186-189 • *Clean Energy Council Fact sheet on Wind Energy* **Assessment 1 due: Individual written report - 10%**
Week 7	
Week 8	• Hydro Energy Systems – size of the resource, principles of operation, World and Australian Hydro energy. **Reading List:**

WEEK NO:	TOPICS AND ACTIVITIES
	• *Sustainable Energy Without the Hot air*, pp. 55-56 and pp. 190-194 • *Clean Energy Council Fact sheet on Hydro Electricity* **Assessment 2 due: Written report on field trip - 5%**
Week 9	• Biomass • Geothermal **Reading List** • *Clean Energy Council Fact sheet on Geothermal Energy* • *Clean Energy Council Fact sheet on Bio Energy* • *Sustainable Energy Without the Hot air*, pp. 96-99
Week 10	• Ocean Energy – Wave and tidal **Reading List:** • *Sustainable Energy Without the Hot air*, pp. 73-75; pp. 81-87; pp. 307-321 • *Clean Energy Council Fact sheet on Marine Energy*
Week 11	• The imperative for Sustainability • Moving to Renewable Energy **Reading List:** • *Less is More*, pp. 205-235
Week 12	• Sustainable Building Design • Sustainable Food and Farming **Reading List:** • *Sustainable Energy Without the Hot air*, pp. 76-80 • www.yourhome.gov.au *Technical Manual*, pp. 69-127
Week 13	• Sustainable Transport • Sustainable Mining and Manufacturing **Reading List:** • *Sustainable Energy Without the Hot air*, pp. 29-31; 35-37; 118-139; 88-95 and 322-326 • *ZCA Stationary Energy Plan*, pp. 16-19 **Assessment 3 due: Collaborative written report – 30%** **Assessment 4: Presentation based on collaborative written report – 10%**
Week 14	**Study Week**
Week 15	**Examination Week B:** **Assessment 5: Written examination - 45%**

Lesson Power Points

http://www.filefactory.com/file/29b5cjy28f4p/RE001%2BENERGY%20101A.pdf

Password- **Joe2013**

Textbook

Prescribed Texts:

Mackay, D.J.C. 2008, *Sustainable Energy without the Hot Air*, UIT, Cambridge, England

http://www.filefactory.com/file/1ptdekissa69/Sustainable_energy_without_hot_air_pdf

Password- **Joe2013**

Tutorial Exercises

Further Readings

K131

http://www.filefactory.com/file/7hvv22gtz2lx/n/K131_zip

http://www.filefactory.com/file/1mr75xfm92ux/n/K032_zip

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AEEGY 101A Grid Connected Photovoltaics Power System

Course Outline

In this subject you will learn the basics about photovoltaics and grid design. You will develop knowledge and applied skills relating to:

- Solar geometry
- Solar radiation terms and measurements
- Photovoltaic cell and module characteristics
- Manufacture of photovoltaic modules
- Photovoltaic array design and characteristics
- Effects of tilt, orientation, temperature and shading
- Workplace health and safety standards, Australian and industry standards
- Inverter principles and requirements for grid-connected inverters in Australia
- Inverter and Array matching
- Wiring, Protection and Earthing
- Metering and Tariff arrangements
- Installation and Commissioning
- Maintenance.

Study Guide

Lesson Power Points

http://www.filefactory.com/file/5u2urjc3d0hx/AEEGY101A%20Grid%20Connected%20Inverter-RE001%20Part%201.pdf

Password- **Joe2013**

Textbook

Prescribed Texts:

Stapleton G & Neill S 2012, *Grid-Connected Solar Electric Systems*, Earthscan, Abingdon, Oxon

http://www.filefactory.com/file/14nwysld3g7t/Grid_Connected_Electrical_System_Te xtbook_pdf

http://www.filefactory.com/file/4lmptse2xmp1/Applied_Photovoltaics_pdf

http://www.filefactory.com/file/55cxpfou1kwt/Control_of_Power_Inverters_in_Renewable_Energy_and_Smart_Grid_Integration_pdf

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Tutorial Exercises

http://www.filefactory.com/file/59rpcqogl8ux/n/K035_Answer_sheet_doc

http://www.filefactory.com/file/6uye10nst3ad/n/K035_Test_pdf
Password- **joe2013**

Further Readings

K035Inverter K035PV_Inverter

Stage 4 Part 17.zip

http://www.filefactory.com/file/c0cc76b/n/Stage_4_Part_17.zip

K035_Tutorials.zip
Stage 4 Part 16.zip

http://www.filefactory.com/file/c0cc703/n/Stage_4_Part_16.zip

Renewable Energy-K025+K035.zip

http://www.filefactory.com/file/c0b7c5e/n/Renewable_Energy-K025_K035.zip

Video Lessons

K035 Lesson 1-Inverter principle.zip

http://www.filefactory.com/file/c0b6a01/n/K035_Lesson_1-Inverter_principle.zip

K035 Lesson 2-Modified sine wave inverter.zip

http://www.filefactory.com/file/c0b6a26/n/K035_Lesson_2-Modified_sine_wave_inverter.zip

K035 Lesson 3-Pulse width modulation.zip

http://www.filefactory.com/file/c0b6a33/n/K035_Lesson_3-Pulse_width_modulation.zip

K035 Lesson 4-PV Inverter.zip

http://www.filefactory.com/file/c0b6a6c/n/K035_Lesson_4-PV_Inverter.zip

K035 Lesson-5 MOSFET Driver.zip

http://www.filefactory.com/file/c0b5978/n/K035_Lesson-5_MOSFET_Driver.zip

K035 Lesson-6 PWM Inverter.zip

http://www.filefactory.com/file/c0b6ac2/n/K035_Lesson-6_PWM_Inverter.zip

K035 Lesson-7 Grid Connected Inverter.zip

http://www.filefactory.com/file/c108253/n/K035_Lesson-7_Grid_Connected_Inverter.zip

K035 Lesson-8 Inverter Power Flow Model.zip

http://www.filefactory.com/file/c0b6aff/n/K035_Lesson-8_Inverter_Power_Flow_Model.zip

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Online Practicals

Practicals Work performance and practical instruction

Click HERE to download practicals

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OTHER RESOURCES

K025 Resources

Stage 2 Part 5.zip
http://www.filefactory.com/file/c0cc187/n/Stage_2_Part_5.zip
Protection_1
Protection_2
PV_System_installation_Overview_-_PV_Power_Systems
PVSoftware
Regulatory_Requirement
SPS_Components

Stage 2 Part 2A.zip
http://www.filefactory.com/file/c0cca4a/n/Stage_2_Part_2A.zip
Electrical_safe_working
Electrical_trade_review_questions_and_answers
ELV_Accessories_-_SPS_Components
ELV_Cable_termination

Stage 3 Part 1B.zip
http://www.filefactory.com/file/c0ccc42/n/Stage_3_Part_1B.zip
Cable_CktProt_E_Accessories

Cable_Conduit_E_Accessories

AEEGY 102A Solar and Thermal Energy Systems

Course Outline

In this subject you will learn about solar and thermal energy systems. You will develop specialised knowledge and applied skills relating to:

- Solar energy utilisation - introduction and overview
- Heating load calculations
- Thermal environment – solar radiation, shading and energy conservation
- Solar collectors
- Collector requirements for some specific applications
- Thermal energy storage
- Solar cooling
- Mechanical Power generation
- Sizing of heating, cooling and mechanical power generation components
- Ancillary equipment
- Equipment specification and installation
- Performance analysis.

Study Guide

Lesson Power Points

Part 1

http://www.filefactory.com/file/c9acnzqhs13/AEEGY102A%2BRE003%20Part%202-ME108.pdf

Part 2

http://www.filefactory.com/file/2i3h1v6qqkuv/AEEGY102A%2BRE003%20Part%203-Fact_sheet_-_Geothermal_Energy.pdf

Part 3

http://www.filefactory.com/file/57k90jem46f/AEEGY102A-Solar%20%26amp%3B%20Thermal%20Energy%20System-RE003%20Part%201.pdf

Password- Joe2013

Textbook

Prescribed Texts

The German Solar Energy Society, 2009 *Planning and Installing Solar Thermal Systems*, Earthscan (UK) All Chapters

http://www.filefactory.com/file/39q0d0rb9t7h/185936187-Planning-and-Installing-Solar-Thermal-Systems_pdf

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Tutorial Exercises

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Further Readings

K025_Note_1
K025_Note_2

Stage 2 Part 4.zip

http://www.filefactory.com/file/c0ccb53/n/Stage_2_Part_4.zip

K025 Resources

ELV_Accessories_-_SPS_Components

ELV_Cable_termination

Stage 2 Part 2A.zip

http://www.filefactory.com/file/c0cca4a/n/Stage_2_Part_2A.zip

PV_System_installation_Overview_-_PV_Power_Systems

SPS_Components

PVSoftware

Stage 2 Part 5.zip

http://www.filefactory.com/file/c0cc187/n/Stage_2_Part_5.zip

System_Installation_Examples_-_NUER02_version

Stage 2 Part 6.zip

http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip
Renewable Energy-K025+K035.zip
http://www.filefactory.com/file/c0b7c5e/n/Renewable_Energy-K025_K035.zip

Lesson 1 **Lesson 2** **Lesson 3** **Lesson 4** **Lesson 5** **Lesson 6**

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Online Practicals

Practicals Work performance and practical instruction

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AEEGY 201A Energy Storage System

Course Outline

In this subject you will learn about energy storage systems. You will develop specialised knowledge and skills relating to:

- The need for and benefits of energy storage technologies
- Current energy storage technologies and their application
- Environmental impacts and benefits of energy storage systems
- Designing an energy storage system for specific engineering applications
- Costing and payback of energy storage systems
- Designing and building a small scale energy storage system.

Study Guide

Lesson Power Points

Part 1
http://www.filefactory.com/file/68whdsdbwtfh/AEEGY201A-RE004%20Part%201.pdf

Part 2

http://www.filefactory.com/file/gh1dls7edlp/AEEGY201A-RE004%20Part%202.pdf

Part 3
http://www.filefactory.com/file/48jt93opz4b5/AEEGY201A-RE004%20Part%203.pdf

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Textbook

Prescribed Texts:

Brunet, Y, 2010, *Energy Storage*, John Wiley & Sons UK.

http://www.filefactory.com/file/56ymtb4pptz1/Energy%20Strorage.pdf

Other Related book

http://www.filefactory.com/file/2wpc2idmobv9/Energy_Stroage_pdf

http://www.filefactory.com/file/3poecuxu7yxb/energy-in-australia-2012_pdf

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Tutorial Exercises

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Further Readings

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Online Practicals

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AEEGY202A Renewable Energy Resources Analysis

Course Outline

In this subject you will learn about renewable energy resource analysis. You will develop specialised knowledge and skills relating to:

- National and international trends in renewable energy resource analysis
- Energy history
- Australian Renewable Energy reserves
- Energy and power conversion
- Behavioural trends and misconceptions
- Power Cycles
- Oil, coal and natural gas
- Solar photovoltaics
- Solar thermal
- Wind Energy
- Hydro-power
- Bio-mass
- Geo-thermal
- Ocean energy
- Hydrogen Economy
- Limitations in existing infrastructure.

Study Guide

Lesson Power Points

Part 1

http://www.filefactory.com/file/2248bo0gcbor/AEEGY202A%2BRE005%20Part%201.pdf

Part 2

http://www.filefactory.com/file/5us491ooh1cl/AEEGY202A%2BRE005%20Part%201.pdf

Part 3

http://www.filefactory.com/file/5e3gt7cv1rid/AEEGY202A%2BRE005%20Part%202.pdf

Part 4

http://www.filefactory.com/file/5ld0bqgs3049/AEEGY202A%2BRE005%20Part%202.pdf

Part 5

http://www.filefactory.com/file/47m4fhje9k73/AEEGY202A%2BRE005%20Part%203.pdf

Part 6

http://www.filefactory.com/file/5mfsxsln72ll/AEEGY202A%2BRE005%20Part%203.pdf

Part 7

http://www.filefactory.com/file/26efv2p36hpf/AEEGY202A%2BRE005%20Part%204.pdf

Part 8

http://www.filefactory.com/file/4szjlkhva34t/AEEGY202A%2BRE005%20Part%204.pdf

Part 9

http://www.filefactory.com/file/5n4ixwsih1vb/AEEGY202A%2BRE005%20Part%205.pdf

Part 10

http://www.filefactory.com/file/7jb0atgu4xst/AEEGY202A%2BRE005%20Part%205.pdf

Part 11

http://www.filefactory.com/file/3vix5oofhjex/AEEGY202A%2BRE005%20Part%205a.pdf

Part 12

http://www.filefactory.com/file/4jt03kopqyhp/AEEGY202A%2BRE005%20Part%205a.pdf

Part 13

http://www.filefactory.com/file/23v9r0ymiy8n/AEEGY202A%2BRE005%20Part%206.pdf

Part 14

http://www.filefactory.com/file/2yyceyvo1knh/AEEGY202A%2BRE005%20Part%206.pdf

Part 15

http://www.filefactory.com/file/2qiuhz8imqjf/AEEGY202A%2BRE005%20Part%207.pdf

Part 16

http://www.filefactory.com/file/33va2juvew5b/AEEGY202A%2BRE005%20Part%207.pdf

Password- **Joe2013**

Textbook

Prescribed Text:

Boyle, G 2004, *Renewable Energy: Power for a sustainable future* 2nd or latest edition Oxford University Press

http://www.filefactory.com/file/11jwo86pxn0j/Renewable%20Energy-Power%20for%20sustainable%20Future.pdf

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Tutorial Exercises

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Further Readings

K131 + EE 308
http://www.filefactory.com/file/7hvv22gtz2lx/n/K131_zip

Additional 3.zip

http://www.filefactory.com/file/c0cb6a8/n/Additional_3.zip

Additional 1.zip

http://www.filefactory.com/file/c0cc0f7/n/Additional_1.zip

http://www.filefactory.com/file/1mr75xfm92ux/n/K032_zip

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Online Practicals

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AEEGY 203AWind Energy Conversion System

Course Outline

In this subject you will learn about wind energy conversion systems. You will develop specialised knowledge and skills relating to:

- Introduction to wind as a natural resource
- Energy, power and wind
- Wind characteristics
- Data acquisition methods
- Site characteristics
- Correlation, wind and site
- Predicting energy output
- Turbines, types and construction
- Wind Energy Conversion Systems (WECS) sizing
- Retrospective performance.

Study Guide

Lesson Power Points

http://www.filefactory.com/file/3hyoby6eqe3p/AEEGY%20203A%20%20Wind%20Energy-RE006.pdf

Password- **Joe2013**

Textbook

Prescribed Texts:

Boyle, G, 2004, *Renewable Energy: Power for a sustainable future*. 2nd edition, Oxford University Press

http://www.filefactory.com/file/11jwo86pxn0j/Renewable%20Energy-Power%20for%20sustainable%20Future.pdf

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Tutorial Exercises

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Further Readings

ME 202 Introduction to Aero Dynamics

http://www.filefactory.com/file/401s96o982uf/n/ME_202_Introduction_to_Aero_Dynamics_pdf

ME 234 Wind Turbines

http://www.filefactory.com/file/30w0u2u36a19/n/ME_234_wind-turbines_pdf

Aerodynamics Part 1

http://www.filefactory.com/file/7axzc9j37g91/n/ME202_Part_1_zip

Aerodynamics Part 2

http://www.filefactory.com/file/2tlei8t6e4xn/n/ME202_Part_2_zip

Aerodynamics Part 3

http://www.filefactory.com/file/6mt5m5wi6dfn/n/ME202_Part_3_zip

Wind Turbine Part 1

http://www.filefactory.com/file/1f2dio8ik4zd/n/ME_234_Part_1_zip

Wind Turbine Part 2

http://www.filefactory.com/file/olr2lwjdpc5/n/ME_234_Part_2_zip

Wind Turbine Part 3

http://www.filefactory.com/file/1l7k3a3shh4f/n/ME_234_Part_3_zip

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Online Practicals

Password- joe2013

AEEGY 204 A Energy Efficiency

Course Outline

In this subject you will learn about the efficiency of energy systems. You will develop specific knowledge and skills relating to:

- Energy conversion efficiencies of conventional and renewable energy systems
- Energy auditing
- Economic and environmental benefits of energy efficiency
- Energy efficiency of various energy loads
- Cogeneration (CHP)
- Pros and cons of distributed generation in terms of energy efficiency
- Ways to improve energy efficiency at the generation point and in the distribution system
- Ways to improve energy efficiency at the load points.

Study Guide

Lesson Power Points

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Textbook

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Tutorial Exercises

Password- joe2013

Further Readings

1	Building Design+Material Science-K041+E047.zip http://www.filefactory.com/file/c0b645d/n/Building_Design_Material_Science-K041_E047.zip
2	Stage 3 Part 7.zip http://www.filefactory.com/file/c0ccfc7/n/Stage_3_Part_7.zip HazardLightingPanel K041 Building Design 1 K041 Building Design 2 K041Airconditioning K041Energy Management Textbook Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip E047 Mech
3	As 1

4	As 2
5	**Renewable Energy+ Energy Efficiency** K041 Lesson 1-Solar Design.zip http://www.filefactory.com/file/c0b6a9f/n/K041_Lesson_1-Solar_Design.zip K041 Lesson 2-Basic psychrometric chart.zip http://www.filefactory.com/file/c0b6bc9/n/K041_Lesson_2-Basic_psychrometric_chart.zip K041 Lesson 3-Total heat resistance.zip http://www.filefactory.com/file/c0b6b18/n/K041_Lesson_3-Total_heat_resistance.zip K041 Lesson 4-U value Heat conductance calculation.zip http://www.filefactory.com/file/c0b6b57/n/K041_Lesson_4-U_value_Heat_conductance_calculation.zip K041 Lesson 5-Glazing+Net Heat gain heat loss.zip http://www.filefactory.com/file/c0b6cc2/n/K041_Lesson_5-Glazing_Net_Heat_gain_heat_loss.zip K041 Lesson 6-Shading.zip http://www.filefactory.com/file/c0b6cd7/n/K041_Lesson_6-Shading.zip K041 Lesson 7-Insulation+ Thermal mass.zip http://www.filefactory.com/file/c0b6c06/n/K041_Lesson_7-

	Insulation_Thermal_mass.zip K041 Lesson 8-Thermal mass insulation.zip http://www.filefactory.com/file/c0b6c30/n/K041_Lesson_8-Thermal_mass_insulation.zip K041 Lesson 9-Airconditioning load calculation.zip http://www.filefactory.com/file/c0b6dc8/n/K041_Lesson_9-Airconditioning_load_calculation.zip K041 Lesson 10-Heat gain per day.zip http://www.filefactory.com/file/c0b6dfe/n/K041_Lesson_10-Heat_gain_per_day.zip K041 Lesson 11-Ventilation.zip http://www.filefactory.com/file/c0b6d13/n/K041_Lesson_11-Ventilation.zip K041 Lesson 12-Building heating load http://www.filefactory.com/file/c0b6d47/n/K041_Lesson_12-Building_heating_load_calculation.zip K041 Lesson 14-Design for Australian climate.zip http://www.filefactory.com/file/c0b6d76/n/K041_Lesson_14-Design_for_Australian_climate.zip K041 Lesson 15-Domestic solar hot water system.zip http://www.filefactory.com/file/c0b6eaf/n/K041_Lesson_15-

	Domestic_solar_hot_water_system.zip K041 Lesson 16-Energy efficiency+Lighting.zip http://www.filefactory.com/file/c0b6e0f/n/K041_Lesson_16-Energy_efficiency_Lighting.zip K041 Lesson 17-Illumination+Smoke alarm.zip http://www.filefactory.com/file/c0b6fc5/n/K041_Lesson_17-Illumination_Smoke_alarm.zip K041_Lesson_18-Water_supply.zip http://www.filefactory.com/file/c0b61ec/n/K041_Lesson_18-Water_supply.zip K041_Lesson_19-Ventilation+Lighting_control.zip http://www.filefactory.com/file/c0b6058/n/K041_Lesson_19-Ventilation+Lighting_control.zip K041_Lesson_20-Electrical_system_design.zip http://www.filefactory.com/file/c0b6085/n/K041_Lesson_20-Electrical_system_design.zip K041_Lesson_21-Building_materials.zip http://www.filefactory.com/file/c0b61b8/n/K041_Lesson_21-Building_materials.zip
6	Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**

	UEENEEK041B_E047B_Tutorials Energy_survey_assignment in Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**E07 & EE011 units mapping for Theory study & Exercises** Assignment + Project work
10	K041 Text book http://www.filefactory.com/file/61dmv976e7tl/n/K041Textbook1_zip http://www.filefactory.com/file/4lsx0pk00guj/n/K041Textbook2_zip http://www.filefactory.com/file/2kwcxkrnasyf/n/K041Textbook3_zip

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Online Practicals

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Part (2) Qualified (1) Course

ENMAT 101A Engineering Materials & Processes

Course Outline

In this subject you will learn about the structure, properties and usage of a variety of materials used in engineering applications. You will develop specialised knowledge relating to:

- Material structure and properties
- Mechanical properties
- Metals - ferrous and non-ferrous
- Polymers
- Ceramics
- Composites, concrete, other
- Basic destructive testing
- Steel – FeC (Iron/Carbon), heat treatment
- Casting - perm/non-perm
- Forming - hot, cold
- Processes - PowderM, welding, Rapid Proto
- Polymer processes - IM, BM, extrus, thermoset, composites
- Joining - fasteners, weld, non-fusion
- Corrosion
- Surface treatments - plating, coatings, peening, anodising
- Non-destructive testing
- Quality assurance and control, certified testing, safety, materials safety data sheets (MSDS)
- Economic and environmental issues - production/recycling.

Study Guide

WEEK	LECTURES / EXAMINATIONS	LABORATORY	QUIZ
Orientation Week	**Orientation activities** **Review of syllabus and assessment activities. Laboratory orientation.** Academic Foundations: Note taking; study skills; introduction to conducting research.		
Week 1	**Lecture (2 hrs):** **Readings:** Ch 1: Engineering materials; Ch 2: Properties of materials.	Laboratory 1 (2 hrs): Hardness test	
Week 2	**Lecture (2 hrs):** **Readings:** Ch 3: Mechanical testing; Ch 4: The crystal structure of metals.	Laboratory 2 (2 hrs): Tensile Test	
Week 3	**Lecture (2 hrs):** **Readings:** Ch 5: Casting process; Ch 6: Mechanical deformation of metals; Ch 7: The mechanical shaping of metals.	Laboratory 3 (2 hrs): Metal Casting	**10101**
Week 4	**Lecture (2 hrs):** **Readings:** Ch 8: Alloys; Ch 9: Equilibrium diagrams; Ch 10: Practical microscopy	Laboratory 4 (2 hrs): Microscopy, Weld samples	**10102**
Week 5	**Lecture (2hrs):** **Readings:** Ch 11: Iron and steel; Ch 12: The heat-treatment of plain-carbon steels	Laboratory 5 (2 hrs): Torsion, Bending Tests	**10103**
Week 6	**Lecture (2hrs):** **Readings:** Ch 13: Alloy steels; Ch 14: The surface hardening of steels; Ch 15: Cast iron.	Laboratory 6 (2 hrs): Heat Treatment	
Week 7	**Examination Week A:** **Assessment 2: Short answer test on content from weeks 1 to 5 (Ch1 to Ch15) 15%**	**Assessment 3 due: Portfolio of Laboratory Reports 1, 2, 3 & 4 - 15%**	
Week 8	**Lecture (2hrs):** **Readings:** Ch 16: Copper and its alloys; Ch 17: Aluminium and its alloys; Ch 18: Other non-ferrous metals and their alloys.	Laboratory 7 (2 hrs): Polymer tensile test,	**10105**

WEEK	LECTURES / EXAMINATIONS	LABORATORY	QUIZ
Week 9	**Lecture (2hrs):** **Readings:** Ch 19: Plastics materials and rubbers; Ch 20: Properties of plastics.	Site Visit: e.g. Rolling Mill, Materials process/testing	
Week 10	**Lecture (2hrs):** **Readings:** Ch 21: Ceramics; Ch 22: Glasses; Ch 23: Composite materials.	Demo: Epoxy FRC, thermoforming	**10106**
Week 11	**Lecture (2hrs):** **Readings:** Ch 24: Fibre-reinforced composite materials; Ch 25: Methods of joining materials.	Laboratory 8 (2 hrs): Dye, Mag, Ultrasound	**10104**
Week 12	**Lecture (2hrs):** **Readings:** Ch 26: Causes of failure; NDT; Material Standards.	Laboratory 9 (2 hrs): Product Study	**10107**
Week 13	**Lecture (2 hrs):** **Readings:** Ch 27 Choice of Materials and Processes; Design. Economic, Environmental, Social Issues.	**Assessment 4 due:** **Collaborative Report (Product Study) 15%**	**10108**
Week 14	**Study Week**		
Week 15	**Examination Week B:** **Assessment 5:** **Written examination: 30%**	**Assessment 3 due:** **Portfolio of Laboratory Reports 5, 6, 7, 8 & 9 - 15%**	

Lesson Power Points

E081 Material Science

http://www.filefactory.com/file/pq2r36bvgnv/n/E081_Material_Science1_pdf

Non Metallic Materials

http://www.filefactory.com/file/2czhyovkn32x/n/Materials_ppt

Password- Joe2013

Textbook

Prescribed Text:

Higgins, R. & Bolton, W., 2010, *Materials for Engineers and Technicians*, 5th Edition, Butterworth Heinemann, Oxford UK. ISBN 9781856177696.

http://www.filefactory.com/file/724kx95f2ayf/27767685-Materials-Engineers-Technicians_pdf

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Tutorial Exercises

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Further Readings

Engineering Mechanics

http://www.filefactory.com/file/63sqtndrqf55/n/ME_103_Engineering_Mechanics_zip

Chemical Thermodynamics

http://www.filefactory.com/file/5ussq0pnpi4t/n/ME_207_Chemical_thermodynamics_pdf

Introduction-to-polymer-science-and-technology

http://www.filefactory.com/file/6epib0ijvbjt/n/ME_209_Introduction-to-polymer-science-and-technology_pdf

http://www.filefactory.com/file/7dhamrs5c3z7/n/ME207_zip

ME 305+ ME 209

http://www.filefactory.com/file/76fbf48z2h7j/n/ME305_ME209_zip

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Online Practicals

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ENELE 101A Principle of Electrical Engineering

Course Outline

In this subject you will learn about basic principles of electrical engineering. You will develop a range of foundation knowledge and skills relating to:

- Notation and units
- Circuit topologies

Direct current (DC) circuit principles:

- Voltage, current, power, resistance, conductance
- Ohm's Law; Kirchhoff voltage and current laws
- Series and parallel configurations
- Linearity and Superposition
- Thévenin and Norton equivalent circuits (simple cases)
- Nodal and mesh analysis (simple cases)
- Maximum power transfer
- Capacitors
- Passive and switched resistor-capacitor (RC) circuits
- Inductors
- Passive and switched resistor-inductor (RL) circuits
- Diodes

Alternating current (AC) circuit principles:

- Amplitude, frequency and phase
- Voltage
- Current and power in resistors, inductors & capacitors
- Time domain analysis of ac circuits
- Review of complex numbers
- Phasors and phasor notation
- Complex impedance and admittance
- Thévenin and Norton equivalents (simple cases)
- AC power (real, reactive, complex)
- Root-mean-square (RMS) values
- Maximum power transfer.

Study Guide

WEEK NO:	TOPICS AND ACTIVITIES
Orientation Week	**Orientation activities** Review of syllabus and assessment activities.
Week 1	**Introduction to DC Circuits** **Reading List:** Chapter 1 Sections: 1.1 – 1.5 Chapter 2 Sections: 2.1 – 2.6 & 2.9 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 2	**Kirchhoff Voltage & Current Laws** **Reading List:** Chapter 3 Sections: 3.1 – 3.6 & 3.10 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 3	**Node & Mesh Analysis** **Reading List:** Chapter 4 Sections: 4.1 – 4.3, 4.5, 4.6, 4.8, 4.13 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 4	**Superposition Principle & Source Transformation** **Thévenin & Norton Equivalent DC Circuits** **Reading List:** Chapter 5 Sections: 5.1 – 5.6 & 5.11 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 5	**Capacitors & Inductors** **Reading List:** Chapter 7 Sections: 7.1 – 7.8 & 7.13 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 6	**Passive & Switched RL & RC Circuits** **Reading List:** Chapter 8 Sections: 8.1 – 8.4, 8.6 & 8.12 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 7	**Examination Week A:** **Assessment 1: Written examination - 25%**

WEEK NO:	TOPICS AND ACTIVITIES
Week 8	**Diodes in DC Circuits** **Introduction to AC Circuits** **Reading List:** Chapter 10 Sections: 10.1 & 10.2 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 9	**AC Steady-State Analysis** **Reading List:** Chapter 10 Sections: 10.3 & 10.4 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 10	**Complex Numbers & Phasor Notation** **Reading List:** Chapter 10 Sections: 10.5 – 10.6 & 10.11 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 11	**Impedance & Admittance** **Thevenin & Norton Equivalent AC Circuits** **Reading List:** Chapter 10 Section: 10.7 & 10.10 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ. **Assessment 2 Due: Portfolio and/or written report on practicum work and experiments (Laboratory Workbook) – 25%**
Week 12	**AC Power** **Reading List:** Chapter 11 Sections: 11.1 – 11.6 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 13	**Power Superposition & Maximum Power** **Reading List:** Chapter 11 Sections: 11.7 – 11.8 **Text:** Dorf, R & Svoboda, J, 2010, *Introduction to Electric Circuits*, 8th Edn, John Wiley & Sons, Hoboken, NJ.
Week 14	**Study Week**
Week 15	**Examination Week B:** **Assessment 3: Written examination – 50%**

Lesson Power Points

Week 1 Lesson

Week 2 Lesson

Week 3 Lesson

Week 3A Lesson

Video- http://www.filefactory.com/file/cf8739b/n/E003+E004.zip

Circuit Analysis

Advanced Circuit Analysis

Electro-magnetics+Electronics

Advanced Circuits+Electromagnetics+Electronics

Electrical Circuits 1

Engineering Circuit Analysis

Electrical Measurement

Folder				Electrical Circuit
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
	27	to	52	Circuit theorem
	54	to	71	Sinusoids & phasors
	73	to	81	Frequency response

Folder				Engineering Circuit Analysis
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
2/ 3				Basic circuits Examples 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.10, 3.11, 3.12
4				Basic Nodal and Mesh analysis Example 4.1, 4,2, 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, 4.10, 4.11, 4.12
5				Linear and Superposition/ Source

				Transformation Example 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11
8				RL/ RC Circuits Example 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7, 8.8, 8.9, 8.10, 8.11
9				RLC Circuits Example 9.1, 9.2, 9.3, 9.4, 9.5, 9.6, 9.7, 9.8, 9.9
10				Sinusoidal steady state analysis Example 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8
11				AC Power Circuit Analysis Example 11.1, 11.2, 11.3, 11.4, 11.5
12				Polyphase Circuits Example 12.1, 12.2, 12.3, 12.4, 12.5, 12.6
13				Magnetically coupled circuits Example 13.1, 13.2, 13.3, 13.4, 13.5, 13.6, 13.7, 13.8
14				Complex Frequency / Laplace Transform Example 14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 14.7, 14.8, 14.11
				Laplace Transform Table 14.1, 14.2
15				Circuit analysis in " S " domain Example 15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7 Pole/ Zero constellation Example 15.12, 15.13
16				Frequency Response Example 16.1, 16.2
17				Two ports network Example 17.1, 17.2, 17.3, 17.4, 17.5
18				Fourier Circuit Analysis Example 18.1 Use of symmetry theory Table 18.1 Example 18.2, 18.3
Exercise	Q328	to	Q367	of Assignment Number (23)

Folder				EE404 Electrical Measurement
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary

6	197			Measurement of inductance and capacitance
7	270			Measurement of resistance
9	352			Magnetic measurement
11	437			High voltage measurement and tesating
12	480			Location of cable fault
20	730			Measurement of power
21	771			Measurement of energy

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Textbook

Prescribed Text:

Dorf, R & Svoboda, J 2010, *Introduction to Electric Circuits*, 8th or latest edition, John Wiley & Sons, Hoboken, NJ.

http://www.filefactory.com/file/626gk4lkg37z/Introduction_to_Electric_Circuits_8th_E dition_by_Richard_C_Dorf_amp_James_A_Svoboda_pdf

http://www.filefactory.com/file/7kaiz26cy6vf/LabView_pdf

http://www.filefactory.com/file/2rrdma1udpkv/Principles_and_Applications_of_Electrical_Engineering_pdf

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Tutorial Exercises

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Further Readings

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Online Practicals

Practicals Work performance and practical instruction

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ENELE201A Advanced Electrical Engineering

Course Outline

In this subject you will build on basic engineering knowledge gained in previous sub and develop further knowledge and skills relating to electrical engineering:

Circuit analysis:

- DC and AC Network theorems (Kirchhoff's, Superposition)
- Resonance
- Magnetically coupled circuits

Communications and signalling processing and applications:

- Analogue and digital communications principles
- Filters
- Amplifiers and attenuators
- Communication protocols

Analogue and digital communication systems and control circuits:

- Telemetry and monitoring systems
- Control systems and applications.

Study Guide

Lesson Power Points

Electromagnetics

Electromagnetics 1

http://www.filefactory.com/file/f8hx3kz5gd1/n/BAE407_Wk_1_zip

Electromagnetics 2

http://www.filefactory.com/file/40r0fd3sta2p/n/BAE407_Wk_2_zip

Electromagnetics 3

http://www.filefactory.com/file/snre8qvw3j5/n/BAE407_Wk_3_zip

Circuits

Circuit 1

http://www.filefactory.com/file/65j9pisrtg0j/n/BAE405_Wk_1_zip

Circuit 2

http://www.filefactory.com/file/1o71eepje7up/n/BAE405_Wk_2_zip

Circuit 3

http://www.filefactory.com/file/1mm2f82zqhix/n/BAE405_Wk_3_zip

http://www.filefactory.com/file/3spcgz270krb/BAE405_Wk_3a.zip

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Textbook

Prescribed Texts:

Rizzoni, G & Hartley, T 2007, *Principles and Applications of Electrical Engineering*, 5th or latest edition, McGraw-Hill Companies Inc. USA

Recommended Readings:

Nahvi, M (Ed) & Edminister, J (Ed) 2011, *Schaum's Outline of Electric Circuits*, McGraw-Hill Companies Inc. USA

All About Circuits 2012, viewed 8 May 2012, http://www.allaboutcircuits.com/

http://www.filefactory.com/file/70zpg419d9mf/_Rizzoni_G_Principles_and_Applicatio ns_of_Electr_Bookos_org_pdf

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Tutorial Exercises

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Further Readings

Stage 2 Part 3.zip

http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip
E025_Circuits_1 E025_Circuits_2
Stage 3 Part 2.zip

http://www.filefactory.com/file/c0ccdbc/n/Stage_3_Part_2.zip
E025_Tutorial

Stage 2 Part 2A.zip

http://www.filefactory.com/file/c0cca4a/n/Stage_2_Part_2A.zip

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Online Practicals

Practicals Work performance and practical instruction

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ENELE202A Principle of Electrical Machines

Course Outline

In this subject you will learn basic principles of electrical machinery. You will develop specialised knowledge and skills relating to:

Transformers:

- Transformer Principles and Construction
- Efficiency
- Impedance
- Equivalent circuit
- Polarity
- Vector groups
- Parallel operations
- Special Transformers (Auto and Instrument etc)

Induction Motors:

- Principle of Induction Motor
- Construction and operation of Squirrel Cage Induction Motors (SCIM) and Wound Rotor Induction Motors (WRIM)
- Operation and characteristics
- Induction Generator
- Single Phase Induction Motor

Synchronous Machines:

- Principles of operation
- Characteristics
- Motors
- Alternators

DC Machines:

- Principles of operation
- Shunt Series Compound Machines
- Characteristics

Single Phase and Special Motors:

- Split Phase motor
- Capacitor Sturt/Run motor

- Shaded Pole motor
- Universal motor
- Hysteresis motor
- Stepper motors
- Brushless DC motors
- Permanent magnet motors
- Variable reluctance motors
- Stepper motors
- Brushless DC motors

Electronic Control of Motors

- DC Motors
- AC Motors.

Study Guide

Lesson Power Points

AC MACHINES

Elect Machine-G043+G044+G045.zip **http://www.filefactory.com/file/c0b6668/n/Elect_Machine-G043_G044_G045.zip**
G043_G045_7762AF_Notes **G043_G045_Part_1_7762AF_Notes**
Induction and synchronous machines & control G043+G045 Lesson 1 AC Machine Introduction.zip http://www.filefactory.com/file/c0bf660/n/G043_G045_Lesson_1_AC_Machine_Introduction.zip G043+G045 Lesson 2 Slip+Equivalent Ckt.zip http://www.filefactory.com/file/c0bf7b9/n/G043_G045_Lesson_2_Slip_Equivalent_Ckt.zip G043+G045 Lesson 3 Power Transfer.zip http://www.filefactory.com/file/c0bf773/n/G043_G045_Lesson_3_Power_Transfer.zip G043+G045 Lesson 4 Test for equivalent ckt.zip

http://www.filefactory.com/file/c0b03f9/n/G043_G045_Lesson_4_Test_for_equivalent_ckt.zip

G043+G045 Lesson 5 Equivalent Ckt Problems.zip

http://www.filefactory.com/file/c0bf842/n/G043_G045_Lesson_5_Equivalent_Ckt_Problems.zip

G043+G045 Lesson 6 Motor starting and control.zip

http://www.filefactory.com/file/c0bf90e/n/G043_G045_Lesson_6_Motor_starting_and_control.zip

G043+G045 Lesson 7 Synchronous machine introduction.zip

http://www.filefactory.com/file/c0bf92d/n/G043_G045_Lesson_7_Synchronous_machine_introduction.zip

G043+G045 Lesson 8 Synchronous machine ckt problems.zip

http://www.filefactory.com/file/c0bf955/n/G043_G045_Lesson_8_Synchronous_machine_ckt_problems.zip
G043+G045 Lesson 9 Synchronous machine starting.zip

http://www.filefactory.com/file/c0b0342/n/G043_G045_Lesson_9_Synchronous_machine_starting.zip

G043+G045 Lesson 10 Single phase motor.zip

http://www.filefactory.com/file/c0b0362/n/G043_G045_Lesson_10_Single_phase_motor.zip

G043+G045 Lesson 11 Factors affecting motor operation.zip

http://www.filefactory.com/file/c0b037b/n/G043_G045_Lesson_11_Factors_affecting_motor_operation.zip

Induction and synchronous machines & control

DC MACHINES

1	Elect Fundamental E029+G012+G001+G002+G060.zip http://www.filefactory.com/file/c0b6601/n/Elect_Fundamental_E029_G012_G001_G002_G060.zip Elect Machine-G043+G044+G045.zip http://www.filefactory.com/file/c0b6668/n/Elect_Machine-G043_G044_G045.zip

2	E029_Motor_Control_1 E029_Motor_Control_2 E047Mech G044_7762AC1 G044_7762AC2

TRANSFORMERS

Power Transformer+Line-G040.zip **http://www.filefactory.com/file/c0b7bd2/n/Power_Transformer_Line-G040.zip**
G040_7762AD_Notes
As_1
As_2
G040 Lesson 1 Power transformer rating 1.zip **http://www.filefactory.com/file/c0bcff1/n/G040_Lesson_1_Power_transformer_rating_1.zip** **G040 Lesson 1 Power transformer rating 2.zip** **http://www.filefactory.com/file/c0bcf9b/n/G040_Lesson_1_Power_transformer_rating_2.zip** **G040 Lesson 2 Open circuit short circuit test.zip** **http://www.filefactory.com/file/c0bc0b9/n/G040_Lesson_2_Open_circuit_short_circuit_test.zip** **G040 Lesson 3 Transformer regulation.zip** **http://www.filefactory.com/file/c0bc0d1/n/G040_Lesson_3_Transformer_regulation.zip** **G040 Lesson 4 Power transformer connection.zip** **http://www.filefactory.com/file/c0bc09a/n/G040_Lesson_4_Power_transformer_connection.zip** **G040 Lesson 5 Maximum efficiency.zip** **http://www.filefactory.com/file/c0bc1db/n/G040_Lesson_5_Maximum_efficiency.zip** **G040 Lesson 6 Transformer parallel operation.zip** **http://www.filefactory.com/file/c0bc164/n/G040_Lesson_6_Transformer_parallel_operation.zip** **G040 Lesson 7 Harmonic in transformer.zip** **http://www.filefactory.com/file/c0bc2ab/n/G040_Lesson_7_Harmonic_in_transformer.zip** **G040 Lesson 8 Transformer problem + auto transformer.zip** **http://www.filefactory.com/file/c0bc2cb/n/G040_Lesson_8_Transformer_problem_auto_transformer.zip**

G040_Lesson_9_Transformer_rating_cooling_connection_tap_changing.zip **http://www.filefactory.com/file/c0bc294/n/G040_Lesson_9_Transformer_rating_cooling_connection_tap_changing.zip** **G040 Lesson 10 Phase shift transformer.zip** **http://www.filefactory.com/file/c0bc2f5/n/G040_Lesson_10_Phase_shift_transformer.zip**

Password- **Joe2013**

Textbook

Prescribed Texts:

Wildi, T 2006, *Electrical Machines, Drives and Power Systems* 6th or latest edition. Pearson Prentice Hall, Australia

http://www.filefactory.com/file/7hcvfk7cai6b/Electrical_Machines_drive_power_syste m_pdf

http://www.filefactory.com/file/2ua3qpynkv43/ENELE202A-Principle_of_Elect_Meachine_pdf

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Tutorial Exercises

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Further Readings

Subjects	Points	Competency Units
Advanced Electro-magnetics Field & Materials		Electromagnetism

Advanced Electro-magnetics

Field & Materials

Readings

Electro-magnetics Field

Electromagnetism

Electro-magetism

Examples

Electro-mechanics (2 pt)

Part (1) Overview Knowledge of the subject

Folder					Advanced Engineering Mathematics
					Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated

File name	Chapter		Page		Topics
					Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
Theory					
chap01_emd.pdf			All		Electro-mechanic - 1.0.1 Scope of application • Electro-magnetic theory 1.1.1a Magnetic field system, Table 1.1 1.1.1.b Electric field system Table 1.2
chap02_emd.pdf			All		Lumped electro-mechanical elements
chap03_sec_emd.pdf			All		Lumped parameter-electro-mechanic
chap04_sec_emd.pdf			All		Rotating machines
chap05_sec_emd.pdf			All		Lumped parameter-electro mechanical dynamics
Problems					
chap02_prb_emd.pdf			All		Example problems
chap03_prb_emd.pdf			All		Example problems
chap04_prb_emd.pdf			All		Example problems
chap05_prb_emd.pdf			All		Example problems
emdsoln_01.pdf			All		Solutions for all example problems

Electrical Machines
Machine Principle

Folder				Electrical Machines
File				Electrical Machines
				Instruction

				Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
	45			DC Generator, Example problems
	58			DC Motors, Example problems
	121			Efficiency & heating of electrical machines, Example problems
	131			Three phase transformer, Example problems
	142			Three phase induction motors, Example problems
	177			Synchronous generators, Example problems
	194			Synchronous motors, Example problems
	229			Basic of industrial motor control, Example problems

Machine Principle

Folder				Machine Principle
				Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated
Chapter	Page			Topics
				Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
2	114			Rotating machines
3	116			Machinery mounting
4	118			Balancing
6	124			Bearing
7	139			Power transmission

Advanced Electro-magnetics Field & Materials

Folder					Advanced Electro-magnetic Field & Materials
File					
					Instruction Study the notes, calculate the example problems then do the exercises numbers as indicated

File name	Chapter		Page		Topics

					Note- PDF File page number and the page number of the scanned document may be different. The student need to check both as necessary
Pre-readings					
em01.pdf	1		All		Electric field
em02.pdf	2		All		Electrostatic potential
em03.pdf	3		All		Dipole and quadrature pole movements
em04.pdf	4		All		Batteries, resistors, ohm laws
em05.pdf	5		All		Capacitors
em06.pdf	6		All		Magnetic effect of an electric current
em07.pdf	7		All		Force on current in a magnetic field
em08.pdf	8		All		Electro-dynamics of moving bodies
em09.pdf	9		All		Magnetic potential
em10.pdf	10		All		Electro-magnetic Induction
em11.pdf	11		All		Dimensions
em12.pdf	12		All		Properties of magnetic materials
em13.pdf	13		All		Alternating current
em14.pdf	14		All		Laplace transform
em15.pdf	15		All		Maxwell Equation
em16.pdf	16		All		CGS Electricity & Magnetism
em17.pdf	17		All		Magnetic dipole movement
Highlight Points					
Lecture1.pdf			All		Outlines
Lecture 2.pdf			All		Electric field
Lecture 3.pdf			All		Electrostatic Energy
Lecture 4.pdf			All		Laplace’s equation (1)
Lecture 5.pdf			All		Laplace’s equation (2)
Lecture 6.pdf			All		Remarks on units
Lecture 7.pdf			All		Green’s functions
Lecture 8.pdf			All		Multipole expansion
Lecture 9.pdf			All		Electro-static in matter
Lecture 10.pdf			All		Boundary condition
Lecture 11.pdf			All		Magneto statics (1)
Lecture 12.pdf			All		Magneto statics (2)
Lecture 13.pdf			All		Macroscopic magneto statics

Lecture 14.pdf			All		Maxwell's equation
Lecture 15.pdf			All		DISC movement
Lecture 16.pdf			All		Electro-magnetic plane waves
Lecture 17.pdf			All		Reflection & refraction
Lecture 18.pdf			All		Casual relation between D & E
Lecture 19.pdf			All		Wave guides and load cavities
Lecture 20.pdf			All		Electromagnetic radiation and scattering (1)
Lecture 21.pdf			All		Electromagnetic radiation and scattering (2)
Lecture 22.pdf			All		Scattering by small di-electric sphere
Lecture 27.pdf			All		Electro-magnetism
Lecture 28.pdf			All		Electro magnetic fields and moving charges
Formulas					
CW950212_1.pdf			All		Multipole expansion
CW950320_1.pdf			All		Magnetic constants and materials
CW950329_1.pdf			All		Ampere law
CW950128_3.pdf			All		Brief history of electro magnetism
CW950219_2.pdf			All		Gauss's law
CW950313_2.pdf			All		Numerical solutions to Laplace's equation
CW960430_2.pdf			All		Small current loop
CW970129_3.pdf			All		Curvilinear co-ordinate system
CW970210_1.pdf			All		Problems
CW970303_1.pdf			All		Dielectric tensors and constants
CW970317_2.pdf			All		Analytic solution to Laplace equation
CW970606_1.pdf			All		Magnetostatic boundary condition
CW970606_1.pdf			All		Electrostatic boundary condition
Symbols					
CW970606_3.pdf			All		Electromagnetic field
CW980205_2.pdf			All		The gradient vector
Di-electric.pdf			All		Maxwell's equation
Propagation.pdf			All		Electro-magnetic wave propagation

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Online Practicals

Practicals Work performance and practical instruction

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ENELE 203A Electronics and Power Control

Course Outline

In this subject you will learn about electronics and power control. You will develop specialised knowledge and skills relating to:

Semiconductors, diodes, transistors and integrated circuits:

- Semiconductor materials and junctions
- Diode construction, operation, ratings and applications
- Transistor construction, operation, ratings and applications
- Integrated circuit construction, operation, ratings and applications especially as related to operational amplifiers

Linear regulated dc power supplies:

- Basic power supplies (ac to dc and dc to dc), circuits and applications
- Regulation requirements and applications

Switching power control circuits:

- Basic types, operation
- Critical issues, solutions and applications

Digital electronics

- Digital logic, circuits and power control applications

Power Inverters (DC to AC):

- Basic types, operation
- Critical issues, solutions and applications.

Study Guide

Lesson Power Points

POWER ELECTRONICS

Power Electronics -H025+H026.zip **http://www.filefactory.com/file/c0b6857/n/Power_Electronics_-H025_H026.zip**
H025_Operational_Amplifier H026_3_Ph_Power_Control_Electronics_1 H026_3_Ph_Power_Control_Electronics_2 H026_3_Ph_Power_Control_Electronics_3 H026_3_Ph_Power_Control_Electronics_4 In **Stage 3 Part 6.zip** **http://www.filefactory.com/file/c0cce63/n/Stage_3_Part_6.zip**
Operational amplifier+ single phase power control equipments H025_Lesson_1-Differential_Amplifier.zip

http://www.filefactory.com/file/c20fef9/n/H025_Lesson_1-Differential_Amplifier.zip

H025_Lesson_2-Comparator.zip

http://www.filefactory.com/file/c0b072e/n/H025_Lesson_2-Comparator.zip

H025 Lesson 3-Timer IC.zip

http://www.filefactory.com/file/c0b077e/n/H025_Lesson_3-Timer_IC.zip

H025 Lesson 4-Op Amp Circuit 1 & 2.zip

http://www.filefactory.com/file/c0b08c8/n/H025_Lesson_4-Op_Amp_Circuit_1_2.zip

H025 Lesson 5-Op amp characteristics+Band widthe compensation.zip

http://www.filefactory.com/file/c0b09da/n/H025_Lesson_5-Op_amp_characteristics_Band_widthe_compensation.zip

H025 Lesson 6-Op amp diode characteristics.zip

http://www.filefactory.com/file/c0b09e1/n/H025_Lesson_6-Op_amp_diode_characteristics.zip

H025 Lesson 7-Sine & square wave oscillators.zip

http://www.filefactory.com/file/c0b090a/n/H025_Lesson_7-Sine_square_wave_oscillators.zip

H025 Lesson 8-Op amp ckt-Integrator+Differentiator.zip

http://www.filefactory.com/file/c0b0909/n/H025_Lesson_8-Op_amp_ckt-Integrator_Differentiator.zip

H025 Lesson 9-Active filter.zip

http://www.filefactory.com/file/c0b0916/n/H025_Lesson_9-Active_filter.zip

H025 Lesson 10-Multistage Op amp ckt.zip

http://www.filefactory.com/file/c0b0948/n/H025_Lesson_10-Multistage_Op_amp_ckt.zip

H025 Lesson 11-Transducers.zip

http://www.filefactory.com/file/c0b0978/n/H025_Lesson_11-Transducers.zip

H025 Lesson 12-Introduction to control.zip

http://www.filefactory.com/file/c0b0986/n/H025_Lesson_12-Introduction_to_control.zip

Operational amplifier+ single phase power control equipments

Power Electronics -H025+H026.zip

http://www.filefactory.com/file/c0b6857/n/Power_Electronics_-H025_H026.zip

Three phase power control equipments

H026 Lesson 1-Single &Three phase power control.zip

http://www.filefactory.com/file/c0b1ac9/n/H026_Lesson_1-Single_Three_phase_power_control.zip

H026 Lesson 2-Solid state switching devices.zip

http://www.filefactory.com/file/c0b1af2/n/H026_Lesson_2-Solid_state_switching_devices.zip

H026 Lesson 3-Inverter Converter.zip

http://www.filefactory.com/file/c0b1a59/n/H026_Lesson_3-Inverter_Converter.zip

H026 Lesson 4-Power Diodes.zip

http://www.filefactory.com/file/c0b1a8f/n/H026_Lesson_4-Power_Diodes.zip

H026 Lesson 5-AC Motor speed control.zip

http://www.filefactory.com/file/c0b1ba7/n/H026_Lesson_5-AC_Motor_speed_control.zip

H026 Lesson 6-Current fed inverter.zip

http://www.filefactory.com/file/c0b1b0d/n/H026_Lesson_6-Current_fed_inverter.zip

Three phase power control equipments

ANALOG ELECTRONICS

H045 Lesson 1 Op-amp.zip
http://www.filefactory.com/file/c0b1b3a/n/H045_Lesson_1_Op-amp.zip
H045 Lesson 1 Op-amp

H045 Lesson 2 DC Non idealities.zip
http://www.filefactory.com/file/c0b1b5b/n/H045_Lesson_2_DC_Non_idealities.zip

H045 Lesson 3 Bias compensation.zip
http://www.filefactory.com/file/c0b1b86/n/H045_Lesson_3_Bias_compensation.zip

H045 Lesson 4 Slew rate.zip
http://www.filefactory.com/file/c0b1ca0/n/H045_Lesson_4_Slew_rate.zip

H045 Lesson 5 AC Noise.zip
http://www.filefactory.com/file/c0b1cb2/n/H045_Lesson_5_AC_Noise.zip

H045 Lesson 5 AC Noise
http://uploading.com/files/6dmm1ccf/H045%2BLesson%2B5%2BAC%2BNoise.zip/

H045 Lesson 6 Source noise resistance.zip
http://www.filefactory.com/file/c268af2/n/H045_Lesson_6_Source_noise_resistance.zip

H045 Lesson 7 Signal to noise ratio.zip
http://www.filefactory.com/file/c0b1cff/n/H045_Lesson_7_Signal_to_noise_ratio.zip

H045 Lesson 8 Frequency compensation.zip
http://www.filefactory.com/file/c0b1c0e/n/H045_Lesson_8_Frequency_compensation.zip

H045_Lesson_9_Stability_analysis.zip
http://www.filefactory.com/file/c0b1c95/n/H045_Lesson_9_Stability_analysis.zip

H045 Lesson 10 Feedforward compensation.zip
http://www.filefactory.com/file/c0b1c56/n/H045_Lesson_10_Feedforward_compensation.zip

Analogue Electronics

H045 Lesson 1 Op-amp.zip

http://www.filefactory.com/file/c0b1b3a/n/H045_Lesson_1_Op-amp.zip

H045 Lesson 2 DC Non idealities.zip

http://www.filefactory.com/file/c0b1b5b/n/H045_Lesson_2_DC_Non_idealities.zip

H045 Lesson 3 Bias compensation.zip

http://www.filefactory.com/file/c0b1b86/n/H045_Lesson_3_Bias_compensation.zip

H045 Lesson 4 Slew rate.zip

http://www.filefactory.com/file/c0b1ca0/n/H045_Lesson_4_Slew_rate.zip

H045 Lesson 5 AC Noise.zip

http://www.filefactory.com/file/c0b1cb2/n/H045_Lesson_5_AC_Noise.zip

H045 Lesson 6 Source noise resistance.zip

http://www.filefactory.com/file/c268af2/n/H045_Lesson_6_Source_noise_resistance.zip

H045 Lesson 7 Signal to noise ratio.zip

http://www.filefactory.com/file/c0b1cff/n/H045_Lesson_7_Signal_to_noise_ratio.zip

H045 Lesson 8 Frequency compensation.zip

http://www.filefactory.com/file/c0b1c0e/n/H045_Lesson_8_Frequency_compensation.zip

H045_Lesson_9_Stability_analysis.zip

http://www.filefactory.com/file/c0b1c95/n/H045_Lesson_9_Stability_analysis.zip

H045 Lesson 10 Feedforward compensation.zip

http://www.filefactory.com/file/c0b1c56/n/H045_Lesson_10_Feedforward_compensation.zip

AMPLIFIER

http://www.filefactory.com/file/c0cb6a8/n/Additional_3.zip

DC Power Supply

http://www.filefactory.com/file/4f92zgjjzg7j/DC%20Power%20Supply.pdf

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Textbook

Prescribed Texts:

Meade, R, Diffenderfer, R 2006, *Foundations of Electronics: Circuits and Devices* (Conventional Flow), 5th or latest edition, Delmar Cengage Learning, USA

http://www.filefactory.com/file/2yu0qvkoqppn/Electronic%20Devices.pdf

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Tutorial Exercises

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Further Readings

Analog & Digital Electronics 1

http://www.filefactory.com/file/27alnx6skg2x/BAE408Wk1.zip

Analog & Digital Electronics 2

http://www.filefactory.com/file/3vpyub43h53p/n/BAE408Wk2_zip

Analog & Digital Electronics 3

http://www.filefactory.com/file/4c6snjh05cel/n/BAE408Wk3_zip

Control 1

http://www.filefactory.com/file/4lahmzh0qf3b/n/BAE502_Wk_1_zip

Control 2

http://www.filefactory.com/file/46t9zbh859rl/BAE502_Wk_2.zip

Control 3

http://www.filefactory.com/file/15qea45hhvxx/n/BAE502_Wk_3_zip

Control 4

http://www.filefactory.com/file/22cy88iyi78f/n/BAE503Wk1PPT_zip

Control 5

http://www.filefactory.com/file/2d82bvgvzgx3/n/BAE503Wk2PPT_zip

Control 6

http://www.filefactory.com/file/3v7x6hmksvnf/n/BAE503Wk3PPT_zip

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ENPRA101A Engineering Practice

Course Outline

In this subject you will learn about the practices of an engineering professional within a multidisciplinary framework. You will develop basic knowledge and skills relating to electrical and other engineering specialisations, including:

Introduction to the Regulatory System:

- Electricity Act
- Electricity Regulation Australian
- Standards State Regulators
- Workplace Health and Safety
- Engineers Code of Ethics

Drawings And Specifications:

- Drawing Interpretation
- Overview of Computer Aided Design (CAD)
- Writing a Specification

Generation and Distribution:

- Generating Plant
- Transmission Grid
- Substations

Fasteners and Fastening Methods:

- Methods of securing electrical equipment to various surfaces

Wiring Systems:

- Load Calculations
- Max. Demand
- Cables and Systems
- AS3008

Control and Protection:

- Earthing
- Protection for safety
- Faults and overloads
- Protective devices and methods

Illumination:

Study Guide

Lesson Power Points

AUSTRALIAN ELECTRICIAN TRAINING

G033+G063+G107 (Week 1 to 6 Lessons)(G033)

G106 Cable Termination

G106+G033 Practical

G063 Wk 7+8

http://www.filefactory.com/file/423vowj4o34b/G063_Wk_7_8_zip

G033+G063+G107 Week 10 to 15

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to	Resources
Main	study	Additional study	Main exercise		Additional exercises	do	
EE07 Unit	EE011 Unit	For EE07+ EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011		
UEENEEE005B Fix and secure equipment	**UEENEEE105A Fix and secure electrotechnology equipment**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1	See 3		EE0	=	EE07	Addit	

below	below		11		+	ional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	(2) Click HERE to download other Exercises

7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase **IN THE LINK INDICATED IN ROLL 11**
10	Fixing Equipments E002_E005.zip **IN THE LINK INDICATED IN ROLL 11**
11	**BACK UP FOR 9 & 10** Stage 1 Part 1.zip http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip Stage 1 Part 5.zip http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to	Resources
Main	study	Additional study	Main exercise		Additional exercises	do	
EE07 Unit	EE011 Unit	For EE07+ EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011		
UEENEEE007B **Use drawings, diagrams, schedules and manuals**	**UEENEEE107A** **Use drawings, diagrams, schedules, standards, codes and specifications**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below

Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	ElectricalDrawing1 ElectricalDrawing2 ElectricalDrawing3 Stage 1 Part 3.zip http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip GeneralDrawing1 GeneralDrawing2 Stage 1 Part 4.zip http://www.filefactory.com/file/c0cc1cd/n/Stage_1_Part_4.zip
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	ElectricalDrawing1 ElectricalDrawing2 ElectricalDrawing3 Stage 1 Part 3.zip http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip GeneralDrawing1 GeneralDrawing2 Stage 1 Part 4.zip http://www.filefactory.com/file/c0cc1cd/n/Stage_1_Part_4.zip
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip

	Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	(2) Click HERE to download other Exercises
7	Stage_1_Electrical_workshop_practicals.pdf
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face session Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase in Stage 1 Part 3.zip http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip
10	ElectricalDrawing1 ElectricalDrawing2 ElectricalDrawing3 Stage 1 Part 3.zip http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip GeneralDrawing1 GeneralDrawing2

	Stage 1 Part 4.zip http://www.filefactory.com/file/c0cc1cd/n/Stage_1_Part_4.zip
11	**BACK UP FOR 9 & 10** Stage 1 Part 3.zip http://www.filefactory.com/file/c0cb8f5/n/Stage_1_Part_3.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to do	Resources
Main	study	Additional study	Main exercise		Additional exercises	do	
EE07 Unit	EE011 Unit	For EE07+EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011		
UEENEEE008B Lay wiring/cabling and terminate accessories for extra-low voltage circuits	**UEENEEE108A Lay wiring/cabling and terminate accessories for extra-low voltage (ELV) circuits**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	Study Option 1						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	Study Option 2						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop

	_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	2) Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face session Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase **IN THE LINK INDICATED IN ROLL 11**
10	Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008 **IN THE LINK INDICATED IN ROLL 11**
11	**BACK UP for 9 & 10** Stage 1 Part 5.zip http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip

	Stage 1 Part 1.zip http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to	Resources
Main	study	Additional study	Main exercise		Additional exercises	do	
EE07 Unit	EE011 Unit	For EE07+EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011		
UEENEEE033B Document occupational hazards and risks in electrical work	**UEENEEE137A Document and apply measures to control OHS risks associated with electrotechnology work**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip

	http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	2) Click HERE to download other Exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises**
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face session Stage_1_Electrical_workshop_practicals.pdf Wiring_Equipments_to_purchase **IN THE LINK INDICATED IN ROLL 11**
10	Electrical_safe_working.zip NREL_Disconnect_Reconnect.zip **IN THE LINK INDICATED IN ROLL 11**
11	**BACK UP for 9 & 10** Stage 1 Part 5.zip http://www.filefactory.com/file/c0cb9b3/n/Stage_1_Part_5.zip Stage 1 Part 1.zip http://www.filefactory.com/file/c0cb8ab/n/Stage_1_Part_1.zip

What to study			Which exercises to do		What practical to do	Resources
Main study		Additional study	Main exercise		Additional exercises	
EE07 Unit	EE011 Unit	For EE07+EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011	
	UEENEEG106A Terminate cables, cords and accessories for low voltage circuits	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	Study Option 1						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	Study Option 2						
See 2 below	See 4 below						

4	ELV_Cable_termination in Stage 2 Part 2A.zip http://www.filefactory.com/file/c0cca4a/n/Stage_2_Part_2A.zip
5	Video-- Electrical workshop Lesson 1 OHS.zip http://www.filefactory.com/file/c0adbfa/n/Electrical_workshop_Lesson_1_OHS.zipElectrical workshop Lesson 2 Workplace hazard+Fix & secure equipment.zip

	http://www.filefactory.com/file/c0adca2/n/Electrical_workshop_Lesson_2_Workplace_hazard_Fix_secure_equipment.zip Electrical workshop Lesson 3 Mechanical fixing.zip http://www.filefactory.com/file/c0adc1d/n/Electrical_workshop_Lesson_3_Mechanical_fixing.zip Electrical workshop Lesson 4 Basic electrical wiring.zip http://www.filefactory.com/file/c0add65/n/Electrical_workshop_Lesson_4_Basic_electrical_wiring.zip Electrical workshop Lesson 5 Wiring circuits.zip http://www.filefactory.com/file/c0ade9b/n/Electrical_workshop_Lesson_5_Wiring_circuits.zip Electrical workshop Lesson 6 Electrical safety testing.zip http://www.filefactory.com/file/c0adf90/n/Electrical_workshop_Lesson_6_Electrical_safety_testing.zip Electrical workshop Lesson 7 Testing insulation and polarity.zip http://www.filefactory.com/file/c0ad031/n/Electrical_workshop_Lesson_7_Testing_insulation_and_polarity.zip Electrical workshop Lesson 8 Testing lighting polarity.zip http://www.filefactory.com/file/c0ad1d8/n/Electrical_workshop_Lesson_8_Testing_lighting_polarity.zip
6	
7	Only practical assessment in class
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	Attend face to face class http://www.filefactory.com/file/2f8e3fph9trr/n/G106_G033_Practical_zip
10	ELV_Cable_termination Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008 ElectricalDrawing1.zip ElectricalDrawing2.zip ElectricalDrawing3.pdf **IN THE LINK INDICATED IN ROLL 11**
11	**BACK UP** Stage 2 Part 2A.zip http://www.filefactory.com/file/c0cca4a/n/Stage_2_Part_2A.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to	Resources
Main	study	Additiona	Main		Additio	do	

n		**l study**	**exercise**		**nal exercises**		
EE07 Unit	**EE011 Unit**	**For EE07+EE011 +Video**	**Study Option (1) EE-07**	**Study Option (2) EE-07**	**for EE011**		
	UEENEEG063A Arrange circuits, control and protection for general electrical installations	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	
2	
3	
4	
5	**Electrical wiring + Electrical Installation requirement** G003+G004+G007 Lesson 1 Electrical installation protection.zip http://www.filefactory.com/file/c35d2f2/n/G003_G004_G007_L

esson_1_Electrical_installation_protection.zip

G003+G004+G007 Lesson 2 Electrical system safety.zip

http://www.filefactory.com/file/cf937ac/n/G003_G004_G007_Lesson_2_Electrical_system_safety.zip

G003+G004+G007 Lesson 3 Heating+Cable ckt protection exercise.zip

http://www.filefactory.com/file/c0abfe8/n/G003_G004_G007_Lesson_3_Heating_Cable_ckt_protection_exercise.zip

G003+G004+G007 Lesson 4 Wiring system.zip

http://www.filefactory.com/file/cf939f0/n/G003_G004_G007_Lesson_4_Wiring_system.zip

G003+G004+G007 Lesson 5 Hazardous area electrical system.zip

http://www.filefactory.com/file/cf94af8/n/G003_G004_G007_Lesson_5_Hazardous_area_electrical_system.zip

G003+G004+G007 Lesson 6 Overload protection RCD.zip

http://www.filefactory.com/file/cf94bcf/n/G003_G004_G007_Lesson_6_Overload_protection_RCD.zip

G003+G004+G007 Lesson 7 RCD + Metering.zip

http://www.filefactory.com/file/cf94cae/n/G003_G004_G007_Lesson_7_RCD_Metering.zip

G003+G004+G007 Lesson 8 Switch board installation.zip

http://www.filefactory.com/file/cf94c40/n/G003_G004_G007_Lesson_8_Switch_board_installation.zip

	G003+G004+G007 Lesson 9 Cable selection+Maximum demand.zip http://www.filefactory.com/file/cf94dbb/n/G003_G004_G007_Lesson_9_Cable_selection_Maximum_demand.zip G003+G004+G007 Lesson 10 Electrical installation safety testing.zip http://www.filefactory.com/file/cf94123/n/G003_G004_G007_Lesson_10_Electrical_installation_safety_testing.zip
6	
7	**EE07 & EE011 units mapping for Theory study & Exercises** Only face to face class assessment
8	Only face to face class assessment
9	EE07 & EE011 units mapping for Theory study & Exercises Attend face to face class PRACTICAL Workshop 2+3 WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip OTHER PRACTICALS ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf **IN THE LINK INDICATED IN ROLL 11**
10	Construction ElectricalSafety.zip InserviceTesting.zip Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008

	IN THE LINK INDICATED IN ROLL 11
11	**BACK UP FOR 9 & 10** Stage 2 Part 1B.zip http://www.filefactory.com/file/c0ccac0/n/Stage_2_Part_1B.zip Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip Stage 2 Part 6.zip http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip Stage 3 Part 4.zip http://www.filefactory.com/file/c0ccd9a/n/Stage_3_Part_4.zip Stage 4 Part 8.zip http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip Stage 4 Part 9.zip http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip Stage 4 Part 10.zip http://www.filefactory.com/file/c0cc5f8/n/Stage_4_Part_10.zip Stage 3 Part 5.zip http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip Stage 3 Part 9.zip http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip

Study Guide EE07 & EE011

What to study Main		Additional study	Which exercise	exercises to do	Additional exercises	What practical to do	Resources
EE07 Unit	**EE011 Unit**	**For EE07+EE011 +Video**	**Study Option (1) EE-07**	**Study Option (2) EE-07**	**for EE011**		
UEENEEG007A Select wiring systems and cables for	**UEENEEG107A Select wiring systems and cables for**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below

low voltage general electrical installations	**low voltage general electrical installations**						
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	AS3000-2007Overview.zip AS3000_AS3008TablesExtract.zip WiringRules.zip Part (1) Study the following notes Installation_Requirement_1-A.zip Installation_Requirement_1-B.zip Installation_Requirement_2-A.zip Installation_Requirement_2-B.zip Stage_2_Wiring.zip In Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip Stage 2 Part 6.zip http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip Stage 3 Part 1B.zip http://www.filefactory.com/file/c0ccc42/n/Stage_3_Part_1B.zip Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip Stage 3 Part 4.zip http://www.filefactory.com/file/c0ccd9a/n/Stage_3_Part_4.zip Stage 3 Part 5.zip http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip Stage 3 Part 6.zip http://www.filefactory.com/file/c0cce63/n/Stage_3_Part_6.zip Stage 3 Part 9.zip http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip

	Stage 4 Part 7.zip http://www.filefactory.com/file/c0cc479/n/Stage_4_Part_7.zip Stage 4 Part 8.zip http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip Stage 4 Part 9.zip http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip Stage 4 Part 14.zip http://www.filefactory.com/file/c0cc684/n/Stage_4_Part_14.zip
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
4	AS3000-2007Overview.zip AS3000_AS3008TablesExtract.zip WiringRules.zip Part (1) Study the following notes Installation_Requirement_1-A.zip Installation_Requirement_1-B.zip Installation_Requirement_2-A.zip Installation_Requirement_2-B.zip Stage_2_Wiring.zip in www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING
5	**G007** G007 Lesson 1 AS3000 Wiring rule overview.zip http://www.filefactory.com/file/cf94220/n/G007_Lesson_1_AS3000_Wiring_rule_overview.zip G007 Lesson 2 Maximum Demand calculation.zip http://www.filefactory.com/file/cf9456f/n/G007_Lesson_2_Maximum_Demand_calculation.zip G007 Lesson 3 Cable selection.zip

	http://www.filefactory.com/file/cf9465c/n/G007_Lesson_3_Cable_selection.zip G007 Lesson 4 Cable voltage drop calculation.zip http://www.filefactory.com/file/cf9479e/n/G007_Lesson_4_Cable_voltage_drop_calculation.zip G007 Lesson 5 Derating of cable part 1.zip http://www.filefactory.com/file/cf95acb/n/G007_Lesson_5_Derating_of_cable_part_1.zip G007 Lesson 6 Derating of cable part 2.zip http://www.filefactory.com/file/cf95a6b/n/G007_Lesson_6_Derating_of_cable_part_2.zip G007 Lesson 7 Derating of cable for HRC fuse protection.zip http://www.filefactory.com/file/cf95cd7/n/G007_Lesson_7_Derating_of_cable_for_HRC_fuse_protection.zip G007 Lesson 8 Final subcircuit fault loop impedance.zip http://www.filefactory.com/file/cf95dd1/n/G007_Lesson_8_Final_subcircuit_fault_loop_impedance.zip **Electrical Installation requirement**
6	Click HERE to download the other exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises** Do the assignments from the following book & submit the assignment (1) Cable_Installation.zip Do the assignments from the following book & submit the assignment (2) Regulatory_Requirement.zip
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	EE07 & EE011 units mapping for Theory study & Exercises PRACTICAL Workshop 2+3 WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip

	ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip OTHER PRACTICALS ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf In www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING
10	
11	**BACK UP FOR 9 & 10** Stage 2 Part 1B.zip http://www.filefactory.com/file/c0ccac0/n/Stage_2_Part_1B.zip Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip Stage 2 Part 6.zip http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip Stage 3 Part 4.zip http://www.filefactory.com/file/c0ccd9a/n/Stage_3_Part_4.zip Stage 3 Part 5.zip http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip Stage 3 Part 9.zip http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip Stage 4 Part 7.zip http://www.filefactory.com/file/c0cc479/n/Stage_4_Part_7.zip Stage 4 Part 8.zip http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip Stage 4 Part 9.zip http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip Stage 4 Part 10.zip http://www.filefactory.com/file/c0cc5f8/n/Stage_4_Part_10.zip

Study Guide EE07 & EE011

What to	study		Which	exercises		What practi	Resources

				to do		cal to	
Main	study	Additional study	Main exercise		Additional exercises	do	
EE07 Unit	EE011 Unit	For EE07+EE011 +Video	Study Option (1) EE-07	Study Option (2) EE-07	for EE011		
UEENEEG003A Install low voltage wiring and accessories	**UEENEEG103A Install low voltage wiring and accessories**	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip
2	
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip **G103+104 Notes+Lessons** http://www.filefactory.com/file/2bg8qift6nzh/n/G103_G104_zip
4	Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008 Fixing Equipments

	E002_E005.zip Lighting.zip E_trade_1.zip E_trade_2.zip E_trade_3.zip E_trade_4.zip G008_General_Notes_1.zip G008_General_Notes_2.zip Hazard_Identification.zip G003_G004_Wiring_2_Part_1.zip G003_G004_Wiring_2_Part_2.zip Cable_CktProt_E_Accessories.zip Cable_Conduit_E_Accessories.zip Elect_Installation_Protection_Method_Devices.zip Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_2.zip ElectricInstallationDesign.zip ElectSystSafety1.zip ElectSystSafety2.zip FireProtHeatingTestingEarthing.zip GeneralWiring.zip HazardLightingPanel.zip PanelRCDWireSpecial_Installation.zip ProtectionMethods.zip in www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING
5	**Electrical wiring + Electrical Installation requirement** G003+G004+G007 Lesson 1 Electrical installation protection.zip http://www.filefactory.com/file/c35d2f2/n/G003_G004_G007_Lesson_1_Electrical_installation_protection.zip G003+G004+G007 Lesson 2 Electrical system safety.zip http://www.filefactory.com/file/cf937ac/n/G003_G004_G007_Lesson_2_Electrical_system_safety.zip G003+G004+G007 Lesson 3 Heating+Cable ckt protection exercise.zip http://www.filefactory.com/file/c0abfe8/n/G003_G004_G007_Lesson_3_Heating_Cable_ckt_protection_exercise.zip

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6	Click HERE to download the other exercises
7	**EE07 & EE011 units mapping for Theory study & Exercises** Assessment Read the above notes files and do the assignments for the following tutorial file. WiringPracticals.zip G003G004Tutorial.zip in www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING
8	http://www.filefactory.com/file/3qun68epu0lp/n/Advanced_Diploma_in_Electrical_Engineering_Exercises_EE011_pdf
9	**EE07 & EE011 units mapping for Theory study & Exercises** Attend the face to face class PRACTICAL http://www.filefactory.com/file/54l4d5rif1z3/n/Advanced_Wiring_Part_1_zip **Advanced Wiring Part 1+2—G103** http://www.filefactory.com/file/1xb18xg1gaz1/n/Advanced_Wiring_Part_1_and_2_zip **Electrical Installation Safety Testing** http://www.filefactory.com/file/5mv9s6dx174h/n/Electrical_Installation_Safety_Testing_zip

	Workshop 2+3 WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip OTHER PRACTICALS ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf
10	Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip Power Distribution Trade Power_Distribution_Trade.zip Metering Metering.zip
11	**BACK UP FOR 9 & 10** Stage 2 Part 1B.zip http://www.filefactory.com/file/c0ccac0/n/Stage_2_Part_1B.zip Stage 2 Part 3.zip http://www.filefactory.com/file/c0ccb1f/n/Stage_2_Part_3.zip Stage 2 Part 6.zip http://www.filefactory.com/file/c0cccc0/n/Stage_2_Part_6.zip Stage 3 Part 3.zip http://www.filefactory.com/file/c0ccd44/n/Stage_3_Part_3.zip Stage 3 Part 4.zip http://www.filefactory.com/file/c0ccd9a/n/Stage_3_Part_4.zip Stage 3 Part 5.zip http://www.filefactory.com/file/c0ccefd/n/Stage_3_Part_5.zip Stage 3 Part 8.zip http://www.filefactory.com/file/c0ccf09/n/Stage_3_Part_8.zip Stage 3 Part 9.zip http://www.filefactory.com/file/c0ccf48/n/Stage_3_Part_9.zip Stage 4 Part 7.zip http://www.filefactory.com/file/c0cc479/n/Stage_4_Part_7.zip Stage 4 Part 8.zip http://www.filefactory.com/file/c0cc5a1/n/Stage_4_Part_8.zip Stage 4 Part 9.zip http://www.filefactory.com/file/c0cc5db/n/Stage_4_Part_9.zip Stage 4 Part 10.zip http://www.filefactory.com/file/c0cc5f8/n/Stage_4_Part_10.zip

Study Guide EE07 & EE011

What to	study		Which	exercises to do		What practical to do	Resources
Mai	study	Additiona	Main		Additio	do	

n		l study	exercise		nal exercises		
EE07 Unit	**EE011 Unit**	**For EE07+EE011 +Video**	**Study Option (1) EE-07**	**Study Option (2) EE-07**	**for EE011**		
	UEENEEG033A Solve problems in single and three phase low voltage electrical apparatus and circuits	See 5 below	See 6 below	See 7 below	See 8 below	See 9 below	See 10 below
Study Option 1	**Study Option 1**						
See 1 below	See 3 below		EE011	=	EE07 +	Additional	
Study Option 2	**Study Option 2**						
See 2 below	See 4 below						

1		
2		
3	http://www.filefactory.com/file/c0b67b7/n/Electrical_Workshop_Wiring_E001_2_3_4_5_7_8_33_G003_4_7.zip **G033** http://www.filefactory.com/file/1b2utxydvcx7/n/G033_zip	
4	Wiring_Notes_1. Wiring_Notes_2 Switchboard_Wiring 1Wiring_E033_E008 2Wiring_E033_E008	

	Fixing Equipments E002_E005.zip Lighting.zip E_trade_1.zip E_trade_2.zip E_trade_3.zip E_trade_4.zip G008_General_Notes_1.zip G008_General_Notes_2.zip Hazard_Identification.zip G003_G004_Wiring_2_Part_1.zip G003_G004_Wiring_2_Part_2.zip Cable_CktProt_E_Accessories.zip Cable_Conduit_E_Accessories.zip Elect_Installation_Protection_Method_Devices.zip Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_1.zip Elect_Installation_Requirement_2.zip ElectricInstallationDesign.zip ElectSystSafety1.zip ElectSystSafety2.zip FireProtHeatingTestingEarthing.zip GeneralWiring.zip HazardLightingPanel.zip PanelRCDWireSpecial_Installation.zip ProtectionMethods.zip In www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING	
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	_Heating_Cable_ckt_protection_exercise.zip G003+G004+G007 Lesson 4 Wiring system.zip http://www.filefactory.com/file/cf939f0/n/G003_G004_G007_Lesson_4_Wiring_system.zip G003+G004+G007 Lesson 5 Hazardous area electrical system.zip http://www.filefactory.com/file/cf94af8/n/G003_G004_G007_Lesson_5_Hazardous_area_electrical_system.zip G003+G004+G007 Lesson 6 Overload protection RCD.zip http://www.filefactory.com/file/cf94bcf/n/G003_G004_G007_Lesson_6_Overload_protection_RCD.zip G003+G004+G007 Lesson 7 RCD + Metering.zip http://www.filefactory.com/file/cf94cae/n/G003_G004_G007_Lesson_7_RCD_Metering.zip G003+G004+G007 Lesson 8 Switch board installation.zip http://www.filefactory.com/file/cf94c40/n/G003_G004_G007_Lesson_8_Switch_board_installation.zip G003+G004+G007 Lesson 9 Cable selection+Maximum demand.zip http://www.filefactory.com/file/cf94dbb/n/G003_G004_G007_Lesson_9_Cable_selection_Maximum_demand.zip G003+G004+G007 Lesson 10 Electrical installation safety testing.zip http://www.filefactory.com/file/cf94123/n/G003_G004_G007_Lesson_10_Electrical_installation_safety_testing.zip **Electrical wiring + Electrical Installation requirement**	
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9	Attend the face to face class http://www.filefactory.com/file/2f8e3fph9trr/n/G106_G033_Practical_zip	
10	Power Distribution Trade Power_Distribution_Trade.zip Metering Metering.zip PRACTICAL Workshop 2+3 WorkShop_Part_2_Practical_1_to_6_.zip WorkShop_Part_2_Practical_7_to_12_.zip WorkShop_Part_2_Practical_13_to_17_.zip WorkShop_Part_2_Practical_18_to_21_.zip ElectricalWorkshopPart3_G008_Group1Machine_.zip ElectricalWorkshopPart3_G008_Group2LineProtection_.zip ElectricalWorkshopPart3_G008_Group3InstrumentsDevices_.zip OTHER PRACTICALS ELECTRICAL_WORKSHOP_PART_2_G003_G004_G009_.zip Electrical_Workshop_Part_2_Practical_1_to_18.zip Electrical_Workshop_Part_2_Practical_19_to_21.zip G003_G004_G009Practicals.pdf In www.electricaldiploma2013.zoomshare.com AUSTRALIAN ELECTRICIAN TRAINING	
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Textbook

Prescribed Texts:

TAFE NSW Higher Education 2012, *Engineering Practices (ENPRA101A) Lecture Notes and Workbook*, lecture notes distributed in Engineering Practices

Recommended Readings:

Hampson, J 2006, *Electrical Trade Principles*, Pearson Education Australia (Chapter 6)

Pethebridge, K & Neeson I 2009, *Electrical Wiring Practice Vol 1*, 7th or latest edition, McGraw Hill, Australia (Chapters 1, 4 and 7)

Pethebridge, K & Neeson I 2002, *Electrical Wiring Practice Vol 2*, 6th or latest edition, McGraw Hill, Australia (Section 22.6)

Standards Australia *AS/NZS 3000:Electrical installations (Wiring Rules)*

Standards Australia *AS/NZS 3008 Electrical installations—Selection of cables*

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Tutorial Exercises

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Further Readings

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Online Practicals

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Text Books for

ENEMP101A Introduction to Engineering Mathematics and Physics
ENEMP102A Foundation Engineering Mathematics and Physics
ENEMP201A Intermediate Engineering Mathematics and Physics
ENEMP202A Advanced Engineering Mathematics and Physics

Giancoli, DC, 2000, Physics For Scientists And Engineers, 4th or latest edition, Volumes 1,2,3, ISBN: 9780132273596.

http://www.filefactory.com/file/7c514m4yw0ov/Giancoli_-_Physics_6th_Solutions_pdf

http://www.filefactory.com/file/1588szswdljx/Giancoli_-_Physics_6th_pdf

Bird, J, 2007, Engineering Mathematics, 4th or latest edition, Newnes Publishing, ISBN: 0-7506-5776-6,

http://www.filefactory.com/file/2z1jzorebdwx/2-john-bird-higher-engineering-mathematics_pdf

http://www.filefactory.com/file/2z1jzorebdwx/2-john-bird-higher-engineering-mathematics_pdf

http://www.filefactory.com/file/6oh03k3msqv1/Basics_of_MATLAB_and_Beyond_pdf

http://www.filefactory.com/file/28cbwzhk6ral/Engineering_Mathematics_4E_pdf

http://www.filefactory.com/file/6uizsgnh2snp/Essentials_of_MATLAB_Programming_pdf

http://www.filefactory.com/file/2z1jzorebdwx/2-john-bird-higher-engineering-mathematics_pdf

http://www.filefactory.com/file/4ljoibd9h6dv/Learning_MATLAB_pdf

http://www.filefactory.com/file/45ftpkh77jsf/MATLAB_Programming_For_Engineers_pdf

http://www.filefactory.com/file/729l3my8kcsp/matlab_quickref_pdf

http://www.filefactory.com/file/2179ehdxp9g5/MatlabNotes_pdf

Text Books for

ENMCC 101A Foundation Mechanical & Civil Engineering Principle
ENMCC 201A Advanced Mechanical & Civil Engineering Principle

http://www.filefactory.com/file/724kx95f2ayf/27767685-Materials-Engineers-Technicians_pdf

http://www.filefactory.com/file/7analtqujo7z/59446893-A-Textbook-of-Engineering-Mechanics-by-R-K-Bansal_pdf

http://www.filefactory.com/file/4k7yvsvt47jr/123974244-strength-of-material-by-r-k-bansal_pdf

http://www.filefactory.com/file/3h4q2snf4kgd/Fluid_Mechanics_and_Thermodynamics_of_Turbomachinery_4E_pdf

http://www.filefactory.com/file/4can70505quj/RE001%2BENERGY%20101A.pdf

http://www.filefactory.com/file/4f92zgjjzg7j/DC%20Power%20Supply.pdf

Part (3) Qualified (2) Course

RE 501-Control of Solar Energy System
RE502- Biomass Gasification
RE503- Energy Management in Industrial and Commercial Facilities
RE504- Engineering Solution for Sustainability
RE505- Green Building Design
RE506- Low Emission Power Generation Technologies
RE507- Offshore Wind Turbines
RE508- Solar Hydrogen Energy System
RE509- Applied Photovoltaics
RE510- Water Conservation
RE511- Sustaining Earth Energy resourcres

A written report between 10,000 – 12,000 words that covers both theory & practical knowledges of the above units.

RE 501-Control of Solar Energy System.pdf (13.93MB)
http://www.filefactory.com/file/16zy6ploevjp/n/RE_501-Control_of_Solar_Energy_System.pdf

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RE507- Offshore Wind Turbines.pdf (9.4MB)
http://www.filefactory.com/file/2mtdemeyzub/n/RE507-_Offshore_Wind_Turbines.pdf

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RE511- Sustaining Earth Energy resourcres.pdf (8.43MB)
http://www.filefactory.com/file/38jctruglh59/n/RE511-_Sustaining_Earth_Energy_resourcres.pdf

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RE503- Energy Management in Industrial and Commercial Facilities.pdf (2.89MB)
http://www.filefactory.com/file/3elg8jedxa4l/n/RE503-_Energy_Management_in_Industrial_and_Commercial_Facilities.pdf

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RE506- Low Emission Power Generation Technologies.pdf (22.75MB)
http://www.filefactory.com/file/6o1sfltodgc7/n/RE506-_Low_Emission_Power_Generation_Technologies.pdf

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Part (4) Final Thesis

Res 601 Research Method

MAE 602 Thesis

http://www.filefactory.com/file/1l1r1k0ftawt/n/11.Research+Thesis_(ICT_605).zip

This course guides the student, step by step, through the research process, from problem selection through writing up results. It provides all of the basics necessary to complete a research project in any discipline.

Outline. The following aspects are reflected in this course:

What is research?

Tools of research

The problem: the heart of the research process

Review of the related literature

Planning your research design

Writing the research proposal

Qualitative research

Historical research

Descriptive research

Experimental and causal - comparative designs

Statistical techniques for analyzing quantitative data

Technical details: style, format, and organization of the research report

Masters Research Proposal

Synopsis: Research students are expected to present a written research proposal within three months after commencement. The proposal is handed in to the study leader. Assessors of this proposal are selected by the faculty for their understanding of the field and the research involved. The purpose of a research is to set out a plan for conducting the research and writing the dissertation within the available time. It should take account of the availability and guidance of the study leader. The starting point for a research proposal is the topic, which is the field of interest in which the research is to be carried out. In introducing the topic, the proposal should clarify the field that it falls into and the specific part that field which the research will explore. It should clarify why the topic is of interest and importance, and how the proposed research will contribute to the filed of knowledge or profession. The proposal should clarify the research questions, ensuring that these are specific and answerable. It is important to show how these questions relate to the topic are, and how they will advance the student's contribution. The proposal should detail the research to be carried out, and clarify the research methods, the timeframe and the reasons for selecting particular methods. Where a period of literature review or research should

precede any empirical research, this should be factored in as part of the research. It is important to estimate any periods of field research and to flag their duration and cost in your research proposal.

MAE 601 Professional Engineering Practice

MENG6003 Selective I: management subject (45 hrs) 3 credits

MENG6004 Selective II: management subject (45 hrs) 3 credits

Res 601 Research Method

MENG6005 Quantitative Methods and Statistics (45 hrs) 3 credits

MAE 602 Thesis

Engineering Project/Thesis 24 credits

Candidates need to complete a 60000-words engineering dissertation (in Myanmar or English) and a 3000-words executive portfolio (in English).

This program requires the candidates to complete a dissertation as part of the assessment for the MSc (RE) degree. Doing a thesis means that instead of knowledge and information being presented and following a prescribed route for answering questions, candidates are thrust into an active role of managing an investigation into a topic area. This means researching and discovering things for themselves. They will have to set their own targets and parameters, pose their own central research questions and decide on the appropriate sources of information to support the research. It therefore requires the use of the higher-level cognitive skills of analysis, synthesis and evaluation. Candidates may choose an area of particular interest to them within the scope of course title. A dissertation is an individual effort and the candidate, academic tutor and the course professor will work together on constructing an approved topic (research question) and methodologies.

Engineering Dissertation Defense 9 credits

It is expected of Master's candidates to defend their thesis by means of a colloquium doctum (academic discussion). The purpose of the meeting is for the candidates to convince a panel of experts in the field of the dissertation how well they have done in the conducting of their research study and the preparation of their dissertation

Program Total Credits 48 credits

Candidates need to complete all course assessments with the results of Grade B+

or above.

Renewable Energy Engineering Public Seminar + Diploma& Bachelor of Engineering (Renewable Energy)

Master of Science (Renewable Energy Engineering)

Master of Science (Renewable Energy) Learning Support Website

Professional Diploma in Structural Engineering (120 Credits)

Master of Science (Structural Engineering) (240 Credits)

Pre requisite

Advanced Diploma in Civil Engineering or Equivalent with 60 credits advanced standing

Subjects (Totalling 60 Credits)

- CE113 Structure 1 (3 credits)
- CE114 Structure 2 (2 Credits)
- BAE404S Engineering Materials& Strength of Materials(10 credits)
- BAE 403S Engineering Mechanics (10 credits)
- RE010 Engineering Materials (5 credits)
- BAE621S Structural Engineering (Civil) (10 credits)
- BAE424SReinforced Concrete (Civil) (10 credits)
- BAE 701 Engineering Fundamental (10 credits)

(BAE403S, BAE404SBAE621S and BAE424S are more intensive version of BAE403, BAE404,BAE621 and BAE424)

Master Course (120 Credits transfer+120 Credits of study=240 credits)

- BAE 708 Engineering Knowledge (10 Credits)
- BAE 705 Engineering Competency Development (10 Credits)
- BAE 706 Engineering Report Writing Development (10 Credits)
- BAE 707 Engineering Ethics (10 Credits)
- BAE 709 Design Project (40 Credits)
- BAE 709S Structural Design Project (20 Credits)

  (BAE706, BAE709 and BAE709S can be concurrently presented)

Advanced Diploma of Construction Studies

RIGGING

Scaffolding

http://www.highlightcomputer.com/CivilDegreeInstruction.pdf

http://www.highlightcomputer.com/CivilDegreeInstruction1.pdf

http://www.highlightcomputer.com/CivilDiplomaInstruction.pdf

Written Lessons References+ Text Books

http://www.filefactory.com/file/6wu38l73pdhv/B%20App%20Eng%20%28Building%20Service%29%2CDip%20Civil%20Engg%20Study%20Guide.pdf

Advanced Diploma of Construction Studies

	GE+IE UNITS	TRAINING PACKAGE UNITS	
GE1	Electrical Wiring (EE)	MEM18049C	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.
		MEM18050C	Disconnect/reconnect fixed wired equipment over 1000 volts a.c./1500 volts d.c.
		MEM18051B	Fault find and repair/rectify complex electrical circuits
		MEM18070C	Modify complex electrical circuits and systems
		MEM18073A	Perform advanced equipment testing and diagnostics on mobile plant and equipment
GE2	Electrical Machine (EE)		
GE3	Electrical Distribution (EE)		
GE4	Power System Operation (EE)		
GE5	Power System Protection		
GE6	Occupational Health & Safety	MEM30008A	Apply basic economic and ergonomic concepts to evaluate engineering applications
		BSBWHS506A	Contribute to developing, implementing and maintaining WHS management systems
		MEM13002B	Undertake occupational health and safety activities in the workplace
		MSS403032A	Analyse manual handling processes
		MEM13010A	Supervise occupational health and safety in an industrial work environment.
		BSBOHS504B	* Apply principles of OHS risk management
		BSBPMG505A	Manage project quality
		BSBPMG508A	Manage project risk
		CPCCBC5014A	Conduct asbestos assessment associated with removal
		CPCCOHS1001A	Work safely in the construction industry
GE7	Project Management (EE/CE/ME)	MEM22012A	Coordinate resources for an engineering project or operation
		MEM22013A	Coordinate engineering projects
		CPCCBC5005A	Select and manage building and construction contractors
		CPCCBC5007B	Administer the legal obligations of a building or construction contractor
		CPCCBC5013A	Develop professional technical and legal reports on building and construction projects
		CPCCBC4009B	Apply legal requirements to building and construction projects
GE8	Electronics (EE)		
GE9	Process Control (EE/ME)	MEM23112A	Investigate electrical and electronic controllers in engineering applications
		MEM10007C	Modify control systems
GE10	Industrial Electronics (EE)	MEM30026A	Select and test components for simple electronic switching and timing circuits
GE11	Programmable Logic Controller (EE/ME)	MEM23003A	Operate and program computers and/or controllers in engineering situations
		MEM30027A	Prepare basic programs for programmable logic controllers
		MEM23116A	Evaluate programmable logic controller and related control system component applications
		MSS402061A	Use SCADA systems in operations
		MSS404061A	Facilitate the use of SCADA systems in a team or work area
GE12	Photovoltaic Solar Electrical System		

GE13	Principle of Engine(ME)		
GE14	Fitting & Machining (ME)	MEM14005A	Plan a complete activity
		MEM15004B	Perform inspection
		MEM15005B	Select and control inspection processes and procedures
		MEM16010A	Write reports
		MEM18002B	Use power tools/hand held operations
		MEM18003C	Use tools for precision work
		MEM18006C	Repair and fit engineering components
		MEM18010C	Perform equipment condition monitoring and recording
		MEM18055B	Dismantle, replace and assemble engineering components
		MEM12003B	Perform precision mechanical measurement
		MEM12023A	Perform engineering measurements
		MEM12005B	Calibrate measuring equipment
		MEM12022B	Program coordinate measuring machines (advanced)
		MEM12003B	Perform precision mechanical measurement
		MEM12004B	Perform precision electrical/electronic measurement
		MEM12005B	Calibrate measuring equipment
GE15	Building Construction (CE)	CPCCBC4001A	* Apply building codes and standards to the construction process for low rise building projects
		CPCCBC5004A	Supervise and apply quality standards to the selection of building and construction materials
		CPCCBC4005A	Produce labour and material schedules for ordering
		CPCCBC4006B	Select, procure and store construction materials for low rise projects
GE16	Engineering Drawing I (EE/CE/ME)	MEM30031A	Operate computer-aided design (CAD) system to produce basic drawing elements
		MEM30032A	Produce basic engineering drawings
		MEM30033A	Use computer-aided design (CAD) to create and display 3-D models
		MEM09153A	Apply CAD modelling and data management techniques to aeronautical engineering designs
		MEM09155A	Prepare mechanical models for computer-aided engineering (CAE)
		MEM09156A	Prepare mechatronic models for computer-aided engineering (CAE)
		MEM09157A	Perform mechanical engineering design drafting
		MEM09158A	Perform mechatronics engineering design drafting
		MEM09204A	Produce basic engineering detail drawings
		MEM09205A	Produce electrical schematic drawings
		MEM09002B	Interpret technical drawing
		MEM09004B	Perform electrical/electronic detail drafting
		MEM09006B	Perform advanced engineering detail drafting
		MEM09007B	Perform advanced mechanical detail drafting
		MEM09008B	Perform advanced structural detail drafting
		MEM09009C	Create 2D drawings using computer aided design system
		MEM09010C	Create 3D models using computer aided design system
		MEM09023A	Create 3D code files using computer aided manufacturing system
		CPCCBC4014A	Prepare simple building sketches and drawings
GE17	Pipe Fitting (CE/ME)		
GE18	Air-conditioning & Refrigeration (ME)	MEM23144A	Contribute to the design of a commercial refrigeration system
		MEM23146A	Contribute to the design of industrial refrigeration systems
		MEM23147A	Contribute to the design of hydronic systems
		MEM23149A	Contribute to the design of commercial and industrial exhaust systems
		MEM23150A	Contribute to the design of heating systems
		MEM23153A	Contribute to the design of heat exchanger systems
		MEM23140A	Determine operational parameters for building HVAC hydronic systems
		MEM23142A	Determine psychrometric processes and system performance

		MEM23129A	Evaluate thermal loads for heating, ventilation, air conditioning and refrigeration
		MEM23130A	Coordinate servicing and fault-finding of HVACR control systems
		MEM18091B	Maintain and repair multi stage, cascade and/or ultra-cold industrial refrigeration systems
		MEM18092B	Maintain and repair commercial and/or industrial refrigeration and/or air conditioning controls
		MEM18093B	Maintain and repair integrated industrial refrigeration and/or large air handling system controls
GE19	Computer Programming (EE/CE/ME)		
GE20	Computer Networking (EE)		
GE21	Welding (ME)	MEM05024B	Perform welding supervision
		MEM05025C	Perform welding/fabrication inspection
		MEM05026C	Apply welding principles
		MEM05042B	Perform welds to code standards using flux core arc welding process
		MEM05043B	Perform welds to code standards using gas metal arc welding process
		MEM05044B	Perform welds to code standards using gas tungsten arc welding process
		MEM05045B	Perform pipe welds to code standards using manual metal arc welding process
		MEM05046B	Perform welds to code standards using manual metal arc welding process
GE22	Painting & Decoration (CE)		
GE23	Pnuematics (CE/ME)	MEM30011A	Set up basic pneumatic circuits
GE24	Manufacturing Management (ME)	MEM14002B	Undertake basic process planning
		MSS405075A	Facilitate the development of a new product
ME 205	Manufacturing Processes-and-Materials	MEM14003B	Undertake basic production scheduling
Mgt 503	Production & Operation Management	MEM14087A	Apply manufactured product design techniques
Mgt 505	Quality Management and Manufacturing Engineering	MEM15007B	Conduct product and/or process capability studies
		MEM15008B	Perform advanced statistical quality control
		MEM14091A	Integrate manufacturing fundamentals into an engineering task
		MEM15011B	Exercise external quality assurance
		MEM15012B	Maintain/supervise the application of quality procedures
		MEM22014A	Coordinate engineering-related manufacturing operations
		MEM22015A	Source and estimate engineering materials requirements
		MEM22017A	Coordinate continuous improvement and technical development
		MEM22018A	Coordinate sales and promotion of engineering-related products or services
		MEM30013A	Assist in the preparation of a basic workplace layout
		MEM30014A	Apply basic just in time systems to the reduction of waste
		MEM30015A	Develop recommendations for basic set up time improvements
		MEM30016A	Assist in the analysis of a supply chain
		MEM30017A	Use basic preventative maintenance techniques and tools
		MEM30018A	Undertake basic process planning
		MEM30019A	Use resource planning software systems in manufacturing
		MEM30020A	Develop and manage a plan for a simple manufacturing related project
		MEM30021A	Prepare a simple production schedule
		MEM30022A	Undertake supervised procurement activities
		MEM30023A	Prepare a simple cost estimate for a manufactured product
		MEM30024A	Participate in quality assurance techniques
		MEM15001B	Perform basic statistical quality control
		MEM23123A	Evaluate manufacturing processes
		MEM23131A	Evaluate rapid prototyping applications
		MEM23132A	Evaluate rapid manufacturing processes
		MEM14001B	Schedule material deliveries
		MEM14002B	Undertake basic process planning
		MEM14003B	Undertake basic production scheduling

ME 303	Computer Aided Design and Manufacturing	MEM30009A	Contribute to the design of basic mechanical systems
ME 534	Numerical Control	MEM23122A	Evaluate computer integrated manufacturing systems
		MEM05053A	Set and edit computer controlled thermal cutting machines
		MEM05054A	Write basic NC/CNC programs for thermal cutting machines
		MEM07016C	Set and edit computer controlled machines/processes
		MEM07018C	Write basic NC/CNC programs
		MEM07019C	Program NC/CNC machining centre
		MEM07020C	Program multiple spindle and/or multiple axis NC/CNC machining centre
		MEM07022C	Program CNC wire cut machines
		MEM07023C	Program and set up CNC manufacturing cell
		MEM07039A	Write programs for industrial robots
ME 434	Mechtronics-Robotics	MEM23126A	Evaluate industrial robotic applications
		MEM23064A	Select and test mechatronic engineering materials
GE25	Surveying (CE)	CPCCBC5006B	Apply site surveys and set-out procedures to medium rise building projects
		CPCCBC4018A	Apply site surveys and set-out procedures to building and construction projects
GE26	Energy Efficient Building Design	MEM23141A	Complete a building thermal performance survey
		CPCCBC5009A	Identify services layout and connection methods to medium rise construction projects
		CPCCBC5011A	Manage environmental management practices and processes in building and construction
		CPCSUS5002A	Develop action plans to retrofit existing buildings for energy efficiency
		CPCSUS5003A	Manage energy efficient building methods and strategies
		CPCCBC4020A	Build thermally efficient and sustainable structures
GE28	Hydraulic (CE/ME)	MEM30010A	Set up basic hydraulic circuits
GE29	Materials & Corrosion Prevention (CE/ME)	MEM30007A	Select common engineering materials
GE32	Electronic Security Installation		
GE33	Explosion Protection		
GE34	Engineering Business Management	MSAENV672B	Develop workplace policy and procedures for sustainability
		MSS402030A	Apply cost factors to work practices
		MSS403001A	Implement competitive systems and practices
		MSS403002A	Ensure process improvements are sustained
		MSS403010A	Facilitate change in an organisation implementing competitive systems and practices
		MSS403021A	Facilitate a Just in Time system
		MSS403023A	Monitor a levelled pull system of operations
		MSS403030A	Improve cost factors in work practices
		MSS403040A	Facilitate and improve implementation of 5S
		MSS403051A	Mistake proof an operational process
		MSS404050A	Undertake process capability improvements
		MSS404052A	Apply statistics to operational processes
		MSS404060A	Facilitate the use of planning software systems in a work area or team
		MSS405001A	Develop competitive systems and practices for an organisation
		MSS405002A	Analyse and map a value stream
		MSS405003A	Manage a value stream
		MSS405004A	Develop business plans in an organisation implementing competitive systems and practices
		MSS405005A	Manage competitive systems and practices responding to individual and unique customer orders

		MSS405010A	Manage relationships with non-customer external organisations
		MSS405011A	Manage people relationships
		MSS405012A	Manage workplace learning
		MSS405020A	Develop quick changeover procedures
		MSS405021A	Develop a Just in Time system
		MSS405022A	Design a process layout
		MSS405023A	Develop a levelled pull system for operations and processes
		MSS405030A	Optimise cost of a product or service
		MSS405031A	Undertake value analysis of product or process costs in terms of customer requirements
		MSS405040A	Manage 5S system in an organisation
		MSS405050A	Determine and improve process capability
		MSS405052A	Design an experiment
		MSS405060A	Develop the application of enterprise control systems in an organisation
		MSS405061A	Determine and establish information collection requirements and processes
		MEM23119A	Evaluate continuous improvement processes
		MEM30028A	Assist in sales of technical products/systems
		MEM14005A	Plan a complete activity
		MEM15002A	Apply quality systems
		MEM16006A	Organise and communicate information
		MEM17003A	Assist in the provision of on the job training
		BSBCUS501C	* Manage quality customer service
		BSBFIM501A	* Manage budgets and financial plans
		BSBHRM509A	* Manage rehabilitation or return to work programs
		BSBINN502A	Build and sustain an innovative work environment
		BSBITA401A	Design databases
		BSBITU402A	Develop and use complex spreadsheets
		BSBITU404A	Produce complex desktop published documents
		BSBLED502A	* Manage programs that promote personal effectiveness
		BSBMGT502B	* Manage people performance
		BSBMGT515A	* Manage operational plan
		BSBRSK501B	* Manage risk
		BSBSLS502A	* Lead and manage a sales team
		BSBWOR501B	* Manage personal work priorities and professional development
		BSBWOR502B	* Ensure team effectiveness
		CPCCBC4024A	Resolve business disputes
		CPPDSM5022A	Implement asset management plan
IE1	Engineering Mathematics	MEM23007A	Apply calculus to engineering tasks
		MEM23008A	Apply advanced algebra and numerical methods to engineering tasks
		MEM23004A	Apply technical mathematics
		MEM23005A	Apply statistics and probability techniques to engineering tasks
		MEM12025A	Use graphical techniques and perform simple statistical computations
		MEM12024A	Perform computations
		MEM12025A	Use graphical techniques and perform simple statistical computations
IE2	Engineering Physics		
IE3	Material Science	MEM24001B	Perform basic penetrant testing
		MEM24003B	Perform basic magnetic particle testing
		MEM24005B	Perform basic eddy current testing
GE30	Bricklaying (CE)	MEM24007B	Perform ultrasonic thickness testing
GE31	Sprouting & Guttering (CE)	MEM24009B	Perform basic radiographic testing
IE5	Mechanical Science	MEM14001B	Schedule material deliveries
		MEM23063A	Select and test mechanical engineering materials

		MEM23138A	Evaluate suitability of materials for engineering-related applications
IE4	Advanced Engineering Mathematics		
IE6	Principle of Electricity	MEM23111A	Select electrical equipment and components for engineering applications
IE7	Electrical Circuit I (EE)	MEM30025A	Analyse a simple electrical system circuit
IE8	Electrical Circuit II (EE)		
IE9	Advanced Building Construction (CE)		
IE10	Transmission Line (EE)		
IE11	Electrical & Mechanical Engineering Work Experience		
IE12	Civil Engineering Work Experience		
IE13	Workshop	MEM18001C MEM23133A MEM23134A MEM23135A MEM23136A MEM23137A MEM30029A	Use hand tools Evaluate rapid tooling applications Evaluate jigs and fixtures Evaluate moulding tools and processes Evaluate stamping and forging tools Evaluate rolling tools and processes Use workshop equipment and processes to complete an engineering project
IE15	Advanced Engineering Design & Project Work	CPCCBC4003A	* Select and prepare a construction contract
		CPCCBC5010B	* Manage construction work
CE115	Estimating & Specification	CPCCBC4004A	* Identify and produce estimated costs for building and construction projects
		CPCCBC4013A	* Prepare and evaluate tender documentation
		CPCCBC4013A	* Prepare and evaluate tender documentation
		CPCCBC5002A	* Monitor costing systems on medium rise building and construction projects
		CPCCBC5003A	* Supervise the planning of on-site medium rise building or construction work
		CPCCBC4012B	Read and interpret plans and specifications
IE16	Power System Analysis-Fault Calculation		
IE17	Power Line Design		
IE18	Building services		
IE19	PCB Design		
IE20	Maths References		
IE21	Electrical Principle		
IE22	Co-generation		
IE23	Industrial Computer System	MSS402060A	Use planning software systems in operations
		MEM16008A	Interact with computing technology
IE24	Microprocessor	MEM23117A MEM23118A	Evaluate microcontroller applications Apply production and service control techniques
IE25	Power System Fundamental		
IE26	Electrical Communication Fundamental		
IE27	Control Concept		
IE28	Electronic Signal & System		
IE29	Electrical Estimating		
IE30	Electronic Workbench		
IE31	Introduction to Renewable Energy Technology	MSS405070A MSAENV472B	Develop and manage sustainable energy practices Implement and monitor environmentally sustainable work practices
		MSAENV272B	Participate in environmentally sustainable work practices
		CPCSUS5001A	Develop workplace policies and procedures for sustainability

IE32	Telecommunication Cabling & Installation		
IE33	Hybrid Energy System		
IE34	Electricity Supply Industrial Skills		
ME 101 ME 103	Applied Mathematics Engineering Mechanics	MEM30005A MEM30006A MEM23109A	Calculate force systems within simple beam structures Calculate stresses in simple structures Apply engineering mechanics principles
ME 102 ME 107	Engineering Thermodynamics Heat Transfer	MEM23006A	Apply fluid and thermodynamics principles in engineering
ME201 ME 204 ME 301	Introduction to Fluid Mechanics Engineering Fluid Mechanics Fluid Dynamics	MEM23113A MEM23114A MEM23115A MEM18053B	Evaluate hydrodynamic systems and system components Evaluate thermodynamic systems and components Evaluate fluid power systems Modify fluid power control systems
BAE312	Design Engineering (2 pt)	MEM14085A MEM14086A MEM14089A MEM14090A	Apply mechanical engineering analysis techniques Apply mechatronic engineering analysis techniques Integrate mechanical fundamentals into an engineering task Integrate mechatronic fundamentals into an engineering task
BAE612	**Engineering Metallurgy**	MEM15010B MEM24002B MEM24004B MEM24006B MEM24008B MEM24010B MEM24011B MEM24012C MSATCM304A MSATCM406A MSATCM501A MSATCM504A MSATCM511A MEM04020A MEM04021A MEM04022A MEM04023A	Perform laboratory procedures Perform penetrant testing Perform magnetic particle testing Perform eddy current testing Perform ultrasonic testing Perform radiographic testing Establish non-destructive tests Apply metallurgy principles Interpret basic binary phase diagrams Apply basic chemical principles to metallurgy Calculate and predict chemical outcomes in metallurgical situations Select metal forming process Apply metallurgy principles and practice to determine metal forming and shaping processes Supervise individual ferrous melting and casting operation Supervise individual non ferrous melting and casting operation Examine appropriateness of methoding for mould design Undertake prescribed tests on foundry related materials
ME 305	Corrosion Prevention	MSATCM517A	Determine corrosion prevention strategies for metal and alloys
BAE611	**Maintenance Engineering**	MEM14088A MEM14092A MEM23125A MSS404081A	Apply maintenance engineering techniques to equipment and component repairs and modifications Integrate maintenance fundamentals into an engineering task Evaluate maintenance systems Undertake proactive maintenance analyses

		MSS404082A MSS405081A MSS405083A	Assist in implementing a proactive maintenance strategy Develop a proactive maintenance strategy Adapt a proactive maintenance strategy for a seasonal or cyclical business
BAE311 BAE614	Plant Engineering (2 pt) **Machine Design**	MEM18016B MEM22007A MEM23120A	Analyse plant and equipment condition monitoring results Manage environmental effects of engineering activities Select mechanical machine and equipment components
GE27	Machine Principle(ME)	MEM23121A MEM23124A MEM10008B	Analyse loads on frames and mechanisms Measure and analyse noise and vibration Undertake commissioning procedures for plant and/or equipment
CE113	Structure 1	CPCCBC5018A	* Apply structural principles to the construction of medium rise buildings
CE114	Structure 2	CPCCBC4011B	Apply structural principles to commercial low rise constructions

GE36 RIGGING

Reference Notes Click HERE

Modules/Units	Name	Hrs	National Module(s)
CPCCCM1012A	Work effectively and sustainably in the construction industry	12	CPCCCM1012A
CPCCCM1013A	Plan and organise work	12	CPCCCM1013A
CPCCCM1014A	Conduct workplace communication	8	CPCCCM1014A
CPCCCM1015A	Carry out measurements and calculations	36	CPCCCM1015A
CPCCCM2001A	Read and interpret plans and specifications	16	CPCCCM2001A
CPCCCM2010B	Work safely at heights	16	CPCCCM2010B
CPCCCM3001C	Operate elevated work platforms	32	CPCCCM3001C
CPCCCM3003A	Work safely around power sources, services and assets	24	CPCCCM3003A
CPCCLRG3001A	Licence to perform rigging basic level	96	CPCCLRG3001A
CPCCLRG3002A	Licence to perform rigging intermediate level	24	CPCCLRG3002A
CPCCOHS2001A	Apply OHS requirements, policies and procedures in the construction industry	16	CPCCOHS2001A

Group CPC30711-01V03G02 GROUP 2 ELECTIVE UNITS LISTED IN CPC30711

Modules/Units	Name	Hrs	National Module(s)
BSBSMB301A	Investigate micro business opportunities	30	BSBSMB301A
BSBSMB406A	Manage small business finances	40	BSBSMB406A
CPCCCM2007B	Use explosive power tools	8	CPCCCM2007B
CPCCCM3002A	Operate a truck mounted loading crane	32	CPCCCM3002A
CPCCLDG3001A	Licence to perform dogging	80	CPCCLDG3001A
CPCCLHS3001A	Licence to operate a personnel and materials hoist	32	CPCCLHS3001A
CPCCLHS3002A	Licence to operate a materials hoist	24	CPCCLHS3002A
CPCCRI3001A	Operate personnel and materials hoists	16	CPCCRI3001A
CPCCRI3012A	Perform basic rigging	48	CPCCRI3012A
CPCCRI3013A	Perform intermediate rigging	60	CPCCRI3013A

CPCCRI3014A	Perform advanced structural steel erection	60	CPCCRI3014A
CPCCRI3015A	Perform advanced tilt-up slab erection	60	CPCCRI3015A
CPCCRI3016A	Perform advanced tower crane erection	60	CPCCRI3016A
CPCCSC2002A	Erect and dismantle basic scaffolding	32	CPCCSC2002A
CPCCSF2003A	Cut and bend materials using oxy-LPG equipment	18	CPCCSF2003A
RIIOHS302A	Implement traffic management plan	25	RIIOHS302A
TLILIC2001A	Licence to operate a forklift truck	40	TLILIC2001A

Group CPC30711-01V03G03 GROUP 3 UNITS FROM ANY CERT III OR CERT IV IN CPC08 OR ANY OTHER TP

Modules/Units	Name	Hrs	National Module(s)
CPCCDO3011A	Perform dogging	40	CPCCDO3011A
CPCCLRG4001A	Licence to perform rigging advanced level	24	CPCCLRG4001A
CPCCLSF2001A	Licence to erect, alter and dismantle scaffolding basic level	40	CPCCLSF2001A
TLILIC2005A	Licence to operate a boom-type elevating work platform (boom length 11 metres or more)	30	TLILIC2005A

Scaffolding

Reference Notes Click HERE

GE35	**SCAFFOLDING**	MEM11001C	Erect/dismantle scaffolding and equipment
		MEM11002C	Erect/dismantle complex scaffolding and equipment
		MEM11003B	Coordinate erection/dismantling of complex scaffolding/equipment
		MEM11004B	Undertake dogging

Modules/Units	Name	Hrs	National Module(s)
CPCCCM1012A	Work effectively and sustainably in the construction industry	12	CPCCCM1012A
CPCCCM1013A	Plan and organise work	12	CPCCCM1013A
CPCCCM1014A	Conduct workplace communication	8	CPCCCM1014A
CPCCCM1015A	Carry out measurements and calculations	36	CPCCCM1015A
CPCCCM2001A	Read and interpret plans and specifications	16	CPCCCM2001A
CPCCLSF2001A	Licence to erect, alter and dismantle scaffolding basic level	40	CPCCLSF2001A
CPCCLSF3001A	Licence to erect, alter and dismantle scaffolding intermediate level	40	CPCCLSF3001A
CPCCOHS2001A	Apply OHS requirements, policies and procedures in the construction industry	16	CPCCOHS2001A
CPCCSC2001A	Safely handle and use scaffolding tools and equipment	40	CPCCSC2001A

Group CPC30911-01V02G02 GROUP 2 ELECTIVE UNITS LISTED IN CPC30911

Modules/Units	Name	Hrs	National Module(s)
BSBSMB301A	Investigate micro business opportunities	30	BSBSMB301A
BSBSMB406A	Manage small business finances	40	BSBSMB406A
CPCCCM2007B	Use explosive power tools	8	CPCCCM2007B
CPCCCM2010B	Work safely at heights	16	CPCCCM2010B

CPCCCM3001C	Operate elevated work platforms	32	CPCCCM3001C
CPCCCM3002A	Operate a truck mounted loading crane	32	CPCCCM3002A
CPCCLDG3001A	Licence to perform dogging	80	CPCCLDG3001A
CPCCRI3001A	Operate personnel and materials hoists	16	CPCCRI3001A
CPCCSC2002A	Erect and dismantle basic scaffolding	32	CPCCSC2002A
CPCCSC3001A	Erect and dismantle intermediate scaffolding	48	CPCCSC3001A
CPCCSF2003A	Cut and bend materials using oxy-LPG equipment	18	CPCCSF2003A
RIIOHS302A	Implement traffic management plan	25	RIIOHS302A
TLILIC2001A	Licence to operate a forklift truck	40	TLILIC2001A

Group CPC30911-01V02G03 GROUP 3 UNITS FROM ANY CERT III OR CERT IV IN CPC08 OR ANY OTHER TP

Modules/Units	Name	Hrs	National Module(s)
BSBADM307B	Organise schedules	15	BSBADM307B
CPCCLRG3001A	Licence to perform rigging basic level	96	CPCCLRG3001A
CPCCLSF4001A	Licence to erect, alter and dismantle scaffolding advanced level	40	CPCCLSF4001A
FSKNUM14	Calculate with whole numbers and familiar fractions, decimals and percentages for work	30	FSKNUM14
FSKNUM15	Estimate, measure and calculate with routine metric measurements for work	30	FSKNUM15
TLILIC2005A	Licence to operate a boom-type elevating work platform (boom length 11 metres or more)	30	TLILIC2005A

Advanced Diploma of Engineering –Mechanical

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HYDRAULICS

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http://www.highlightcomputer.com/MechanicalDegreeInstruction.pdf

http://www.highlightcomputer.com/MechanicalDiplomaInstruction.pdf

Written Lessons References+ Text Books

http://www.filefactory.com/file/720e13y9btpb/B%20App%20Eng%20%28Mechtronics%29%2CDip%20%26amp%3B%20Adv%20Dip%20Mech%20Engg%20Study%20Guide%20.pd

Advanced Diploma of Engineering –Mechanical

	GE+IE UNITS	TRAINING PACKAGE UNITS	
GE1	Electrical Wiring (EE)	MEM18049C	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.
		MEM18050C	Disconnect/reconnect fixed wired equipment over 1000 volts a.c./1500 volts d.c.
		MEM18051B	Fault find and repair/rectify complex electrical circuits
		MEM18070C	Modify complex electrical circuits and systems
		MEM18073A	Perform advanced equipment testing and diagnostics on mobile plant and equipment
		MEM30025A	Analyse a simple electrical system circuit
		MEM03004B	Perform electronic/electrical assembly (production)
		MEM03005B	Rework and repair (electrical/electronic production)
		MEM10001C	Erect structures
		MEM10011B	Terminate and connect specialist cables
		MEM18045B	Fault find/repair electrical equipment/components up to 250 volts single phase supply
		MEM18046B	Fault find/repair electrical equipment/components up to 1000 volts a.c./1500 volts d.c.
GE2	Electrical Machine (EE)		
GE3	Electrical Distribution (EE)		
GE4	Power System Operation (EE)		
GE5	Power System Protection		
GE6	Occupational Health & Safety	MEM30008A	Apply basic economic and ergonomic concepts to evaluate engineering applications
		BSBWHS506A	Contribute to developing, implementing and maintaining WHS management systems
		MEM13002B	Undertake occupational health and safety activities in the workplace
		MSS403032A	Analyse manual handling processes
		MEM13010A	Supervise occupational health and safety in an industrial work environment.
GE7	Project Management (EE/CE/ME)	MEM22012A	Coordinate resources for an engineering project or operation
		MEM22013A	Coordinate engineering projects
GE8	Electronics (EE)	MEM18056B	Diagnose and repair analog equipment and components
		MEM18058C	Modify electronic equipment
		MEM18059B	Modify electronic systems
		MSATCM304A	Interpret basic binary phase diagrams
GE9	Process Control (EE/ME)	MEM18054B	Fault find, test and calibrate instrumentation systems and equipment
		MEM23112A	Investigate electrical and electronic controllers in engineering applications
		MEM18060B	Maintain, repair control instrumentation - single and multiple loop control systems
		MEM18061B	Maintain/calibrate complex control systems
		MEM18062B	Install, maintain and calibrate instrumentation sensors, transmitters and final control elements
		MEM18057B	Maintain/service analog/digital electronic equipment
		MEM18063B	Terminate signal and data cables
GE10	Industrial Electronics (EE)	MEM30026A	Select and test components for simple electronic switching and timing circuits
		MEM18047B	Diagnose and maintain electronic controlling systems on mobile plant
		MEM18048B	Fault find and repair/rectify basic electrical circuits
GE11	Programmable Logic Controller (EE/ME)	MEM23003A	Operate and program computers and/or controllers in engineering situations
		MEM30027A	Prepare basic programs for programmable logic controllers
		MEM23116A	Evaluate programmable logic controller and related control system component applications
		MSS402061A	Use SCADA systems in operations
		MSS404061A	Facilitate the use of SCADA systems in a team or work area

		MEM10004B	Enter and change programmable controller operational parameters
		MEM10005B	Commission programmable controller programs
GE12	Photovoltaic Solar Electrical System		
GE13	Principle of Engine(ME)	MEM18001C	Use hand tools
		MEM18002B	Use power tools/hand held operations
		MEM18003C	Use tools for precision work
		MEM18004B	Maintain and overhaul mechanical equipment
		MEM18005B	Perform fault diagnosis, installation and removal of bearings
		MEM18006C	Repair and fit engineering components
		MEM18007B	Maintain and repair mechanical drives and mechanical transmission assemblies
		MEM18008B	Balance equipment
		MEM18009B	Perform levelling and alignment of machines and engineering components
		MEM18012B	Perform installation and removal of mechanical seals
		MEM18013B	Perform gland packing
		MEM18014B	Manufacture press tools and gauges
		MEM18015B	Maintain tools and dies
		MEM18018C	Maintain pneumatic system components
		MEM18020B	Maintain hydraulic system components
		MEM18024B	Maintain engine cooling systems
		MEM18025B	Service combustion engines
		MEM18026C	Test compression ignition fuel systems
		MEM18027C	Overhaul engine fuel system components
		MEM18028B	Maintain engine lubrication systems
		MEM18029B	Tune diesel engines
		MEM18030B	Diagnose and rectify low voltage electrical systems
		MEM18031B	Diagnose and rectify low voltage starting systems
		MEM18032B	Maintain induction/exhaust systems
		MEM18033B	Perform engine bottom-end overhaul
		MEM18034B	Perform engine top-end overhaul
		MEM18035B	Diagnose and rectify braking systems
		MEM18037B	Diagnose and rectify low voltage charging systems
		MEM18038B	Maintain wheels and tyres
		MEM18039B	Diagnose and rectify track type undercarriage
		MEM18040B	Maintain suspension systems
		MEM18041B	Maintain steering systems
		MEM18042C	Diagnose and rectify manual transmissions
		MEM18043C	Diagnose and rectify automatic transmissions
		MEM18044C	Diagnose and rectify drive line and final drives
		MEM18001C	Use hand tools
		MEM18002B	Use power tools/hand held operations
		MEM18003C	Use tools for precision work
		MEM18004B	Maintain and overhaul mechanical equipment
		MEM18005B	Perform fault diagnosis, installation and removal of bearings
		MEM18006C	Repair and fit engineering components
GE14	Fitting & Machining (ME)	MEM14005A	Plan a complete activity
		MEM15004B	Perform inspection
		MEM15005B	Select and control inspection processes and procedures
		MEM16010A	Write reports
		MEM18002B	Use power tools/hand held operations
		MEM18003C	Use tools for precision work
		MEM18006C	Repair and fit engineering components
		MEM18010C	Perform equipment condition monitoring and recording
		MEM18055B	Dismantle, replace and assemble engineering components
		MEM12003B	Perform precision mechanical measurement
		MEM12023A	Perform engineering measurements
		MEM12005B	Calibrate measuring equipment
		MEM12022B	Program coordinate measuring machines (advanced)
		MEM03001B	Perform manual production assembly
		MEM03002B	Perform precision assembly
		MEM03003B	Perform sheet and plate assembly
		MEM03006B	Set assembly stations
		MEM12001B	Use comparison and basic measuring devices
		MEM12002B	Perform electrical/electronic measurement
		MEM12006C	Mark off/out (general engineering)
		MEM12007D	Mark off/out structural fabrications and shapes

		MEM12019B	Measure components using coordinate measuring machines
		MEM12020B	Set and operate coordinate measuring machines
		MEM12021B	Program coordinate measuring machines
		MEM12022B	Program coordinate measuring machines (advanced)
		MEM12001B	Use comparison and basic measuring devices
		MEM18055B	Dismantle, replace and assemble engineering components
GE15	Building Construction (CE)	CPCCBC4007A	Plan building or construction work
		CPCCBC4012B	Read and interpret plans and specifications
		CPCCBC4014A	Prepare simple building sketches and drawings
		CPCCBC4018A	Apply site surveys and set-out procedures to building and construction projects
		CPCPDR4011B	Design and size sanitary drainage systems
		CPCPDR4012B	Design and size stormwater drainage systems
		CPCPFS4024A	Design residential and domestic fire sprinkler systems
		ICTCBL2136A	Install, maintain and modify customer premises communications cabling: ACMA Restricted Rule
		PMBFIN203C	Repair product imperfections
		PMBPROD247C	Hand lay up composites
		PMBTECH405B	Repair damaged fibre-composites structures
GE16	Engineering Drawing I (EE/CE/ME)	MEM30031A	Operate computer-aided design (CAD) system to produce basic drawing elements
		MEM30032A	Produce basic engineering drawings
		MEM30033A	Use computer-aided design (CAD) to create and display 3-D models
		MEM09153A	Apply CAD modelling and data management techniques to aeronautical engineering designs
		MEM09155A	Prepare mechanical models for computer-aided engineering (CAE)
		MEM09156A	Prepare mechatronic models for computer-aided engineering (CAE)
		MEM09157A	Perform mechanical engineering design drafting
		MEM09158A	Perform mechatronics engineering design drafting
		MEM09204A	Produce basic engineering detail drawings
		MEM09205A	Produce electrical schematic drawings
		MEM09002B	Interpret technical drawing
		MEM09002B	Interpret technical drawing
		MEM09003B	Prepare basic engineering drawing
		MEM09005B	Perform basic engineering detail drafting
		MEM09011B	Apply basic engineering design concepts
		MEM09021B	Interpret and produce curved 3-dimensional shapes
		MEM09022A	Create 2D code files using computer aided manufacturing system
GE17	Pipe Fitting (CE/ME)	MEM10010B	Install pipework and pipework assemblies
GE18	Air-conditioning & Refrigeration (ME)	MEM23144A	Contribute to the design of a commercial refrigeration system
		MEM23146A	Contribute to the design of industrial refrigeration systems
		MEM23147A	Contribute to the design of hydronic systems
		MEM23149A	Contribute to the design of commercial and industrial exhaust systems
		MEM23150A	Contribute to the design of heating systems
		MEM23153A	Contribute to the design of heat exchanger systems
		MEM23140A	Determine operational parameters for building HVAC hydronic systems
		MEM23142A	Determine psychrometric processes and system performance
		MEM23129A	Evaluate thermal loads for heating, ventilation, air conditioning and refrigeration
		MEM23130A	Coordinate servicing and fault-finding of HVACR control systems
		MEM18091B	Maintain and repair multi stage, cascade and/or ultra-cold industrial refrigeration systems
		MEM18092B	Maintain and repair commercial and/or industrial refrigeration and/or air conditioning controls
		MEM18093B	Maintain and repair integrated industrial refrigeration and/or large air handling system controls
		MEM10009B	Install refrigeration and air conditioning plant and equipment
		MEM10013A	Install split air conditioning systems and associated pipework
		MEM18084A	Commission and decommission split air conditioning systems
		MEM18085A	Install, service and repair domestic air conditioning and refrigeration appliances
		MEM18086B	Test, recover, evacuate and charge refrigeration systems
		MEM18087B	Service and repair domestic and light commercial refrigeration and air conditioning equipment
		MEM18088B	Maintain and repair commercial air conditioning systems and components
		MEM18089B	Maintain and repair central air handling systems

		MEM18090B	Maintain and repair industrial refrigeration systems and components
		MEM18094B	Service and repair commercial refrigeration
		MEM18095A	Maintain and repair cooling towers/evaporative condensers and associated equipment
		MEM18096A	Maintain, repair/replace and adjust refrigerant flow controls and associated equipment
		MEM18084A	Commission and decommission split air conditioning systems
GE19	Computer Programming (EE/CE/ME)		
GE20	Computer Networking (EE)		
GE21	Welding (ME)	MEM05024B	Perform welding supervision
		MEM05025C	Perform welding/fabrication inspection
		MEM05026C	Apply welding principles
		MEM05042B	Perform welds to code standards using flux core arc welding process
		MEM05043B	Perform welds to code standards using gas metal arc welding process
		MEM05044B	Perform welds to code standards using gas tungsten arc welding process
		MEM05045B	Perform pipe welds to code standards using manual metal arc welding process
		MEM05046B	Perform welds to code standards using manual metal arc welding process
		MEM05024B	Perform welding supervision
		MEM05001B	Perform manual soldering/desoldering - electrical/electronic components
		MEM05002B	Perform high reliability soldering and desoldering
		MEM05003B	Perform soft soldering
		MEM05004C	Perform routine oxy acetylene welding
		MEM05005B	Carry out mechanical cutting
		MEM05006C	Perform brazing and or silver soldering
		MEM05007C	Perform manual heating and thermal cutting
		MEM05008C	Perform advanced manual thermal cutting, gouging and shaping
		MEM05009C	Perform automated thermal cutting
		MEM05010C	Apply fabrication, forming and shaping techniques
		MEM05011D	Assemble fabricated components
		MEM05012C	Perform routine manual metal arc welding
		MEM05013C	Perform manual production welding
		MEM05014C	Monitor quality of production welding/fabrications
		MEM05015D	Weld using manual metal arc welding process
		MEM05016C	Perform advanced welding using manual metal arc welding process
		MEM05017D	Weld using gas metal arc welding process
		MEM05018C	Perform advanced welding using gas metal arc welding process
		MEM05019D	Weld using gas tungsten arc welding process
		MEM05020C	Perform advanced welding using gas tungsten arc welding process
		MEM05022C	Perform advanced welding using oxy acetylene welding process
		MEM05023C	Weld using submerged arc welding process
		MEM05036C	Repair/replace/modify fabrications
		MEM05037C	Perform geometric development
		MEM05001B	Perform manual soldering/desoldering - electrical/electronic components
		MEM05002B	Perform high reliability soldering and desoldering
		MEM05038B	Perform advanced geometric development - cylindrical/rectangular
		MEM05039B	Perform advanced geometric development - conical
		MEM05040B	Perform advanced geometric development - transitions
		MEM05041B	Weld using powder flame spraying
		MEM05047B	Weld using flux core arc welding process
		MEM05048B	Perform advanced welding using flux core arc welding process
		MEM05049B	Perform routine gas tungsten arc welding
		MEM05050B	Perform routine gas metal arc welding
		MEM05051A	Select welding processes
GE22	Painting & Decoration (CE)		
GE23	Pnuematics (CE/ME)	MEM30011A	Set up basic pneumatic circuits
		MEM18019B	Maintain pneumatic systems
GE24	Manufacturing Management (ME)	MEM14002B	Undertake basic process planning

		MSS405075A	Facilitate the development of a new product
ME 205	Manufacturing Processes-and-Materials	MEM14003B	Undertake basic production scheduling
Mgt 503	Production & Operation Management	MEM14087A	Apply manufactured product design techniques
Mgt 505	Quality Management and Manufacturing Engineering	MEM15007B	Conduct product and/or process capability studies
		MEM15008B	Perform advanced statistical quality control
		MEM14091A	Integrate manufacturing fundamentals into an engineering task
		MEM15011B	Exercise external quality assurance
		MEM15012B	Maintain/supervise the application of quality procedures
		MEM22014A	Coordinate engineering-related manufacturing operations
		MEM22015A	Source and estimate engineering materials requirements
		MEM22017A	Coordinate continuous improvement and technical development
		MEM22018A	Coordinate sales and promotion of engineering-related products or services
		MEM30013A	Assist in the preparation of a basic workplace layout
		MEM30014A	Apply basic just in time systems to the reduction of waste
		MEM30015A	Develop recommendations for basic set up time improvements
		MEM30016A	Assist in the analysis of a supply chain
		MEM30017A	Use basic preventative maintenance techniques and tools
		MEM30018A	Undertake basic process planning
		MEM30019A	Use resource planning software systems in manufacturing
		MEM30020A	Develop and manage a plan for a simple manufacturing related project
		MEM30021A	Prepare a simple production schedule
		MEM30022A	Undertake supervised procurement activities
		MEM30023A	Prepare a simple cost estimate for a manufactured product
		MEM30024A	Participate in quality assurance techniques
		MEM15001B	Perform basic statistical quality control
		MEM23123A	Evaluate manufacturing processes
		MEM23131A	Evaluate rapid prototyping applications
		MEM23132A	Evaluate rapid manufacturing processes
		MEM14001B	Schedule material deliveries
		MEM14002B	Undertake basic process planning
		MEM14003B	Undertake basic production scheduling
		MEM15001B	Perform basic statistical quality control
		MEM15003B	Use improvement processes in team activities
		MEM15004B	Perform inspection
		MEM15005B	Select and control inspection processes and procedures
ME 303	Computer Aided Design and Manufacturing	MEM30009A	Contribute to the design of basic mechanical systems
ME 534	Numerical Control	MEM23122A	Evaluate computer integrated manufacturing systems
		MEM05053A	Set and edit computer controlled thermal cutting machines
		MEM05054A	Write basic NC/CNC programs for thermal cutting machines
		MEM07016C	Set and edit computer controlled machines/processes
		MEM07018C	Write basic NC/CNC programs
		MEM07019C	Program NC/CNC machining centre
		MEM07020C	Program multiple spindle and/or multiple axis NC/CNC machining centre
		MEM07022C	Program CNC wire cut machines
		MEM07023C	Program and set up CNC manufacturing cell
		MEM07039A	Write programs for industrial robots
ME 434	Mechtronics-Robotics	MEM23126A	Evaluate industrial robotic applications
		MEM23064A	Select and test mechatronic engineering materials
GE25	Surveying (CE)		
GE26	Energy Efficient Building Design	MEM23141A	Complete a building thermal performance survey
GE28	Hydraulic (CE/ME)	MEM30010A	Set up basic hydraulic circuits
		MEM18021B	Maintain hydraulic systems
		MEM18022B	Maintain fluid power controls
		MEM18023B	Modify fluid power system operation
		MEM18052B	Maintain fluid power systems for mobile plant
		MEM18071B	Connect/disconnect fluid conveying system components
		MEM18072B	Manufacture fluid conveying conductor assemblies
GE29	Materials & Corrosion Prevention (CE/ME)	MEM30007A	Select common engineering materials
GE30	Bricklaying (CE)		
GE31	Sprouting & Guttering (CE)		
GE32	Electronic Security Installation	MEM20008A	Develop and implement a masterkey system
		MEM20011A	Service and repair fire and security containers
		MEM20012A	Service and repair mechanical automotive locking systems
		MEM20013A	Service automotive transponder systems
		PRSTS202A	Install security equipment/system

		PRSTS302A	Program security equipment/system
		PRSTS303A	Test installed security equipment/system
		PRSTS304A	Commission/decommission security equipment/system
		PRSTS305A	Identify and diagnose electronic security equipment/system fault
		PRSTS307A	Maintain and service security equipment/system
GE33	Explosion Protection	MEM13001B	Perform emergency first aid
		MEM13002B	Undertake occupational health and safety activities in the workplace
		MEM13003B	Work safely with industrial chemicals and materials
		MEM13004B	Work safely with molten metals/glass
		MEM13006B	Collect and evaluate occupational health and safety data for an enterprise or section of an enterpri
		MEM13007B	Maintain water treatment systems for cooling towers
		MEM13010A	Supervise occupational health and safety in an industrial work environment.
		MEM13013B	Work safely with ionizing radiation
GE34	Engineering Business Management	MSAENV672B	Develop workplace policy and procedures for sustainability
		MSS402030A	Apply cost factors to work practices
		MSS403001A	Implement competitive systems and practices
		MSS403002A	Ensure process improvements are sustained
		MSS403010A	Facilitate change in an organisation implementing competitive systems and practices
		MSS403021A	Facilitate a Just in Time system
		MSS403023A	Monitor a levelled pull system of operations
		MSS403030A	Improve cost factors in work practices
		MSS403040A	Facilitate and improve implementation of 5S
		MSS403051A	Mistake proof an operational process
		MSS404050A	Undertake process capability improvements
		MSS404052A	Apply statistics to operational processes
		MSS404060A	Facilitate the use of planning software systems in a work area or team
		MSS405001A	Develop competitive systems and practices for an organisation
		MSS405002A	Analyse and map a value stream
		MSS405003A	Manage a value stream
		MSS405004A	Develop business plans in an organisation implementing competitive systems and practices
		MSS405005A	Manage competitive systems and practices responding to individual and unique customer orders
		MSS405010A	Manage relationships with non-customer external organisations
		MSS405011A	Manage people relationships
		MSS405012A	Manage workplace learning
		MSS405020A	Develop quick changeover procedures
		MSS405021A	Develop a Just in Time system
		MSS405022A	Design a process layout
		MSS405023A	Develop a levelled pull system for operations and processes
		MSS405030A	Optimise cost of a product or service
		MSS405031A	Undertake value analysis of product or process costs in terms of customer requirements
		MSS405040A	Manage 5S system in an organisation
		MSS405050A	Determine and improve process capability
		MSS405052A	Design an experiment
		MSS405060A	Develop the application of enterprise control systems in an organisation
		MSS405061A	Determine and establish information collection requirements and processes
		MEM23119A	Evaluate continuous improvement processes
		MEM30028A	Assist in sales of technical products/systems
		MEM14001B	Schedule material deliveries
		MEM14002B	Undertake basic process planning
		MEM14003B	Undertake basic production scheduling
		MEM14001B	Schedule material deliveries
		MEM14002B	Undertake basic process planning
		MEM14003B	Undertake basic production scheduling
		MEM14001B	Schedule material deliveries
		MEM14002B	Undertake basic process planning
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		MEM14003B	Undertake basic production scheduling

		MEM14001B	Schedule material deliveries
		MEM14002B	Undertake basic process planning
		MEM14003B	Undertake basic production scheduling
		MEM14001B	Schedule material deliveries
		MEM14002B	Undertake basic process planning
		MEM17001B	Assist in development and deliver training in the workplace
		MEM17002B	Conduct workplace assessment
		MEM14005A	Plan a complete activity
		MEM15002A	Apply quality systems
		MEM16006A	Organise and communicate information
		MEM16002C	Conduct formal interviews and negotiations
		MEM16004B	Perform internal/external customer service
		MEM16005A	Operate as a team member to conduct manufacturing, engineering or related activities
		MEM17003A	Assist in the provision of on the job training
		BSBSMB404A	* Undertake small business planning
		BSBSMB406A	Manage small business finances
		MSS403001A	Implement competitive systems and practices
		MSS403002A	Ensure process improvements are sustained
		MSS403010A	Facilitate change in an organisation implementing competitive systems and practices
		MSS403021A	Facilitate a Just in Time system
		MSS403030A	Improve cost factors in work practices
IE1	Engineering Mathematics	MEM23007A	Apply calculus to engineering tasks
		MEM23008A	Apply advanced algebra and numerical methods to engineering tasks
		MEM23004A	Apply technical mathematics
		MEM23005A	Apply statistics and probability techniques to engineering tasks
		MEM12025A	Use graphical techniques and perform simple statistical computations
		MEM12024A	Perform computations
		MEM12024A	Perform computations
		MEM12025A	Use graphical techniques and perform simple statistical computations
		MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment
IE2	Engineering Physics		
IE3	Material Science	MEM24001B	Perform basic penetrant testing
		MEM24003B	Perform basic magnetic particle testing
		MEM24005B	Perform basic eddy current testing
		MEM24007B	Perform ultrasonic thickness testing
		MEM24009B	Perform basic radiographic testing
		MEM14001B	Schedule material deliveries
		MEM23063A	Select and test mechanical engineering materials
		MEM23138A	Evaluate suitability of materials for engineering-related applications
IE4	Advanced Engineering Mathematics		
IE5	Mechanical Science		
IE6	Principle of Electricity	MEM23111A	Select electrical equipment and components for engineering applications
IE7	Electrical Circuit I (EE)	MEM30025A	Analyse a simple electrical system circuit
IE8	Electrical Circuit II (EE)		
IE9	Advanced Building Construction (CE)		
IE10	Transmission Line (EE)		
IE11	Electrical & Mechanical Engineering Work Experience		
IE12	Civil Engineering Work Experience		
IE13	Workshop	MEM18001C	Use hand tools
		MEM23133A	Evaluate rapid tooling applications
		MEM23134A	Evaluate jigs and fixtures
		MEM23135A	Evaluate moulding tools and processes
		MEM23136A	Evaluate stamping and forging tools
		MEM23137A	Evaluate rolling tools and processes
		MEM30029A	Use workshop equipment and processes to complete an engineering project
IE15	Advanced Engineering Design & Project Work		
IE16	Power System Analysis-Fault Calculation		
IE17	Power Line Design		
IE18	Building services		
IE19	PCB Design		
IE20	Maths References		
IE21	Electrical Principle		
IE22	Co-generation		
IE23	Industrial Computer System	MSS402060A	Use planning software systems in operations

		MEM16008A	Interact with computing technology
IE24	Microprocessor	MEM23117A	Evaluate microcontroller applications
		MEM23118A	Apply production and service control techniques
		MEM18065B	Diagnose and repair digital equipment and components
		MEM18066B	Diagnose and repair microprocessor-based equipment
		MEM18067B	Tune control loops - multi controller or multi element systems
IE25	Power System Fundamental		
IE26	Electrical Communication Fundamental		
IE27	Control Concept	MEM18069B	Maintain, repair instrumentation process control analysers
IE28	Electronic Signal & System		
IE29	Electrical Estimating		
IE30	Electronic Workbench		
IE31	Introduction to Renewable Energy Technology	MSS405070A	Develop and manage sustainable energy practices
		MSAENV472B	Implement and monitor environmentally sustainable work practices
		MSAENV272B	Participate in environmentally sustainable work practices
IE32	Telecommunication Cabling & Installation	ICTCBL2136A	Install, maintain and modify customer premises communications cabling: ACMA Restricted Rule
IE33	Hybrid Energy System		
IE34	Electricity Supply Industrial Skills		
ME 101	Applied Mathematics	MEM30005A	Calculate force systems within simple beam structures
ME 103	Engineering Mechanics	MEM30006A	Calculate stresses in simple structures
		MEM23109A	Apply engineering mechanics principles
ME 102	Engineering Thermodynamics	MEM23006A	Apply fluid and thermodynamics principles in engineering
ME 107	Heat Transfer		
ME201	Introduction to Fluid Mechanics	MEM23113A	Evaluate hydrodynamic systems and system components
ME 204	Engineering Fluid Mechanics	MEM23114A	Evaluate thermodynamic systems and components
ME 301	Fluid Dynamics		
		MEM23115A	Evaluate fluid power systems
		MEM18053B	Modify fluid power control systems
BAE312	Design Engineering (2 pt)	MEM14085A	Apply mechanical engineering analysis techniques
		MEM14086A	Apply mechatronic engineering analysis techniques
		MEM14089A	Integrate mechanical fundamentals into an engineering task
		MEM14090A	Integrate mechatronic fundamentals into an engineering task
BAE612	**Engineering Metallurgy**	MEM15010B	Perform laboratory procedures
		MEM24002B	Perform penetrant testing
		MEM24004B	Perform magnetic particle testing
		MEM24006B	Perform eddy current testing
		MEM24008B	Perform ultrasonic testing
		MEM24010B	Perform radiographic testing
		MEM24011B	Establish non-destructive tests
		MEM24012C	Apply metallurgy principles
		MSATCM304A	Interpret basic binary phase diagrams
		MSATCM406A	Apply basic chemical principles to metallurgy
		MSATCM501A	Calculate and predict chemical outcomes in metallurgical situations
		MSATCM504A	Select metal forming process
		MSATCM511A	Apply metallurgy principles and practice to determine metal forming and shaping processes
		MEM04020A	Supervise individual ferrous melting and casting operation
		MEM04021A	Supervise individual non ferrous melting and casting operation
		MEM04022A	Examine appropriateness of methoding for mould design
		MEM04023A	Undertake prescribed tests on foundry related materials
		MEM21018A	Service clock escapements and oscillating systems
		MEM21019A	Service and repair clock striking mechanisms
		MEM21020A	Service and repair clock chiming mechanisms

		MEM21021A	Restore clockwork mechanisms
		MEM21022A	Manufacture watch and clock components
		MEM21023A	Plan, set up and operate horological workshop or service centre
		MEM21018A	Service clock escapements and oscillating systems
ME 305	Corrosion Prevention	MSATCM517A	Determine corrosion prevention strategies for metal and alloys
BAE611	**Maintenance Engineering**	MEM14088A	Apply maintenance engineering techniques to equipment and component repairs and modifications
		MEM14092A	Integrate maintenance fundamentals into an engineering task
		MEM23125A	Evaluate maintenance systems
		MSS404081A	Undertake proactive maintenance analyses
		MSS404082A	Assist in implementing a proactive maintenance strategy
		MSS405081A	Develop a proactive maintenance strategy
		MSS405083A	Adapt a proactive maintenance strategy for a seasonal or cyclical business
		MEM18010C	Perform equipment condition monitoring and recording
		MEM18011C	Shut down and isolate machines/equipment
		MEM18016B	Analyse plant and equipment condition monitoring results
		MEM18017C	Modify mechanical systems and equipment
BAE311	Plant Engineering (2 pt)	MEM18016B	Analyse plant and equipment condition monitoring results
		MEM22007A	Manage environmental effects of engineering activities
BAE614	**Machine Design**	MEM23120A	Select mechanical machine and equipment components
GE27	Machine Principle(ME)	MEM23121A	Analyse loads on frames and mechanisms
		MEM23124A	Measure and analyse noise and vibration
		MEM10008B	Undertake commissioning procedures for plant and/or equipment
		MEM10006B	Install machine/plant
ME 208	Hydrocarbons	MEM18098A	Prepare to perform work associated with fuel system installation and servicing
	CLOCK	MEM21018A	Service clock escapements and oscillating systems
		MEM21019A	Service and repair clock striking mechanisms
		MEM21020A	Service and repair clock chiming mechanisms
		MEM21021A	Restore clockwork mechanisms
		MEM21022A	Manufacture watch and clock components
		MEM21023A	Plan, set up and operate horological workshop or service centre
BAE513	**Production Technology**	MEM04001B	Operate melting furnaces
BAE614	**Machine Design**	MEM04002B	Perform gravity die casting
GE14	Fitting & Machining (ME)(II)	MEM04003B	Operate pressure die casting machine
ME 104	Machine Principle	MEM04004B	Prepare and mix sand for metal moulding
ME 209	Introduction-to-polymer-science-and-technology	MEM04005C	Produce moulds and cores by hand (jobbing)
ME 205	Manufacturing Processes-and-Materials	MEM04006B	Operate sand moulding and core making machines
BAE612	**Engineering Metallurgy**	MEM04007B	Pour molten metal
		MEM04008B	Fettle and trim metal castings/forgings
		MEM04010B	Develop and manufacture wood patterns
		MEM04011B	Produce polymer patterns
		MEM04012B	Assemble plated patterns
		MEM04013B	Develop and manufacture polystyrene patterns
		MEM04014B	Develop and manufacture production patterns
		MEM04015B	Develop and manufacture vacuum forming moulds and associated equipment
		MEM04016C	Develop and manufacture precision models
		MEM04017B	Develop and manufacture gear, conveyor screw and propeller patterns
		MEM04018B	Perform general woodworking machine operations
		MEM04019B	Perform refractory installation and repair
		MEM06001B	Perform hand forging
		MEM06002B	Perform hammer forging
		MEM06003C	Carry out heat treatment
		MEM06004B	Select heat treatment processes and test finished product
		MEM06005B	Perform drop and upset forging
		MEM06006C	Repair springs

		MEM06007B	Perform basic incidental heat/quenching, tempering and annealing
		MEM06008A	Hammer forge complex shapes
		MEM06009A	Hand forge complex shapes
		MEM07001B	Perform operational maintenance of machines/equipment
		MEM07002B	Perform precision shaping/planing/slotting operations
		MEM07003B	Perform machine setting (routine)
		MEM07004B	Perform machine setting (complex)
		MEM07005C	Perform general machining
		MEM07006C	Perform lathe operations
		MEM07007C	Perform milling operations
		MEM07008D	Perform grinding operations
		MEM07009B	Perform precision jig boring operations
		MEM07010B	Perform tool and cutter grinding operations
		MEM07011B	Perform complex milling operations
		MEM07012B	Perform complex grinding operations
		MEM07013B	Perform machining operations using horizontal and/or vertical boring machines
		MEM07014B	Perform electro-discharge (EDM) machining operations
		MEM07015B	Set computer controlled machines/processes
		MEM07021B	Perform complex lathe operations
		MEM07024B	Operate and monitor machine/process
		MEM07025B	Perform advanced machine/process operation
		MEM07026B	Perform advanced plastic processing
		MEM07027B	Perform advanced press operations
		MEM07028B	Operate computer controlled machines/processes
		MEM07029B	Perform routine sharpening/maintenance of production tools and cutters
		MEM07030C	Perform metal spinning lathe operations (basic)
		MEM07031C	Perform metal spinning lathe operations (complex)
		MEM07032B	Use workshop machines for basic operations
		MEM07033B	Operate and monitor basic boiler
		MEM07034A	Operate and monitor intermediate class boiler
		MEM07040A	Set multistage integrated processes
		MEM18097A	Manufacture cavity dies
		MEM24001B	Perform basic penetrant testing
		MEM24003B	Perform basic magnetic particle testing
		MEM24005B	Perform basic eddy current testing
		MEM24007B	Perform ultrasonic thickness testing
		MEM24009B	Perform basic radiographic testing
		PMBPROD291B	Operate resin infusion moulding equipment
		PMBPROD294B	Operate resin transfer moulding equipment
		PMBPROD298B	Operate equipment using pre-preg material
		PMBPROD391B	Produce composites using resin infusion
		PMBPROD394B	Produce composites using resin transfer moulding
GE35	**SCAFFOLDING**	MEM11001C	Erect/dismantle scaffolding and equipment
		MEM11002C	Erect/dismantle complex scaffolding and equipment
		MEM11003B	Coordinate erection/dismantling of complex scaffolding/equipment
		MEM11004B	Undertake dogging
GE36	**INVENTORY MANAGEMENT/ STORE OPERATION & STOCK CONTROL** **MATERIALS HANDLING**	MEM11005B	Pick and process order
		MEM11006B	Perform production packaging
		MEM11007B	Administer inventory procedures
		MEM11008B	Package materials (stores and warehouse)
		MEM11009B	Handle/move bulk fluids/gases
		MEM11010B	Operate mobile load shifting equipment
		MEM11011B	Undertake manual handling
		MEM11012B	Purchase materials
		MEM11013B	Undertake warehouse receival process
		MEM11014B	Undertake warehouse dispatch process
		MEM11015B	Manage warehouse inventory system
		MEM11016B	Order materials
		MEM11017B	Organise and lead stocktakes

		MEM11018B	Organise and maintain warehouse stock receival and/or dispatch system
		MEM11019B	Undertake tool store procedures
		MEM11020B	Perform advanced warehouse computer operations
		MEM11021B	Perform advanced operation of load shifting equipment
		MEM11022B	Operate fixed/moveable load shifting equipment
		MEM11008B	Package materials (stores and warehouse)

JEWELLERY MAKING

MEM19001B	Perform jewellery metal casting
MEM19002B	Prepare jewellery illustrations
MEM19003B	Handle gem materials
MEM19004B	Handle and examine gemstone materials
MEM19005B	* Produce three-dimensional precision items
MEM19006B	Replace watch batteries
MEM19007B	Perform gemstone setting
MEM19009B	Perform investment procedures for lost wax casting process
MEM19010B	Produce rubber moulds for lost wax casting process
MEM19011B	Perform wax injection of moulds for lost wax casting process
MEM19012B	Produce jewellery wax model
MEM19014B	Perform hand engraving
MEM19015B	Perform jewellery enamelling
MEM19016B	Construct jewellery components
MEM19017B	Fabricate jewellery items
MEM19020B	Fault-find and maintain micro-mechanisms
MEM19021B	Diagnose and service micro-mechanisms

Group MEM40105-01V08G03S16

WATCH MAKING

Modules/Units	Name
MEM20001A	Produce keys
MEM20002A	Assemble and test lock mechanisms
MEM20003A	Install and upgrade locks and hardware
MEM20004A	Gain entry
MEM20005A	Install and maintain door control devices/systems
MEM20006A	Maintain and service mechanical locking devices
MEM20007A	Plan and prepare a masterkey system
MEM20009A	Gain entry and reinstate fire and security containers
MEM20010A	Gain entry and reinstate automotive locking systems
MEM20014A	Perform a site security survey

Group MEM40105-01V08G03S17

Modules/Units	Name
MEM21001A	Replace watch batteries, capacitors and bands
MEM21002A	Perform watch movement exchange
MEM21003A	Perform watch case servicing, repair and refurbishment
MEM21004A	Clean watch and clock components
MEM21005A	Diagnose faults in quartz watches
MEM21006A	Service quartz watches
MEM21007A	Service complex quartz watches

MEM21008A	Service mechanical watches
MEM21009A	Inspect, diagnose, adjust and repair mechanical watches
MEM21010A	Service watch power generating systems
MEM21011A	Service calendar and other dial indication mechanisms for watches
MEM21012A	Service and repair mechanical watch oscillating systems
MEM21013A	Service, test and adjust watch escapements
MEM21014A	Service mechanical chronograph watches
MEM21015A	Perform precision watch timing and adjustment
MEM21016A	Install and set up clocks
MEM21017A	Service and repair clock timepieces

MARINE

Modules/Units	Name
MEM25001B	Apply fibre-reinforced materials
MEM25002B	Form and integrate fibre-reinforced structures
MEM25003B	Set up marine vessel structures
MEM25004B	Fair and shape surfaces
MEM25005B	Construct and assemble marine vessel timber components
MEM25006B	Undertake marine sheathing operations
MEM25007B	Maintain marine vessel surfaces
MEM25009B	Form timber shapes using hot processes
MEM25010B	Perform fitout procedures
MEM25011B	Install marine systems
MEM25012B	Install and test operations of marine auxiliary systems
MEM25014B	Perform marine slipping operations
MEM25015A	Assemble and install equipment and accessories/ancillaries

MEM50002B	Work safely on marine craft
MEM50003B	Follow work procedures to maintain the marine environment
MEM50004B	Maintain quality of environment by following marina codes
MEM50009B	Safely operate a mechanically powered recreational boat
GE21	Welding Welding (ME)

MEM05003B	Perform soft soldering	18	MEM05003B
MEM05004C	Perform routine oxy acetylene welding	18	MEM05004C
MEM05005B	Carry out mechanical cutting	18	MEM05005B
MEM05006C	Perform brazing and or silver soldering	18	MEM05006C
MEM05007C	Perform manual heating and thermal cutting	18	MEM05007C
MEM05008C	Perform advanced manual thermal cutting, gouging and shaping	18	MEM05008C
MEM05009C	Perform automated thermal cutting	18	MEM05009C
MEM05011D	Assemble fabricated components	72	MEM05011D
MEM05012C	Perform routine manual metal arc welding	18	MEM05012C
MEM05015D	Weld using manual metal arc welding process	36	MEM05015D
MEM05017D	Weld using gas metal arc welding process	36	MEM05017D
MEM05019D	Weld using gas tungsten arc welding process	36	MEM05019D
MEM05049B	Perform routine gas tungsten arc welding	18	MEM05049B
MEM05050B	Perform routine gas metal arc welding	18	MEM05050B

MEM05051A	Select welding processes	18	MEM05051A
MEM05052A	Apply safe welding practices	36	MEM05052A

Group MEM40105-02V05G03S02

Modules/Units	Name	Hrs	National Module(s)
MEM13014A	Apply principles of occupational health and safety in the work environment	10	MEM13014A
MEM14004A	Plan to undertake a routine task	9	MEM14004A
MEM15024A	Apply quality procedures	9	MEM15024A
MEM16007A	Work with others in a manufacturing, engineering or related environment	9	MEM16007A

Group MEM40105-04V05G01S02

Modules/Units	Name	Hrs	National Module(s)
MEM12023A	Perform engineering measurements	45	MEM12023A
MEM12024A	Perform computations	27	MEM12024A
MEM14005A	Plan a complete activity	36	MEM14005A
MEM15002A	Apply quality systems	18	MEM15002A
MEM16006A	Organise and communicate information	18	MEM16006A
MEM16008A	Interact with computing technology	18	MEM16008A
MEM17003A	Assist in the provision of on the job training	18	MEM17003A
MSAENV272B	Participate in environmentally sustainable work practices	20	MSAENV272B

Group MEM40105-04V05G02 GROUP 2 GROUP A SPECIALISATION UNITS LISTED IN MEM40105

Group MEM40105-04V05G02S01

Modules/Units	Name	Hrs	National Module(s)
MEM05024B	Perform welding supervision	108	MEM05024B
MEM05025C	Perform welding/fabrication inspection	108	MEM05025C
MEM05026C	Apply welding principles	36	MEM05026C
MEM05042B	Perform welds to code standards using flux core arc welding process	54	MEM05042B
MEM05043B	Perform welds to code standards using gas metal arc welding process	54	MEM05043B
MEM05044B	Perform welds to code standards using gas tungsten arc welding process	54	MEM05044B
MEM05045B	Perform pipe welds to code standards using manual metal arc welding process	54	MEM05045B
MEM05046B	Perform welds to code standards using manual metal arc welding process	54	MEM05046B
MEM05053A	Set and edit computer controlled thermal cutting machines	36	MEM05053A
MEM05054A	Write basic NC/CNC programs for thermal cutting machines	36	MEM05054A

Group MEM40105-04V05G02S02

Modules/Units	Name	Hrs	National Module(s)
MEM07016C	Set and edit computer controlled machines/processes	36	MEM07016C
MEM07018C	Write basic NC/CNC programs	36	MEM07018C

Group MEM40105-04V05G02S03

Modules/Units	Name	Hrs	National Module(s)
MEM09006B	Perform advanced engineering detail drafting	36	MEM09006B
MEM09007B	Perform advanced mechanical detail drafting	36	MEM09007B
MEM09008B	Perform advanced structural detail drafting	36	MEM09008B
MEM09009C	Create 2D drawings using computer aided design system	80	MEM09009C
MEM09010C	Create 3D models using computer aided design system	36	MEM09010C

MEM09023A	Create 3D code files using computer aided manufacturing system	54	MEM09023A

Group MEM40105-04V05G02S04

Modules/Units	Name	Hrs	National Module(s)
MEM14001B	Schedule material deliveries	72	MEM14001B
MEM14002B	Undertake basic process planning	72	MEM14002B
MEM14003B	Undertake basic production scheduling	72	MEM14003B

Group MEM40105-04V05G02S05

Modules/Units	Name	Hrs	National Module(s)
MEM16001B	Give formal presentations and take part in meetings	18	MEM16001B
MEM16003B	Provide advanced customer service	18	MEM16003B
MEM16009A	Research and analyse engineering information	18	MEM16009A
MEM16010A	Write reports	18	MEM16010A
MEM16011A	Communicate with individuals and small groups	18	MEM16011A
MEM16012A	Interpret technical specifications and manuals	36	MEM16012A
MEM16013A	Operate in a self-directed team	18	MEM16013A
MEM16014A	Report technical information	18	MEM16014A

Group MEM40105-04V05G02S06

Modules/Units	Name	Hrs	National Module(s)
MEM17001B	Assist in development and deliver training in the workplace	18	MEM17001B
MEM17002B	Conduct workplace assessment	18	MEM17002B

Group MEM40105-04V05G02S07

Modules/Units	Name	Hrs	National Module(s)
MEM18049C	Disconnect/reconnect fixed wired equipment up to 1000 volts a.c./1500 volts d.c.	27	MEM18049C

Group MEM40105-04V05G02S08

Modules/Units	Name	Hrs	National Module(s)
MEM24002B	Perform penetrant testing	36	MEM24002B
MEM24004B	Perform magnetic particle testing	36	MEM24004B
MEM24006B	Perform eddy current testing	54	MEM24006B
MEM24008B	Perform ultrasonic testing	54	MEM24008B
MEM24010B	Perform radiographic testing	108	MEM24010B
MEM24011B	Establish non-destructive tests	108	MEM24011B
MEM24012C	Apply metallurgy principles	54	MEM24012C

Group MEM40105-04V05G02S09

Modules/Units	Name	Hrs	National Module(s)
MEM30012A	Apply mathematical techniques in a manufacturing engineering or related environment	36	MEM30012A

Group MEM40105-04V05G03 GROUP 3 GROUP B ELECTIVE UNITS LISTED IN MEM40105

Group MEM40105-04V05G03S01

Modules/Units	Name	Hrs	National Module(s)
MEM05001B	Perform manual soldering/desoldering - electrical/electronic components	36	MEM05001B
MEM05002B	Perform high reliability soldering and desoldering	36	MEM05002B
MEM05003B	Perform soft soldering	18	MEM05003B
MEM05004C	Perform routine oxy acetylene welding	18	MEM05004C
MEM05005B	Carry out mechanical cutting	18	MEM05005B
MEM05006C	Perform brazing and or silver soldering	18	MEM05006C
MEM05007C	Perform manual heating and thermal cutting	18	MEM05007C
MEM05008C	Perform advanced manual thermal cutting, gouging and shaping	18	MEM05008C
MEM05009C	Perform automated thermal cutting	18	MEM05009C
MEM05010C	Apply fabrication, forming and shaping techniques	72	MEM05010C
MEM05011D	Assemble fabricated components	72	MEM05011D
MEM05012C	Perform routine manual metal arc welding	18	MEM05012C
MEM05013C	Perform manual production welding	18	MEM05013C
MEM05014C	Monitor quality of production welding/fabrications	18	MEM05014C
MEM05015D	Weld using manual metal arc welding process	36	MEM05015D
MEM05016C	Perform advanced welding using manual metal arc welding process	36	MEM05016C
MEM05017D	Weld using gas metal arc welding process	36	MEM05017D
MEM05018C	Perform advanced welding using gas metal arc welding process	36	MEM05018C
MEM05019D	Weld using gas tungsten arc welding process	36	MEM05019D
MEM05020C	Perform advanced welding using gas tungsten arc welding process	36	MEM05020C
MEM05022C	Perform advanced welding using oxy acetylene welding process	54	MEM05022C
MEM05023C	Weld using submerged arc welding process	36	MEM05023C
MEM05036C	Repair/replace/modify fabrications	36	MEM05036C
MEM05037C	Perform geometric development	54	MEM05037C
MEM05038B	Perform advanced geometric development - cylindrical/rectangular	18	MEM05038B
MEM05039B	Perform advanced geometric development - conical	18	MEM05039B
MEM05040B	Perform advanced geometric development - transitions	36	MEM05040B
MEM05041B	Weld using powder flame spraying	36	MEM05041B
MEM05047B	Weld using flux core arc welding process	36	MEM05047B
MEM05048B	Perform advanced welding using flux core arc welding process	36	MEM05048B
MEM05049B	Perform routine gas tungsten arc welding	18	MEM05049B
MEM05050B	Perform routine gas metal arc welding	18	MEM05050B
MEM05051A	Select welding processes	18	MEM05051A
MEM05052A	Apply safe welding practices	36	MEM05052A

Group MEM40105-04V05G03S02

Modules/Units	Name	Hrs	National Module(s)
MEM06001B	Perform hand forging	36	MEM06001B
MEM06002B	Perform hammer forging	36	MEM06002B
MEM06003C	Carry out heat treatment	54	MEM06003C
MEM06004B	Select heat treatment processes and test finished product	54	MEM06004B
MEM06005B	Perform drop and upset forging	36	MEM06005B
MEM06006C	Repair springs	36	MEM06006C
MEM06007B	Perform basic incidental heat/quenching, tempering and annealing	18	MEM06007B
MEM06008A	Hammer forge complex shapes	36	MEM06008A
MEM06009A	Hand forge complex shapes	36	MEM06009A

Modules/Units	Name	Hrs	National Module(s)

MEM03001B	Perform manual production assembly	36	MEM03001B
MEM03003B	Perform sheet and plate assembly	36	MEM03003B
MEM05001B	Perform manual soldering/desoldering - electrical/electronic components	36	MEM05001B
MEM05003B	Perform soft soldering	18	MEM05003B
MEM05004C	Perform routine oxy acetylene welding	18	MEM05004C
MEM05005B	Carry out mechanical cutting	18	MEM05005B
MEM05006C	Perform brazing and or silver soldering	18	MEM05006C
MEM05007C	Perform manual heating and thermal cutting	18	MEM05007C
MEM05008C	Perform advanced manual thermal cutting, gouging and shaping	18	MEM05008C
MEM05009C	Perform automated thermal cutting	18	MEM05009C
MEM05010C	Apply fabrication, forming and shaping techniques	72	MEM05010C
MEM05011D	Assemble fabricated components	72	MEM05011D
MEM05012C	Perform routine manual metal arc welding	18	MEM05012C
MEM05013C	Perform manual production welding	18	MEM05013C
MEM05015D	Weld using manual metal arc welding process	36	MEM05015D
MEM05016C	Perform advanced welding using manual metal arc welding process	36	MEM05016C
MEM05017D	Weld using gas metal arc welding process	36	MEM05017D
MEM05018C	Perform advanced welding using gas metal arc welding process	36	MEM05018C
MEM05019D	Weld using gas tungsten arc welding process	36	MEM05019D
MEM05020C	Perform advanced welding using gas tungsten arc welding process	36	MEM05020C
MEM05036C	Repair/replace/modify fabrications	36	MEM05036C
MEM05037C	Perform geometric development	54	MEM05037C
MEM05049B	Perform routine gas tungsten arc welding	18	MEM05049B
MEM05050B	Perform routine gas metal arc welding	18	MEM05050B
MEM05051A	Select welding processes	18	MEM05051A
MEM05052A	Apply safe welding practices	36	MEM05052A

Group MEM40105-04V05G03S03

Modules/Units	Name	Hrs	National Module(s)
MEM07005C	Perform general machining	72	MEM07005C
MEM07015B	Set computer controlled machines/processes	18	MEM07015B
MEM07032B	Use workshop machines for basic operations	18	MEM07032B

Group MEM40105-04V05G03S04

Modules/Units	Name	Hrs	National Module(s)
MEM08002C	Pre-treat work for subsequent surface coating	36	MEM08002C
MEM08004B	Finish work using wet, dry and vapour deposition methods	36	MEM08004B
MEM08010B	Manually finish/polish materials	54	MEM08010B

Group MEM40105-04V05G03S05

Modules/Units	Name	Hrs	National Module(s)
MEM09002B	Interpret technical drawing	36	MEM09002B
MEM09003B	Prepare basic engineering drawing	72	MEM09003B
MEM09005B	Perform basic engineering detail drafting	72	MEM09005B
MEM09022A	Create 2D code files using computer aided manufacturing system	36	MEM09022A

Group MEM40105-04V05G03S06

Modules/Units	Name	Hrs	National Module(s)
MEM10001C	Erect structures	36	MEM10001C
MEM10002B	Terminate and connect electrical wiring	27	MEM10002B
MEM10010B	Install pipework and pipework assemblies	36	MEM10010B

Group MEM40105-04V05G03S07

Modules/Units	Name	Hrs	National Module(s)
MEM11001C	Erect/dismantle scaffolding and equipment	36	MEM11001C
MEM11002C	Erect/dismantle complex scaffolding and equipment	36	MEM11002C
MEM11003B	Coordinate erection/dismantling of complex scaffolding/equipment	36	MEM11003B
MEM11010B	Operate mobile load shifting equipment	36	MEM11010B
MEM11011B	Undertake manual handling	18	MEM11011B
MEM11012B	Purchase materials	54	MEM11012B
MEM11021B	Perform advanced operation of load shifting equipment	18	MEM11021B
MEM11022B	Operate fixed/moveable load shifting equipment	36	MEM11022B

Group MEM40105-04V05G03S08

Modules/Units	Name	Hrs	National Module(s)
MEM12002B	Perform electrical/electronic measurement	18	MEM12002B
MEM12007D	Mark off/out structural fabrications and shapes	36	MEM12007D

Group MEM40105-04V05G03S09

Modules/Units	Name	Hrs

MYANMAR BUDDHIST SCHOOLS & VOLUNTARY SCHOOLS STUDY SUPPORT WEBSITE

This website contains English+ Myanmar Explanations of the tutoring lessons based on New South Wales & Western Australian school curriculum subjects.

http://www.highlightcomputer.com/y712lessons.htm

Year 11+12 Lessons	Year 9+10 Lessons	Certificate to Degree	Volunteer Teachers Professional Development

The aim to develop this site is to provide the tutoring support for the students in Myanmar Buddhist Schools and Voluntary Schools including NLD Education Network Schools to acquire the international standard school education.

By studying the contents of this site, the students will acquire the following benefits

- Reading+ Listening skills in English Language
- Acquire Australian School Education
- Use of IT Skills in E- Learning
- Self learning practice

The lessons can be learnt by two ways

- Viewing the power-point lessons by using computer
- Viewing the JPEG image files and listening MP3 Audio files by using Portable DVD Players which are donated to Myanmar Buddhist Schools & Voluntary Schools

The students need to

- View the Lessons
- Copy the lessons
- Listen to both Myanmar & English Explanations of the lessons
- Do the exercises and submit the assignments
- Sit the examinations

The facilitators/ co-ordinators need to

- Download the lessons & unzip them
- Show the students which folders are to be studied on weekly basis by using computer or Portable DVD Player
- Supervise the students in their learning

The Teacher who prepares the lessons

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Registered Teacher (Western Australian Teacher Registration Board)

Teacher of Electrical Engineering (TAFE-NSW)

WRITTEN LESSONS+AUDIO FILES

Year 11+12

MATHEMATICS

www.iqytechnicalcollege.com/Yr1112Maths1.zip

PHYSICS

www.iqytechnicalcollege.com/Yr1112Physics.zip

CHEMISTRY

www.iqytechnicalcollege.com/Yr1112Chemistry.zip

SCIENCE

www.iqytechnicalcollege.com/Yr1112Science.zip

DESIGN & TECHNOLOGY

www.iqytechnicalcollege.com/Yr1112 Design&Technology.zip

SOFTWARE DESIGN

www.iqytechnicalcollege.com/Yr1112SoftwareDesign.zip

VIDEOS

Year 11+12 WEEK 1

Mathematics

Yr 11+12 Maths 1-Rationals, Polynomials, Equations **Maths (001) Yr11+12 to Maths (021) Yr 11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/55xktujxseqj/Yr_11_12_Maths_1_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/3lgvs31i6kpj/Yr_11_12_Maths_1_DVD_zip

Video

https://youtu.be/afPlKAOmLrA

Chemistry

Yr 11+12 Chemistry 1-Carbon Chemistry **Chemistry (001) Y11+12 to Chemistry (042) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/1bm26hidjc5/Yr_11_12_Chemistry_1_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/4iaet719aisx/Yr_11_12_Chemistry_1_DVD_zip

Design & Technology

Yr 11+12 Design & Technology 1-Basic Concepts **DesignTech (001) Y11+12 to Design Tech (029) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/6h2dkyic7myv/Yr_11_12_Design_Technology_1_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/7ey1mbqmjsg1/Yr_11_12_Design_Technology_1_DVD_zip

Video

https://youtu.be/6cnLVR3BHeg

Physics

Yr 11+12 Physics 1-Gravity **Physics (001) Y11+12 to Physics (015) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/38ofzxy4nnh7/Yr_11_12_Physics_1_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/63rck9dfn8uz/Yr_11_12_Physics_1_DVD_zip

Video

https://youtu.be/lxXmAfYWayc

Science

Yr 11+12 Science 1A-Physical and chemical properties of everyday substances **Science (001) Y11+12 to Science (015) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/1o184i6a1xf/Yr_11_12_Science_1A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/a1fhtw6u8i5/Yr_11_12_Science_1A_DVD_zip

Software Design

Yr 11+12 Software Design 1-Rights and responsibilities of softwaredevelopers **Software (001) Y11+12 to Software (027) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/4i41ee7xkv87/Yr_11_12_Software_Design_1_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/33x81hahh9nf/Yr_11_12_Software_Design_1_DVD_zip

Video

https://youtu.be/mPBjzZnjHwU

Year 11+12 WEEK 2

Mathematics

Yr 11+12 Maths 2-Circle Geometry **Maths (022) Yr11+12 to Maths (047) Yr 11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/3j9q9npbaiz3/Yr_11_12_Maths_2a_PPT_zip

Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/5rm7n1duw4gv/Yr_11_12_Maths_2a_DVD_zip

Video

https://youtu.be/KxFAPQQBEEc

Chemistry

Yr 11+12 Chemistry 2a-Industrial uses & production of Organic Compounds **Chemistry (043) Y11+12 to Chemistry (085) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/563iik1u5hn/Yr_11_12_Chemistry_2-a_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/44b4nw21thib/Yr_11_12_Chemistry_2-a_DVD_zip

Design & Technology

Yr 11+12 Design & Technology 2-Design Process **DesignTech (030) Y11+12 to Design Tech (050) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/xl5nu78y82z/Yr_11_12_Design_amp_Technology_2_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/10iiaadvra71/Yr_11_12_Design_amp_Technology_2_DVD_zip

Video

https://youtu.be/AWMHwZuza4A

Physics

Yr 11+12 Physics 2-Projectile Motion **Physics (016) Y11+12 to Physics (058) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/peqs8n39qdl/Yr_11_12_Physics_2_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/3wjvy9yb6cyv/Yr_11_12_Physics_2_DVD_zip

Video

https://youtu.be/QicnwF-pd9E

Science

Yr 11+12 Science 1B- Chemical effect on body skin **Science (035) Y11+12 to Science (077) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/4k53ai7zz3al/Yr_11_12_Science_1B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/58phr5mg5jrp/Yr_11_12_Science_1B_DVD_zip

Video

https://youtu.be/kR_9_RMpBhM

Software Design

Yr 11+12 Software Design 2A- Software Development

Link for power-points to view with computer	http://www.filefactory.com/file/31zikrytqpv7/Yr11_12_Software_Design_2_A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/3yqf54xlozgp/Yr_11_12_Software_Design_2_A_DVD_zip

Video

https://youtu.be/ETaTh-p7S88

Year 11+12 WEEK 3

Mathematics

Yr 11+12 Maths 3A-Plotting Graphs **Maths (048) Yr11+12 to Maths (073) Yr 11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/5bg04kzpn1av/Yr_11_12_Maths_3A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/17koswfr5yyj/Yr_11_12_Maths_3A_DVD_zip

Video

https://youtu.be/V7DdiD_XXNg

Chemistry

Yr 11+12 Chemistry 3A-Electro-Chemistry **Chemistry (0086) Y11+12 to Chemistry (110) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/6k628o9r60ml/Yr_11_12_Chemistry_3A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/7gv7fcr0q18b/Yr_11_12_Chemistry_3A_DVD_zip

Design & Technology

Yr 11+12 Design & Technology 3-Design Professions **DesignTech (051) Y11+12 to Design Tech (0062) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/3orxdb5waclf/Yr_11_12_Design_amp_Technology_3_PPT_zip

Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/1m2dvqt3oamn/Yr_11_12_Design_amp_Technology_3_DVD_zip

Video

https://youtu.be/WtpkEztrFHA

Physics

Yr 11+12 Physics 3-Newton Law of Universal Gravitation **Physics (059) Y11+12 to Physics (078) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/3nw97wiqv44h/Yr_11_12_Physics_3_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/1wdq66z07fw3/Yr_11_12_Physics_3_DVD_zip

Video

https://youtu.be/7naPc7nLlv8

Science

Yr 11+12 Science 2A-Bionics **Science (078) Y11+12 to Science (130) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/2onjzls6m8l7/Yr_11_12_Science_2A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/1bj881t4g30l/Yr_11_12_Science_2A_DVD_zip

Video

https://youtu.be/zhUD3cC14AY

Software Design

Yr 11+12 Software Design 3A-Defining the problem **Software (054) Y11+12 to Software (091) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/5pb1nap5gro9/Yr_11_12_Software_Design_3A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/38iepya8p16j/Yr_11_12_Software_Design_3A_DVD_zip

Video

https://youtu.be/L0XemUHw8Fg

Year 11+12 WEEK 4

Mathematics

Yr 11+12 Maths 4 Quadratic equations **Maths (074) Yr11+12 to Maths (123) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/61bwkp4g7xa1/Yr_11_12_Maths_4_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/1l2f3d8fpaet/Yr_11_12_Maths_4_DVD_zip**

Video

https://youtu.be/QNzf5Qhcho8

Chemistry

Yr 11+12 Chemistry3B Electrical Cells **Chemistry (111) Y11+12 to Chemistry (145) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/68bkp2uhckg9/Yr_11_12_Chemistry_3B_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/3htp0siz3xxh/Yr_11_12_Chemistry_3B_DVD_zip**

Video

https://youtu.be/_OhRYtxiTS0

Design & Technology

Yr 11+12 Design & Technology 4–Factors affecting design **DesignTech (141) Y11+12 to Design Tech (161) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/7kgcjihwlt1j/Yr_11_12_Design_amp_Technology_4_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/4y5wq0f0kgxb/Yr_11_12_Design_amp_Technology_4_DVD_zip**

Video

https://youtu.be/icoOEn26FZY

Physics

Yr 11+12 Physics 4-Measurement **Physics (0079) Y11+12 to Physics (095) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/5gljw7kfdorh/Yr_11_12_Physics_4_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/1rddcq0if6uf/Yr_11_12_Physics_4_DVD_zip**

Video

https://youtu.be/5ObMFCjdTXM

Science

Yr 11+12 Science 3B–Communication system waves **Science (131) Y11+12 to Science (157) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/3nizl54swhfp/Yr_11_12_Science_3B_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/5ymx6lu4v929/Yr_11_12_Science_3B_DVD_zip**

Video

https://youtu.be/YISoC6caucE

Software Design

Yr 11+12 Software Design 3B-Modelling **Software (092) Y11+12 to Software (128) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/6opoj6nrq1uf/Yr_11_12_Software_Design_3B_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/2b4dk1kxj6gb/Yr_11_12_Software_Design_3B_DVD_zip**

Video

https://youtu.be/GDj4FremeOc

Year 11+12 WEEK 5

Mathematics

Yr 11+12 Maths 5–Trigo Compound angles **Maths (124) Yr11+12 to Maths (133) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/7dh9tw73vvhz/Yr_11_12_Maths-5_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/3h6gv344xwd9/Yr_11_12_Maths-5_DVD_zip**

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Chemistry

Yr 11+12 Chemistry 3C–Electro-chemical Cells **Chemistry (146) Y11+12 to Chemistry (175) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/2syd63ux58sv/Yr_11_12_Chemistry_3C_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/33wm75kwz0zh/Yr_11_12_Chemistry_3C_DVD_zip**

Video

https://youtu.be/KnIlmfAk1a4

Design & Technology

Yr 11+12 Design & Technology 5–Trends in Design Production **DesignTech (141) Y11+12 to Design Tech (161) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/febizarmz9z/Yr_11_12_Design_amp_Technology_5_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/7i9l28b7vbsn/Yr_11_12_Design_amp_Technology_5_DVD_zip**

Video

https://youtu.be/zO2LI1yzvAM

Physics

Yr 11+12 Physics 5A-Motor **Physics (096) Y11+12 to Physics (122) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/73xcfb02vnqd/Yr_11_12_physics_5A_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/6soniig57871/Yr_11_12_physics_5A_DVD_zip**

Video

https://youtu.be/nKWCkDlJpvA

Science

Yr 11+12 Science 4A-Fibres **Science (158) Y11+12 to Science (196) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/59h5k11ibn3x/Yr_11_12_Science_4A_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/1qtz6spfhkzt/Yr_11_12_Science_4A_DVD_zip**

Video

https://youtu.be/dUPn1De2iJA

Software Design

Yr 11+12 Software Design 4A–Design Patterns **Software (129) Y11+12 to Software (156) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/2jx1tl9q3bo3/Yr_11_12_Software_Design_4A_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/3v67gn0fc95j/Yr_11_12_Software_Design_4A_DVD_zip**

Video

https://youtu.be/QAWiURC1X1M

Year 11+12 WEEK 6

Mathematics

Yr 11+12 Maths –6 - Half Compound Angles **Maths (134) Yr11+12 to Maths (151) Yr 11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/6i33bfjxhi8p/Yr_11_12_Maths-6_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/jvxnubyijdz/Yr_11_12_Maths-6_DVD_zip

Video

https://youtu.be/sxJcFi9JrPo

Chemistry

Yr 11+12 Chemistry –4A- Nuclear Chemistry **Chemistry (176) Y11+12 to Chemistry (211) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/1j9qnfeuu4wn/Yr_11_12_Chemistry_4A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/11pop4e77uu3/Yr_11_12_Chemistry_4A_DVD_zip

Video

https://youtu.be/-pYr7fxYEDw

Design & Technology

Yr 11+12 Design & Technology –6 - Design Techniques **DesignTech (162) Y11+12 to Design Tech (169) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/2soqe4fnwp5n/Yr_11_12_Design_amp_Technology_6_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/74ldosb9mtlr/Yr_11_12_Design_amp_Technology_6_DVD_zip

Video

https://youtu.be/W6YSsRSe8QE

Physics

Yr 11+12 Physics –5B--DC Machines **Physics (123) Y11+12 to Physics (163) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/7f10wt5idbrn/Yr_11_12_Physics_5B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/6mk0jia1lmbv/Yr_11_12_Physics_5B_DVD_zip

Video

https://youtu.be/_OYvfoxZYvc

Science

Yr 11+12 Science -4B—Plastics **Science (197) Y11+12 to Science (228) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/276iqkxdxa2l/Yr_11_12_Science_4B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/7hhnabt4z9gd/Yr_11_12_Science_4B_DVD_zip

Video

https://youtu.be/se-3r2FdnNA

Software Design

Yr 11+12 Software Design 4B–Program Testing **Software (157) Y11+12 to Software (191) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/1jpozv9ms1p1/Yr_11_12_Software_Design_4B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/62d95fc55r8j/Yr_11_12_Software_Design_4B_DVD_zip

Video

https://youtu.be/oBSGhNtW1iA

Year 11+12 WEEK 7

Mathematics

Yr 11+12 Maths 7—Trigo Problems **Maths (152) Yr11+12 to Maths (155) Yr 11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/2dewz4dd1ws9/Yr_11_12_Maths_7_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/782mayjmgrwr/Yr_11_12_Maths-7_DVD_zip

Video

https://youtu.be/7UxTaL-DCKk

Chemistry

Yr 11+12 Chemistry –4B--Nuclear Chemistry **Chemistry (212) Y11+12 to Chemistry (244) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/57xqitimalcf/Yr_11_12_Chemistry_4B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/2jsc66zdhza3/Yr_11_12_Chemistry_4B_DVD_zip

Video

https://youtu.be/f6OaLtASWfQ

Design & Technology

Yr 11+12 Design & Technology –7--Historical Cultural Influences **DesignTech (170) Y11+12 to Design Tech (170) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/28ge6g8t95nf/Yr_11_12_Design_amp_Technology_7_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/2u221ebddzgh/Yr_11_12_Design_amp_Technology_7_DVD_zip

Video

https://youtu.be/jwKCsOyyJ7M

Physics

Yr 11+12 Physics 6---Generator **Physics (164) Y11+12 to Physics (174) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/6nxgc3z9jx3j/Yr_11_12_Physics_6_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/77d559jdpzbh/Yr_11_12_Physics_6_DVD_zip

Video

https://youtu.be/p-4hyJPMPMA

Science

Yr 11+12 Science –5A--Consumers' Products, Additives, Micro-organisms **Science (229) Y11+12 to Science (251) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/v2xs46ydqwh/Yr_11_12_Science_5A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/62yc00coouit/Yr_11_12_Science_5A_DVD_zip

Video

https://youtu.be/dUTGrwp49uA

Software Design

Yr 11+12 Software Design 4C -Arrays **Software (192) Y11+12 to Software (232) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/2smhczibe007/Yr_11_12_Software_Design_4C_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/578udxs1n0un/Yr_11_12_Software_Design_4C_DVD_zip

Video

https://youtu.be/kHqLfDleww0

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Year 11+12 WEEK 8

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Chemistry

Yr 11+12 Chemistry 5A–Properties of Acidic Oxides **Chemistry (245) Y11+12 to Chemistry (287) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/4lgo6pmm1zcn/Yr_11_12_Chemistry_5_A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/6spd909w0aqn/Yr_11_12_Chemistry_5_A_DVD_zip

Design & Technology

Yr 11+12 Design & Technology –8-Creative & Collaborative Approaches in Design **DesignTech (171) Y11+12 to Design Tech (186) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/7hqlbl3smv2h/Yr_11_12_Design_amp_Technology_8_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/3m8mjwl1x87/Yr_11_12_Design_amp_Technology_8_DVD_zip

Video

https://youtu.be/8W5DBEQ4Obk

Physics

Yr 11+12 Physics 7-Transformer **Physics (175) Y11+12 to Physics (201) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/6nztg0vhjlat/Yr_11_12_Physics_7_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/1ynwo2ihuq2r/Yr_11_12_Physics_7_DVD_zip

Video

https://youtu.be/jLFkXvMrQQw

Science

Yr 11+12 Science 5B–Microbes+ Natural Preservatives **Science (252) Y11+12 to Science (290) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/5db58wg2693b/Yr_11_12_Science_5B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/v2k2dtvengf/Yr_11_12_Science_5B_DVD_zip

Video

https://youtu.be/15YTietVnWM

Software Design

Yr 11+12 Software Design 4D–String Processing **Software (233) Y11+12 to Software (282) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/4arzf4g1ra4n/Yr_11_12_Software_Design_4D_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/660feougxrmx/Yr_11_12_Software_Design_4D_DVD_zip**

Video

https://youtu.be/zTfLtmMLLgQ

Software Design 4E

https://youtu.be/3H8qot5LotQ

Year 11+12 WEEK 9

Mathematics

Yr 11+12 Maths –8-Trigo Equations **Maths (156) Yr11+12 to Maths (180) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/1zydhglalw0v/Yr_11_12_Maths-8_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/cwfzpu2rxqj/Yr_11_12_Maths-8_DVD_zip**

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Chemistry

Yr 11+12 Chemistry 5B–Properties of Acidic Oxides **Chemistry (288) Y11+12 to Chemistry (302) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/4wz11twlgnrp/Yr_11_12_Chemistry_5_B_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/55f2o4jbd4aj/Yr_11_12_Chemistry_5_B_DVD_zip**

Video

https://youtu.be/dAwX6y1fYSE

Chemistry 6

https://youtu.be/CcgvTmll8Xg

Chemistry 6A

https://youtu.be/_xRKf4aTlR8

Chemistry 6B

https://youtu.be/7iWtCGlb7q4

Design & Technology

Yr 11+12 Design & Technology 9 –Design Solutions/ Design Briefs **DesignTech (187) Y11+12 to Design Tech (221) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/4h9t8kot3vkr/Yr_11_12_Design_amp_Technology_9_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/5lhqea1xgj1x/Yr_11_12_Design_amp_Technology_9_DVD_zip**

Video

https://youtu.be/XI9svBSy0TM

Physics

Yr 11+12 Physics -8–Magnetisms & Moving Charges **Physics (202) Y11+12 to Physics (234) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/x9thcvnunhh/Yr_11_12_Physics_8_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/c6kc8qcchfb/Yr_11_12_Physics_8_DVD_zip**

Video

https://youtu.be/OPb0nrH6AaQ

Science

Yr 11+12 Science 6B – Circulatory System **Science (291) Y11+12 to Science (329) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/1u11lqkdjz3b/Yr_11_12_Science_6B_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/9xue6qgim7z/Yr_11_12_Science_6B_DVD_zip**

Video

Science 6A

https://youtu.be/iQKlTWfvEXQ

Software Design

Yr 11+12 Software Design 5A–Interface Design **Software (283) Y11+12 to Software (316) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/3hh5uvmnzsi7/Yr_11_12_Software_Design_5A_PPT_zip**

Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/1qsd0ucgswf5/Yr_11_12_Software_Design_5A_DVD_zip

Video

https://youtu.be/xLxGd21ir8Q

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Year 11+12 WEEK 10

Mathematics

Yr 11+12 Maths -9-Parabola **Maths (181) Yr11+12 to Maths (198) Yr 11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/2dahlr4voikt/Yr_11_12_Maths-9_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/6wdbd5334xbr/Yr_11_12_Maths-9_DVD_zip

Video

https://youtu.be/BJh6SRDxzVo

Chemistry

Yr 11+12 Chemistry 7A –Application of PH **Chemistry (303) Y11+12 to Chemistry (348) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/2g98x1jgr267/Yr_11_12_Chemistry_7A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/6g39xdlag301/Yr_11_12_Chemistry_7A_DVD_zip

Video

https://youtu.be/VxBsIUBsjTA

Design & Technology

Yr 11+12 Design & Technology 10A–Research Data Presentation **DesignTech (222) Y11+12 to Design Tech (286) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/1rhgbjn2ycvd/Yr_11_12_Design_amp_Technology_10_A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/33c9z3wzfofz/Yr_11_12_Design_amp_Technology_10_A_DVD_zip

Video

https://youtu.be/ffQDLDVFs54

Design & Technology 10B

https://youtu.be/97Y7RNtkVjY

Science

Yr 11+12 Science 6C–Reproduction of Bacteria **Science (330) Y11+12 to Science (357) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/rh09iwm0cef/Yr_11_12_Science_6C_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/2xyfjvtun4qp/Yr_11_12_Science_6C_DVD_zip

Software Design

Yr 11+12 Software Design 5B –Random Number Generator **Software (316) Y11+12 to Software (378) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/11w5hdqhwjwv/Yr_11_12_Software_Design_5B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/5iyp2ls35tn3/Yr_11_12_Software_Design_5B_DVD_zip

Video

https://youtu.be/kg7cnxAb4D0

Year 11+12 WEEK 11

Chemistry

Yr 11+12 Chemistry 7B–Volumetric Analysis Titration **Chemistry (341) Y11+12 to Chemistry (373) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/79xmh8hzaf3p/Yr_11_12_Chemistry_7B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/1i1kkiikdmnh/Yr_11_12_Chemistry_7B_DVD_zip

Video

https://youtu.be/5taFWZTGZ3I

Design & Technology

Yr 11+12 Design & Technology 11-Marketing **DesignTech (287) Y11+12 to Design Tech (316) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/68r77gh4etyr/Yr_11_12_Design_amp_Technology_11_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/2x78i48ss479/Yr_11_12_Design_amp_Technology_11_DVD_zip

Video

https://youtu.be/rpfdjbjlo90

Science

Yr 11+12 Science 7A –Disasters **Science (358) Y11+12 to Science (418) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/72cbg04po41z/Yr_11_12_Science_7A_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/69lgpi78j9xp/Yr_11_12_Science_7A_DVD_zip**

Software Design

Yr 11+12 Software Design 5C–Program Counter+DLL +Compilation **Software (344) Y11+12 to Software (344) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/40c35npbomr5/Yr_11_12_Software_Design_5C_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/7estdz65tyv/Yr_11_12_Software_Design_5C_DVD_zip**

Video

https://youtu.be/72CfwGKaY1s

Year 11+12 WEEK 12

Mathematics

Yr 11+12 Maths-10 –Parametric Equations+ Permutation+ Combinations **Maths (199) Yr11+12 to Maths (224) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/rz2yo6eo8gl/Yr_11_12_Maths-10_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/3sbfzwyfzcer/Yr_11_12_Maths-10_DVD_zip**

Video

https://youtu.be/Mzfxj6lydeQ

Maths 11

https://youtu.be/4KFCIr_MVyc

Chemistry

Yr 11+12 Chemistry-8–Titration+ Esters

Link for power-points to view with computer	**http://www.filefactory.com/file/42s3rr9cilap/Yr_11_12_Chemistry_8_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/36hcofmkt1ox/Yr_11_12_Chemistry_8_DVD_zip**

Video

https://youtu.be/79ZBL1h8CBA

Design & Technology

Yr 11+12 Design & Technology-12 –Communications **DesignTech (317) Y11+12 to Design Tech (353) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/5r9tkbo3wpd3/Yr_11_12_Design_amp_Technology_12_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/5a0ig46nb5vh/Yr_11_12_Design_amp_Technology_12_DVD_zip**

Video

https://youtu.be/drEiGJX0dsc

Science

Yr 11+12 Science-7B –Seismic Waves+ Bush Fires **Science (443) Y11+12 to Science (473) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/1ro7lcm2ev9l/Yr_11_12_Science_7B_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/4mi5rm03032f/Yr_11_12_Science_7B_DVD_zip**

Software Design

Yr 11+12 Software Design-5D –Optimiser **Software (379) Y11+12 to Software (410) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/5itbbkwkyflf/Yr_11_12_Software_Design_5D_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/4agmfj3tfe8v/Yr_11_12_Software_Design_5D_DVD_zip**

Video

https://youtu.be/lldV4rbjv30

Year 11+12 WEEK 13

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Chemistry

Yr 11+12 Chemistry-8 -Titration+ Esters **Chemistry (374) Y11+12 to Chemistry (407) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/4htdi6foskqv/Yr_11_12_Chemistry_8_PPT_zip**

Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/52le71z8926b/Yr_11_12_Chemistry_8_DVD_zip

Design & Technology

Yr 11+12 Design & Technology-13 –Computer Based Technologies **DesignTech (354) Y11+12 to Design Tech (392) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/387s4iyi46kl/Yr_11_12_Design_amp_Technology_13_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/issguqha78n/Yr_11_12_Design_amp_Technology_13_DVD_zip

Video

https://youtu.be/lbZ3cwYPL9g

https://youtu.be/4z-CmJrepHk

Science

Yr 11+12 Science-8A –Atmosphere + Space Craft **Science (419) Y11+12 to Science (442) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/2ghok2l7sf59/Yr_11_12_Science_8A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/4x2muuhgmw53/Yr_11_12_Science_8A_DVD_zip

Software Design

Yr 11+12 Software Design-5E –Documentations of Software Solutions **Software (411) Y11+12 to Software (444) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/4zx501nscxf7/Yr_11_12_Software_Design_5E_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/6v65wgxqivbv/Yr_11_12_Software_Design_5E_DVD_zip

Video

https://youtu.be/VW4fk5sV4p4

Year 11+12 WEEK 14

Mathematics

Yr 11+12 Maths-12 –Factor Theorem + Remainder Theorem **Maths (225) Yr11+12 to Maths (240) Yr 11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/136lrkgns6rx/Yr_11_12_Maths-12_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/6byom3fyza7f/Yr_11_12_Maths-12_DVD_zip

Video

https://youtu.be/20u2Jx6xnbw

Chemistry

Yr 11+12 Chemistry-9A –The Work of Chemist **Chemistry (408) Y11+12 to Chemistry (433) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/7laadq7nl6cf/Yr_11_12_Chemistry_9A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/3z37l4qihde5/Yr_11_12_Chemistry_9A_DVD_zip

Video

https://youtu.be/eepO1GLhtns

Design & Technology

Yr 11+12 Design & Technology 14B Management **DesignTech (393) Y11+12 to Design Tech (433) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/1epo015zxn5f/Yr_11_12_Design_amp_Technology_14B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/65lmctlgowad/Yr_11_12_Design_amp_Technology_14A_DVD_zip

Video

Design & Technology 14A

https://youtu.be/tK545SK9Tao

Science

Yr 11+12 Science -8B–Space Technology **Science (443) Y11+12 to Science (473) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/4ccs42931yzh/Yr_11_12_Science_8B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/5i6aglhy7uxt/Yr_11_12_Science_8B_DVD_zip

Software Design

Yr 11+12 Software Design-6A –Testing the software solution **Software (445) Y11+12 to Software (505) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/5jo5sy4fboij/Yr_11_12_Software_Design_6A_PPT_zip

Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/7dih42xf5geh/Yr_11_12_Software_Design_6A_DVD_zip

Video

https://youtu.be/JwyNceTj5JI

Year 11+12 WEEK 15

Mathematics

Yr 11+12 Maths-13 –Graphing Polynomials + Integration **Maths (241) Yr11+12 to Maths (258) Yr 11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/12lxg7gx0xpj/Yr11_12_Maths-13_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/4bqy59l2rx1n/Yr_11_12_Maths-13_DVD_zip

Video

https://youtu.be/hU00Wdtm8H0

Chemistry

Yr 11+12 Chemistry 9A –The work of chemist **Chemistry (434) Y11+12 to Chemistry (444) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/7laadq7nl6cf/Yr_11_12_Chemistry_9A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/1fmdmk1brnav/Yr_11_12_Chemistry_9B_DVD_zip

Design & Technology

Yr 11+12 Design & Technology -14A–Managers+ Management Styles **DesignTech (434) Y11+12 to Design Tech (439) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/4bvdm6sa3ncx/Yr_11_12_Design_amp_Technology14A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/65lmctlgowad/Yr_11_12_Design_amp_Technology_14A_DVD_zip

Video

Design & Technology 14B

https://youtu.be/j7DxOusOtfM

Science

Yr 11+12 Science-8C –Optical Telescope **Science (474) Y11+12 to Science (516) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/2w2xz4cujpst/Yr_11_12_Science_8C_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/5w36sno04vxh/Yr_11_12_Science_8C_DVD_zip

Software Design

Yr 11+12 Software Design-6B –Driver Module **Software (445) Y11+12 to Software (505) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/xdk1miyf7zn/Yr_11_12_Software_6B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/49wkhg6pwzqt/Yr_11_12_Software_6B_DVD_zip

Video

https://youtu.be/vu3bOR9KtrU

Year 11+12 WEEK 16

Mathematics

Yr 11+12 Maths 14 Integration Approximation **Maths (259) Yr11+12 to Maths (268) Yr 11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/4jt47nx1fgwn/Yr11_12_Maths-14_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/os3n14w63zh/Yr_11_12_Maths-14_DVD_zip

Video

https://youtu.be/BxoPyYDoSHk

Chemistry

Yr 11+12 Chemistry 9B –Atomic Absorption+ Spectrograph **Chemistry (445) Y11+12 to Chemistry (458) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/qhvxu27le4v/Yr_11_12_Chemistry_9B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/1fmdmk1brnav/Yr_11_12_Chemistry_9B_DVD_zip

Video

https://youtu.be/z9efzQuNePg

Design & Technology

Yr 11+12 Design & Technology -15–Organizational Structure **DesignTech (440) Y11+12 to Design Tech (463) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/5y5b3wqyv4f1/Yr_11_12_Design_amp_Technology_15_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/11fnlo873olx/Yr_11_12_Design_amp_Technology_15_DVD_zip**

Video

https://youtu.be/xpbDhFJrLVo

Science

Yr 11+12 Science-6A –Central peripheral nervous system

Link for power-points to view with computer	**http://www.filefactory.com/file/1fd7tm0ykurx/Yr_11_12_Science_6A_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/7koilryf62tn/Yr_11_12_Science_6A_DVD_zip**

Video

Science 6B

https://youtu.be/WzxCKpDquBI

Science 6C

https://youtu.be/raUa04nYcho

Science 7A

https://youtu.be/vhBQ7GliPSw

Science 7B

https://youtu.be/KjO_SLcRIsQ

Science 8A

https://youtu.be/Guv-3nThBiM

Science 8B

https://youtu.be/8oMPx36Q_Pc

Software Design

Yr 11+12 Software Design-7 –Code Modification **Software (506) Y11+12 to Software (530) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/7fklqij5c0z3/Yr_11_12_Software_Design_7_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/5w9d4378mcct/Yr_11_12_Software_Design_7_DVD_zip**

Video

https://youtu.be/dKbdvz-vN8s

Year 11+12 WEEK 17

Mathematics

Yr 11+12 Maths -15–Graphing Inverse Function **Maths (269) Yr11+12 to Maths (290) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/2tpasibu1e1h/Yr_11_12_Maths-15_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/m2x128nxo3/Yr_11_12_Maths-15_DVD_zip**

Video

https://youtu.be/RXmABGXM3To

Chemistry

Yr 11+12 Chemistry -10A–Isomers+ Ozone + WaterAnalysis **Chemistry (459) Y11+12 to Chemistry (506) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/252l7enlc23j/Yr_11_12_Chemistry_10A_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/17ocelpd5eol/Yr_11_12_Chemistry_10A_DVD_zip**

Video

https://youtu.be/9ICeJpMExqU

Design & Technology

Yr 11+12 Design & Technology-16 –Safety Issues **DesignTech (466) Y11+12 to Design Tech (488) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/5vhtrwszqhb3/Yr_11_12_Design_amp_Technology_16_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/14skzslec8a5/Yr_11_12_Design_amp_Technology_16_DVD_zip**

Video

https://youtu.be/AuYSNtmo-IM

Year 11+12 WEEK 18

Mathematics

Yr 11+12 Maths-16 –Trigo Evaluation **Maths (291) Yr11+12 to Maths (307) Yr 11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/5zb7nx7gbde1/Yr_11_12_Maths-16_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/5h29fm9lbw7v/Yr_11_12_Maths-16_DVD_zip

Video

https://youtu.be/LGLHqnoVeS8

Chemistry

Yr 11+12 Chemistry-10B –Heavy Metal Pollution ofWater **Chemistry (507) Y11+12 to Chemistry (541) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/3ybo7fsparon/Yr_11_12_Chemistry_10B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/2dbgudauuujh/Yr_11_12_Chemistry_10B_DVD_zip

Video

https://youtu.be/IhJEjJpz11s

Design & Technology

Yr 11+12 Design & Technology 17- Evaluation **DesignTech (489) Y11+12 to Design Tech (517) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/yfisrp2mvp9/Yr_11_12_Design_amp_Technology_17_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/6wttf2utmwuf/Yr_11_12_Design_amp_Technology_17_DVD_zip

Video

https://youtu.be/98hxD-tn-Xs

Software Design

Yr 11+12 Software Design -8A–Defining problem andsolution **Software (531) Y11+12 to Software (566) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/ajj1hxfw091/Yr_11_12_Software_Design_8_A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/1rpqkmnlk6h3/Yr_11_12_Software_Design_8_A_DVD_zip

Video

https://youtu.be/tvv3Qp_2HQ8

Year 11+12 WEEK 19

Mathematics

Yr 11+12 Maths-17 –Integration + Application ofCalculus **Maths (308) Yr11+12 to Maths (328) Yr 11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/1feczcppc8rp/Yr_11_12_Maths-17_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/66zpfudn8wxp/Yr_11_12_Maths-17_DVD_zip

Video

https://youtu.be/hD6b2SBJ0Fs

Chemistry

Yr 11+12 Chemistry-6A –Natural & manufactured acid

Link for power-points to view with computer	http://www.filefactory.com/file/s9awfdx5zgf/Yr11_12_Chemistry_6A_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/7iid164ww3wp/Yr11_12_Chemistry_6A_DVD_zip

Video

https://youtu.be/Fz6PeH8yokI

Design & Technology

Yr 11+12 Design & Technology-14B –Managers and management style

Link for power-points to view with computer	http://www.filefactory.com/file/87kbzfu8rfp/Yr_11_12_Design_amp_Technology_14B_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/65lmctlgowad/Yr_11_12_Design_amp_Technology_14A_DVD_zip

Video

https://youtu.be/9qgLkRtvWTY

Software Design

Yr 11+12 Software Design -8–Selection of software environment / Documentdesign **Software (567) Y11+12 to Software (587) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/6mwk40xbe5wh/Yr_11_12_Software_Design_8_PPT_zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/284oyustjbrp/Yr_11_12_Software_Design_8_B_DVD_zip

Video

: https://youtu.be/CrFG2YFFnuQ

Year 11+12 WEEK 20

Mathematics

Yr 11+12 Maths-18 –Application of Calculus **Maths (329) Yr11+12 to Maths (330) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/14knjfblvz8n/Yr_11_12_Maths-18_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/65yzawq56mp5/Yr_11_12_Maths-18_DVD_zip**

Video

https://youtu.be/I5M3dwR-c-E

Design & Technology

Yr 11+12 Design & Technology-18A –Innovation **DesignTech (518) Y11+12 to Design Tech (524) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/4iffbwlx7pp/Yr_11_12_Design_amp_Technology_18A_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/g3esevp48tt/Yr_11_12_Design_amp_Technology_18A_DVD_zip**

Video

https://youtu.be/PtzEaqUQoEQ

Year 11+12 WEEK 21

Mathematics

Yr 11+12 Maths-19 –Simple Harmonic Oscillation **Maths (331) Yr11+12 to Maths (344) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/179d2suvngub/Yr_11_12_Maths-19_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/1z85ofskm553/Yr_11_12_Maths-19_DVD_zip**

Video

https://youtu.be/_zb8d71E-QU

ttps://youtu.be/OQCjs7CsMy8

Design & Technology

Yr 11+12 Design & Technology 18B Elements of innovation **DesignTech (525) Y11+12 to Design Tech (568) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/31qxw5hqxg3b/Yr_11_12_Design_amp_Technology_18B_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/55flvrehiy9p/Yr_11_12_Design_amp_Technology_18B_DVD_zip**

Video

https://youtu.be/mqluRwTe7yA

Software Design

Yr 11+12 Software Design-9A –Generation of programming languages **Software (588) Y11+12 to Software (593) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/660f3qzhf7cj/Yr_11_12_Software_Design_9A_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/23ia1egfwcq7/Yr_11_12_Software_Design_9A_DVD_zip**

Video

https://youtu.be/li0qJAO-CfA

Year 11+12 WEEK 22

Mathematics

Yr 11+12 Maths 20 –Projectile Motion **Maths (344) Yr11+12 to Maths (360) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/2430m1081vp9/Yr_11_12_Maths-20_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/1f5qaf3mdmk9/Yr_11_12_Maths-20_DVD_zip**

Video

https://youtu.be/ZoFwF8xlxHA

Design & Technology

Yr 11+12 Design & Technology -14B–Manager + Management Style

Link for power-points to view with computer	**http://www.filefactory.com/file/1epo015zxn5f/Yr_11_12_Design_amp_Technology_14B_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/4ja1xmdsbcrb/Yr_11_12_Design_amp_Technology_14B_DVD_zip**

Software Design

Yr 11+12 Software Design 9B History of programming languages **Software (594) Y11+12 to Software (602) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/6ejt9gs5t5wt/Yr_11_12_Software_Design_9B_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/4uirof432wzr/Yr_11_12_Software_Design_9B_DVD_zip**

Video

https://youtu.be/BMmEjoHh3fM

Year 11+12 WEEK 23

Mathematics

Yr 11+12 Maths 21 –Binomial Theorem **Maths (361) Yr11+12 to Maths (370) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/6ornn5mjue9j/Yr_11_12_Maths-21_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/4e8i727b0hcv/Yr_11_12_Maths-21_DVD_zip**

Video

https://youtu.be/BTGRHmEG5d0

Design & Technology

Yr 11+12 Design & Technology-19 –Emerging Technologies **DesignTech (569) Y11+12 to Design Tech (591) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/3sj0wrre1c4j/Yr_11_12_Design_amp_Technology_19_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/1d3ax76mlffp/Yr_11_12_Design_amp_Technology_19_DVD_zip**

Video

https://youtu.be/9k3wlaipqSU

Software Design

Yr 11+12 Software Design -10A–Representation of ComputerData **Software (603) Y11+12 to Software (626) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/4c5bf6m8uh6f/n/Yr_11+12_Software_Design_10A_PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/60wacfsz8mcv/n/Yr_11+12_Software_Design_10A_DVD.zip

Year 11+12 WEEK 24

Mathematics

Yr 11+12 Maths-22 –Probability+ Binomial Distribution **Maths (371) Yr11+12 to Maths (387) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/4y86h0clohzx/Yr_11_12_Maths-22_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/70na80rd5gp7/Yr_11_12_Maths-22_DVD_zip**

Video

https://youtu.be/Lw75Cy0fzHc

Design & Technology

Yr 11+12 Design & Technology 20A Impact of design activities on individual society &environment **DesignTech (600) Y11+12 to Design Tech (610) Y11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/uqhntvm31ch/Yr_11_12_Design_amp_Technology_20A_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/jkqqjjbpf01/Yr_11_12_Design_amp_Technology_20A_DVD_zip**

Video

https://youtu.be/RbxiFlcA3Co

Software Design

Yr 11+12 Software Design 10B –Logic Gates **Software (627) Y11+12 to Software (643) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/3mcp51i5944n/n/Software_Design_10B-Yr_11+12_PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/53qryli3a6vr/Yr%2011%2B12%20Software%20Design%2010B%20DVD.zip

Year 11+12 WEEK 25

Mathematics

Yr 11+12 Maths 23–Changing Recurring Decimals in to Fractions **Maths (388) Yr11+12 to Maths (393) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/xf07txproj9/Yr_11_12_Maths-23_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/6t4t60pzt5cl/Yr_11_12_Maths-23_DVD_zip**

Video

https://youtu.be/F4jP4NVeiW0

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Yr 11+12 Maths 24 –Simplifying Algebraic Expression **Maths (394) Yr11+12 to Maths (415) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/34joaxfp0oy5/Yr_11_12_Maths-24_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/5wo1f7od9jij/Yr_11_12_Maths-24_DVD_zip**

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https://youtu.be/fvqNKi-dSyU

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Design & Technology

Yr 11+12 Design & Technology 20B –Water Pollution

Link for power-points to view with computer	http://www.filefactory.com/file/39g4tunul0kl/n/Yr_11+12_Design_&_Technology_20B_PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/3n07czpw9s6v/n/Yr_11+12_Design_&_Technology_20B_DVD-.zip

Year 11+12 WEEK 26

Mathematics

Yr 11+12 Maths 25 Solving simultaneous equations **Maths (416) Yr11+12 to Maths (434) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/4ot380b8ql61/Yr_11_12_Maths-25_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/a7cugmrmrxf/Yr_11_12_Maths-25_DVD_zip**

Video

https://youtu.be/bLRBZcM-zsk

Design & Technology

Yr 11+12 Design & Technology 21A–Innovation Case Studies **DesignTech (612) Y11+12 to Design Tech (630) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/4z1rv9094we5/n/Yr_11+12_Design_&_Technology_21A_PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/6pjkgeddlopf/n/Yr_11+12_Design_&_Technology_21A_DVD.zip

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Year 11+12 WEEK 27

Mathematics

Yr 11+12 Maths 26 –Percentage , discount **Maths (435) Yr11+12 to Maths (438) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/pk10t382sev/Yr_11_12_Maths-26_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/3fjp69sfat7p/Yr_11_12_Maths-26_DVD_zip**

Video

https://youtu.be/9DzrWJHKLBQ

Design & Technology

Yr 11+12 Design & Technology 21B Innovation Case Studies- Designer Aspect

Link for power-points to view with computer	http://www.filefactory.com/file/3bh2uw1rzu49/Yr%2011%2B12%20Design%20%26amp%3B%20Technology%2021B%20PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/298r39a9v5c1/Yr%2011%2B12%20Design%20%26amp%3B%20Technology%2021B%20DVD.zip

Year 11+12 WEEK 28

Mathematics

Yr 11+12 Maths 27 –Geometry problems solving **Maths (439) Yr11+12 to Maths (461) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/43jcevdm003p/Yr_11_12_Maths-27_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/59fpk2rabza7/Yr_11_12_Maths-27_DVD_zip**

Video

https://youtu.be/jLHR9lP5sTQ

Design & Technology

Yr 11+12 Design & Technology 22A–Major Design Project **DesignTech (611) Y11+12 to Design Tech (635) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/4ndif2bw2ht/Yr%2011%2B12%20Design%20%26amp%3B%20Technology%2022A%20PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/72q8hgh2n9x1/Yr%2011%2B12%20Design%20%26amp%3B%20Technology%2022A%20DVD.zip

Year 11+12 WEEK 29

Mathematics

Yr 11+12 Maths 28– Trigo function values **Maths (462) Yr11+12 to Maths (485) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/65jy4gle19u7/Yr_11_12_Maths-28_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/4pokmrn7g6jd/Yr_11_12_Maths-28_DVD_zip**

Video

https://youtu.be/5iMZP3dAHs8

Design & Technology

Yr 11+12 Design & Technology 22B-Major Design Project Development/ Evaluation **DesignTech (631) Y11+12 to Design Tech (635) Y11+12**

Link for power-points to view with computer	http://www.filefactory.com/file/aqvihlnau3h/Yr%2011%2B12%20Design%20%26amp%3B%20Technology%2022B%20PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/3zbwoyululqt/Yr%2011%2B12%20Design%20%26amp%3B%20Technology%2022B%20DVD.zip

Year 11+12 WEEK 30

Mathematics

Yr 11+12 Maths 29–Trigo ratio values **Maths (486) Yr11+12 to Maths (498) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/18991tr7g45f/Yr_11_12_Maths-29_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/4zk5dsf70w4n/Yr_11_12_Maths-29_DVD_zip**

Video

https://youtu.be/ABEJoLGBntk

Mathematics

Yr 11+12 Maths 30–Trigo problems, angle of elevation **Maths (499) Yr11+12 to Maths (509) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/3lmbazk8wbs5/Yr_11_12_Maths-30_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/xogavbtwwad/Yr_11_12_Maths-30_DVD_zip**

Video

https://youtu.be/UU2OO8iW2nk

Mathematics

Yr 11+12 Maths31 – XY Linegradient **Maths (510) Yr11+12 to Maths (527) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/2aeim6pg4nh9/Yr_11_12_Maths-31_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/4el94w5jfdt1/Yr_11_12_Maths-31_DVD_zip**

Video

https://youtu.be/IwoTQF7lhSI

Mathematics

Yr 11+12 Maths 32 - Mid points between points **Maths (528) Yr11+12 to Maths (551) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/io9ru2073ab/Yr_11_12_Maths-32_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/6yotutffllmf/Yr_11_12_Maths-32_DVD_zip**

Video

https://youtu.be/FTr_FM61jwE

Year 11+12 WEEK 31

Mathematics

Yr 11+12 Maths 33 Angle of inclination / Graphs of functions **Maths (552) Yr11+12 to Maths (571) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/2s2kljhr0q81/Yr_11_12_Maths-33_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/33jle77fwobz/Yr_11_12_Maths-33_DVD_zip**

Video

https://youtu.be/uZxfV88QXIg

Mathematics

Yr 11+12 Maths 34 Locus & Parabola **Maths (572) Yr11+12 to Maths (591) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/6pay81v88n4d/Yr_11_12_Maths_34_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/2us0hu2hfgxl/Yr_11_12_Maths_34_DVD_zip**

Video

https://youtu.be/nggwEsSMNIM

Mathematics

Yr 11+12 Maths 35 Series **Maths (592) Yr11+12 to Maths (609) Yr 11+12**

Link for power-points to view with computer	**http://www.filefactory.com/file/4hpyadfa4cwf/Yr_11_12_Maths_35_PPT_zip**
Link for JPEG+MP3 to view with portable DVD Player	**http://www.filefactory.com/file/31u9lg41u8ml/Yr_11_12_Maths_35_DVD_zip**

Video

https://youtu.be/sj6NW_p-N-w

Mathematics

Yr 11+12 Maths 36 Tangent & Derivatives of Functions

Link for power-points to view with computer	http://www.filefactory.com/file/t4r1mdf419b/n/Yr_11+12_Maths_36_PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/5rgb9jnqt8ux/n/Yr_11+12_Maths_36_DVD.zip

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Year 11+12 WEEK 32

Mathematics

Yr 11+12 Maths 37 Application of Geometrical Properties

Link for power-points to view with computer	http://www.filefactory.com/file/4ipyz5fhzeyz/Yr%2011%2B12%20Maths%2037%20PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/66ya3szp93tx/n/Yr_11+12_Maths_37_DVD.zip

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Mathematics

Yr 11+12 Maths 38 –Co-ordinate Methods in Geometry

Link for power-points to view with computer	http://www.filefactory.com/file/3wfehbei6qlt/Yr%2011%2B12%20Maths%2038%20PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/5zlb4nz56baf/n/Yr_11+12_Maths_38_DVD.zip

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Mathematics

Yr 11+12 Maths 39 Plotting graph/ Maxima & Minima

Link for power-points to view with computer	http://www.filefactory.com/file/43zytpqn0tet/Yr%2011%2B12%20Maths%2039%20PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/4zz8aah5h7tj/n/Maths_(39)Yr11+12_DVD.zip

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Mathematics

Yr 11+12 Maths 40 Definite Integral

Link for power-points to view with computer	http://www.filefactory.com/file/72b2j2bvxtbd/Yr%2011%2B12%20Maths%2040%20PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/3fw00doi1tyr/Yr%2011%2B12%20Maths%2040%20DVD.zip

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Year 11+12 WEEK 33

Mathematics

Yr 11+12 Maths 41 Exponential & Logarithmic Functions

Link for power-points to view with computer	http://www.filefactory.com/file/34u19woalnkj/Yr%2011%2B12%20Maths%2041%20PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/27a9ajkzn3lr/Yr%2011%2B12%20Maths%2041%20DVD.zip

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Mathematics

Yr 11+12 Maths 42 Trigonometric Functions

Link for power-points to view with computer	http://www.filefactory.com/file/4tmhsqbrvivh/Yr%2011%2B12%20Maths%2042%20PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/67r8oe8b1jfl/Yr%2011%2B12%20Maths%2042%20DVD.zip

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Mathematics

Yr 11+12 Maths 43 Application of calculus to physical world

Link for power-points to view with computer	http://www.filefactory.com/file/18sumh0xp0jn/Yr%2011%2B12%20Maths%2043%20PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/16ngeyiyrk67/Yr%2011%2B12%20Maths%2043%20DVD.zip

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Mathematics

Yr 11+12 Maths 44 Probability

Link for power-points to view with computer	http://www.filefactory.com/file/cut4a2rskut/Yr%2011%2B12%20Maths%2044.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/j8swp5ju5ih/Yr%2011%2B12%20Maths%2044%20DVD.zip

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Mathematics

Yr 11+12 Maths 45 Application of series

Link for power-points to view with computer	http://www.filefactory.com/file/numpzwkt5pz/Yr%2011%2B12%20Maths%2045%20PPT.zip
Link for JPEG+MP3 to view with portable DVD Player	http://www.filefactory.com/file/1qnmy5qmjfcl/Yr%2011%2B12%20Maths%2045%20DVD.zip

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EXERCISES

www.highlightcomputer.com/Y9101112Exercises.pdf

IQY Technical College

www.iqytechnicalcollege.com

Systematic Zumba Training by Official Certified Zuma Instructor (ZIN)

By Daw Hla Myat Mon

Official Zumba Instructor Certificate (Basic Steps Level 1)

(Date of Qualified 4 November 2017)

www.iqytechnicalcollege.com/zumba.htm

List

337-Mega Mix 61 - 01 La Chica Coqueta - Merengue.mp3

337-Mega Mix 61 - 02 Peligro - Salsa.mp3

337-Mega Mix 61 - 03 Me Enamore - Cumbia.mp3

337-Mega Mix 61 - 04 Voodoo Song - Reggaeton.mp3

337-Mega Mix 61 - 05 Ataque Do Bum Bum - Funk Carioca.mp3

337-Mega Mix 61 - 06 Higher - Dancehall.mp3

337-Mega Mix 61 - 07 Muevete - Electro-Swing.mp3

337-Mega Mix 61 - 08 La Cantua - Moombahton.mp3

337-Mega Mix 61 - 09 Rale Pa - Soca.mp3

337-Mega Mix 61 - 10 Chugether - Euroton.mp3

337-Mega Mix 61 - 10 Chugether - Euroton.mp3

01 Tiki Tiki Babeloo (Zumba Remix).mp3

07 Brazilian Carnaval (Samba).mp3

dj malboro - new funk.mp3

dj mendez dale cuerda a la cadera prod zumba fitness - [].mp3

Dom_Omar-Taboo.mp3

El_Chevo-Metela_Sacala_Zumba.mp3

MC_Kevinho_-_Olha_a_Explos_o_(mp3.pm).mp3

Shakira - Bamboo.mp3

Shakira - Chantaje ft. Maluma (1).mp3

Shaky Shaky - Daddy Yankee.mp3

Zumba_Fitness-Portunol.mp3

323-ZIN Volume 69 - 04 Que Sera - Merengue.mp3

323-ZIN Volume 69 - 05 Mi Vecina - Salsa.mp3

323-ZIN Volume 69 - 06 Manual de Trucos - Merengue

Urbano.mp3

323-ZIN Volume 69 - 07 Green Light - Dancehall.mp3

323-ZIN Volume 69 - 08 Lo Que Tienes Tu - Cumbia Villera-Tango.mp3

323-ZIN Volume 69 - 09 Baila Conmigo - Moomba Trap.mp3

323-ZIN Volume 69 - 10 Can U Keep Up - Soca.mp3

323-ZIN Volume 69 - 11 Subelo - Reggaeton.mp3

331-ZIN Volume 70 - 04 One Love-Na Na Na - Salsa.mp3

331-ZIN Volume 70 - 05 We Run The Place - Merengue Soca.mp3

331-ZIN Volume 70 - 06 Cumbia De La Gaita - Cumbia.mp3

331-ZIN Volume 70 - 07 Roxanne - Bachata.mp3

331-ZIN Volume 70 - 08 Mete Danca - Brazilian Funk.mp3

331-ZIN Volume 70 - 09 Ponteme - Dembow.mp3

331-ZIN Volume 70 - 10 Thats What I Like - Reggaeton-Trap.mp3

331-ZIN Volume 70 - 11 Bunda - Tropic Electric.mp3

331-ZIN Volume 70 - 12 Solo Tu - Merengue Urbano.mp3

319-Mega Mix 59 - 01 Tamo Happy - Merengue.mp3

319-Mega Mix 59 - 02 Candela Pura - Salsa.mp3

319-Mega Mix 59 - 03 Ta Gozando - Cumbia.mp3

319-Mega Mix 59 - 04 Piyala - Moombahton-Bachata.mp3

319-Mega Mix 59 - 05 Drop It Like That-Zeskullz and Dual Personality Remix - Tropic Electric.mp3

319-Mega Mix 59 - 06 Sadaf Iskandarani-Drum Solo - Bellydance.mp3

319-Mega Mix 59 - 07 Rumba De La Buena - Salsaton.mp3

319-Mega Mix 59 - 08 La Cintura - Merengue Urbano.mp3

319-Mega Mix 59 - 09 Lento y Awawo - Reggaeton.mp3

319-Mega Mix 59 - 10 Naked Truth - Cooldown.mp3

329-Mega Mix 60 - 01 Plakata - Electronic.mp3

329-Mega Mix 60 - 02 Guallando - Merengue.mp3

329-Mega Mix 60 - 03 Zumbea - Salsa.mp3

329-Mega Mix 60 - 04 Si No Vuelves - Reggeaton.mp3

329-Mega Mix 60 - 05 Trocitos de Madera - Cumbia.mp3

329-Mega Mix 60 - 06 Bailando Soca - Soca.mp3

329-Mega Mix 60 - 07 Heroe Favorito - Bachata.mp3

329-Mega Mix 60 - 08 Como La Manana - Champeta.mp3

329-Mega Mix 60 - 09 Booma - Kuduro.mp3

329-Mega Mix 60 - 10 No Se Pudo - Cooldown.mp3