Bachelor of Applied Engineering (Electrical+ Electronics) with Advanced Certificate in Electrical & Electronics Trade Studies international degree recognized by Professional Associations in Australia and Singapore. (Entire program by online, simulated online practical and fulfilling practical performance with competency guidelines)

Bachelor of Applied Engineering (Electrical+ Electronics) with Advanced Certificate in Electrical & Electronics Trade Studies has been designed for Electricians , Electrical Trade Persons and Electrical Apprentices to complete Advanced Studies in Electrical and Electronics Trade Studies and then proceed to Diploma, Advanced Diploma and Bachelors Degree which is international degree recognized by Singapore Institute of Engineering Technologists to use in Singapore and ASEAN and The Society of Professional Engineers International to issue Professional Engineer International designation.

Those who possess Professional Engineer International with 7 years experience can then apply for APEC Engineer Certificate issued by APEC Region Monitoring Committee of The Society of Professional Engineers International. APEC Engineer Certificate is recognized in Australia, New Zealand, Japan, Korea ,USA and several other APEC Countries.

Course Outline

The following subjects with competencies units are included in Certificate in Electrical Engineering Trade , Advanced Certificate in Electrical Electronics Studies and Advanced Diploma in Electrical Engineering.

Course Structure

Year 1- Certificate IV in Electrical and Electronics Trades Studies

Year 2-Diploma/ Advanced Diploma in Electrical and Electronics Engineering'

Year 3+4 Bachelor of Applied Engineering (Electrical and Electronics)

Each Years will have 2 Semesters.

Detailed Course Structure and Mapping to Competencies units can be seen below

Year 1 Certificate in Electrical Engineering Trade (24 credits

EEA101 Electrical Safety (2 Cp)

EEA102 Electrical Workshop (2 Cp)

EEA103 Electrical Circuits (2 Cp)

EEA104 Electrical Drawing & Control Circuit Development (2 Cp)

EEA105 Electrical Equipment (2 Cp)

EEA106 Electrical Wiring (2 Cp)

EEA107 Electrical Machines (2 Cp)

EEA108 Electrical Operation (2 Cp)

EEA109 Electrical Competency and Sustainability(2 Cp)

EEA110 Electrical Capstone (6 Cp)

Year 1-Advanced Certificate in Electrical Electronics Studies (6 Credits)

EEA201 DC Power Supply (2 Cp)

EEA202 Digital Electronics (2 Cp)

EEA203 Analogue Electronics (2 Cp)

TOTAL CREDITS FOR COMPLETION OF ADVANCED CERTIFICATE IN ELECTRICAL ELECTRONICS STUDIES IS 30 CREDITS

Year 2-Advanced Diploma in Electrical Engineering (30 credits

EEA301 Engineering Competency Development (1 Cp)

EEA302 Engineering Materials (1 Cp)

EEA303 Engineering Physics (2 Cp)

EEA304 Engineering Project (2 Cp)

EEA305 Risk Analysis and WHS (1 Cp)

EEA306 Electrical Circuit Analysis (2 Cp)

EEA307 Engineering Mathematics (2 Cp)

EEA308 Computer Applications (1 Cp)

EEA309 Sustainability (1 Cp)

EEA310 Solar Electrical System (2 Cp)

EEA311 Power System Principle (2 Cp)

EEA312 Power System Protection (2 Cp)

EEA313 Power Transmission (2 Cp)

EEA314 Electrical Machines (2 Cp)

EEA315 Energy Efficiency (2 Cp)

Part 2-Electronics

EEA316 Power Industrial Electronics and Control (2 Cp)

EEA317 Industrial Process Control (2 Cp)

EEA318 Engineering Report Writing (1 Cp)

TOTAL CREDITS FOR COMPLETION OF ADVANCED DIPLOMA IN ELECTRICAL ELECTRONICS ENGINEERING IS 60 CREDITS

Year 3+4 Bachelors Degree Studies (60 Credit Points)

Year 3-Bachelor of Applied Engineering –(Electrical Electronics) Part 1

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

The students can get Bachelor of Technology (Electrical Electronics) by paying (A$300 degree award fees)

Year 4-Bachelor of Applied Engineering –(Electrical Electronics) Part 2

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) .....

TOTAL CREDITS FOR COMPLETION OF BACHELOR OF APPLIED ENGINEERING (ELECTRICAL ELECTRONICS) IS 120 CREDITS

Please see the link

Year 1 Part 1-Electrical Engineering Certificate +

http://www.highlightcomputer.com/UEE11-20Mapping.pdf

Certificate in Electrical Engineering will be issued on completion of the following units which are aligned with CIII Electrotechnology-Electrician (UEE30820) as we design the course independently, we do not issue with CIII Electrotechnology-Electrician (UEE30820).

Subjects and Competency Units (UEE20 and successor training package mappings)

EEA101 Electrical Safety

Electrical Engineer Workshop Practice 1/2/3

HLTAID001 Provide cardiopulmonary resuscitation

UEECD0007 Apply work health and safety regulations, codes and

practices in the workplace

UEECD0016 Document and apply measures to control WHS risks

associated with electrotechnology work*

EEA102 Electrical Workshop

Electrical Engineer Workshop Practice 1/2/3

UEECD0019 Fabricate, assemble and dismantle utilities industry components*

UEECD0020 Fix and secure electrotechnology equipment*

EEA103 Electrical Circuits

E104/G102

UEECD0044 Solve problems in multiple path circuits*

UEECD0046 Solve problems in single path circuits*

UEEEL0020 Solve problems in low voltage a.c. circuit

UEEEL0021 Solve problems in magnetic and electromagnetic devices

EEA104 Electrical Drawing & Control Circuit Development

Electrical Engineer Workshop Practice 1/2/3

Electrical Engineer Practice 1/2/3

G106+E107

UEECD0051 Use drawings, diagrams, schedules, standards, codes and specifications*

UEEEL0005 Develop and connect electrical control circuits*

EEA105 Electrical Equipment

Electrical Engineer Practice 1/2/3

Electrical Engineer Trade Practice 1/2/3

UEEEL0003 Arrange circuits, control and protection for electrical installations*

UEEEL0008 Evaluate and modify low voltage heating equipment and controls*

UEEEL0009 Evaluate and modify low voltage lighting circuits, equipment and controls*

EEA106 Electrical Wiring

Electrical Engineer Practice 1/2/3

Electrical Engineer Trade Practice 1/2/3

EEEL0010 Evaluate and modify low voltage socket outlets circuits*

UEEEL0012 Install low voltage wiring, appliances, switchgear and associated accessories*

UEEEL0014 Isolate, test and troubleshoot low voltage electrical circuits

UEEEL0018 Select wiring systems and select cables for low voltage electrical installations

UEEEL0023 Terminate cables, cords and accessories for low voltage circuits*

EEA107 Electrical Machines

G101+G006

UEEEL0019 Solve problems in direct current (d.c.) machines

UEEEL0024 Test and connect alternating current (a.c.) rotating machines*

UEEEL0025 Test and connect transformers*

EEA108 Electrical Operation

Electrical Engineer Practice 1/2/3

UEEEL0047 Identify, shut down and restart systems with alternate supplies*

UETTDRRF06 Perform rescue from a live LV panel*

EEA109 Electrical Competency and Sustainability

Electrical Engineer Practice 1/2/3

UEECO0023 Participate in electrical work and competency development activities

UEERE0001 Apply environmentally and sustainable procedures in the energy sector

EEA110 Electrical Capstone

Electrical Capstone

UEEEL0039 Design, install and verify compliance and functionality of general electrical installations*

Year 1 Part 2 Advanced Certificate in Electrical and Electronics Trade

EEA201 DC Power Supply

UEENEEH011B - Troubleshoot d.c. power supplies with single phase input

(UEEEC0075 Troubleshoot single phase input d.c power supplies*)

EEA202 Digital Electronics

UEENEEH012B - Troubleshoot digital subsystems

UEEEC0069 Troubleshoot digital sub-systems*

EEA203 Analogue Electronics

UEENEEH013B - Troubleshoot amplifiers

Year 2 Advanced Diploma in Electrical Electronics Engineering

(UEE20 and successor training package mappings)

Part 1-Electrical

http://www.highlightcomputer.com/UEE11-20Mapping.pdf

EEA301 Engineering Competency Development

Advanced Diploma -Engineering Competency Development Lessons

UEECD0003 Apply industry and community standards to engineering activities

UEECD0017 Establish and follow a competency development plan in an electrotechnology engineering discipline

UEECD0056 Apply methods to maintain currency of industry

EEA302 Engineering Materials

Advanced Diploma -Engineering Materials Lessons

UEECD0004 Apply material science to solving electrotechnology engineering problems

EEA303 Engineering Physics

Advanced Diploma -Engineering Physics Lessons

UEECD0005 Apply physics to solving electrotechnology engineering problems

EEA304 Engineering Project

Advanced Diploma -Engineering Project Lessons

UEECD0014 Develop design briefs for electrotechnology projects

UEEEL0015 Manage large electrical projects

UEEEL0058 Plan large electrical projects

UEECD0059 Write specifications for electrical engineering projects

EEA305 Risk Analysis and WHS

Advanced Diploma -OHS Lessons

UEECD0024 Implement and monitor energy sector WHS policies and procedures

UEECD0026 Manage risk in electrotechnology activities

EEA306 Electrical Circuit Analysis

Advanced Diploma -Electrical Circuits Lessons

UEECD0036 Provide engineering solutions for problems in complex multiple path circuits

UEEEL0062 Provide engineering solutions to problems in complex polyphase power circuits

EEA307 Engineering Mathematics

Advanced Diploma -Engineering Mathematics Lessons

UEECD0039 Provide solutions to basic engineering computational problems*

EEA308 Computer Applications

Advanced Diploma -Computer Applications Lessons

UEECS0033 Use engineering applications software on personal computers

EEA309 Sustainability

Advanced Diploma -Sustainability Lessons

UEERE0013 Develop strategies to address environmental and sustainability issues in the energy sector

EEA310 Solar Electrical System

Advanced Diploma -Solar Electrical System Lessons

UEERE0016 Install, configure and commission LV grid-connected photovoltaic power systems*

UEENEEK135A - Design grid connected photovoltaic power supply systems

EEA311 Power System Principle

Advanced Diploma -Power System/Electrical Distribution/Power System Analysis/Power System Operations Lessons

UETTDRIS67 Solve problems in energy supply network equipment*

UETTDRIS69 Diagnose and rectify faults in energy supply apparatus

EEA312 Power System Protection

Advanced Diploma -Power System Protection Lessons

UETTDRIS68 Solve problems in energy supply network protection equipment and systems

UETTDRIS74 Develop engineering solutions for energy supply system protection problems

EEA313 Power Transmission

Advanced Diploma -Power Transmission Lessons

UETTDRIS71 Diagnose and rectify faults in electrical energy supply transmission systems*

EEA314 Electrical Machines

Advanced Diploma -Electrical Machines Lessons

UEEEL0043 Develop engineering solutions for induction machine and control problems*

UETTDRIS73 Develop engineering solutions for energy supply power transformer problems*

UEEIC0017 Diagnose and rectify faults in d.c. motor drive systems*

UEEIC0016 Diagnose and rectify faults in a.c. motor drive systems*

UEEEL0043 Develop engineering solutions for induction machine and control problems*

EEA315 Energy Efficiency

Advanced Diploma -Energy Efficient Building Design Lessons

UEERE0012 Develop effective engineering strategies for energy reduction in buildings*

Also See Advanced Diploma in Electrical Engineering+ Engineering Technology Electrical

Part 2-Electronics

(UEE20 and successor training package mappings)

EEA316 Power Industrial Electronics and Control

UEEIC0040 Solve problems in polyphase electronic power control circuits*

UEEIC0042 Solve problems in single phase electronic power control

UEEIC0005 Configure and maintain industrial control system networks*

UEENEEH025B - Provide solutions to single phase electronic power control problems

UEENEEH026B - Provide solutions to polyphase electronic power control problems

EEA317 Industrial Process Control

UEENEEI006B - Solve problems in process controllers, transmitters and converters

UEENEEI124A Fault find and repair analogue circuits and components in electronic control systems

UEENEEI129A - Set up electronically controlled mechanically operated complex systems

UEENEEI148A - Solve problems in single phase electronic power control circuits

UEENEEI120A - Provide solutions to problems in industrial control systems

EEA318 Engineering Report Writing

UEECD0010 Compile and produce an energy sector detailed report

Year 3 Bachelor of Technology in Electrical & Electronics Engineering

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

Year 4 Bachelor of Applied Engineering in Electrical & Electronics Engineering

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) .....

Additional Information

The course includes several self study short courses .

http://www.highlightcomputer.com/BachelorAppliedEngg+Electrical-ElectronicsTradeResources.htm#b

Mapping to Electrical Training Package Units

http://www.highlightcomputer.com/BachelorAppliedEngg+Electrical-ElectronicsTradeResources.htm#c

UEE11-UEE20 Mapping

http://www.highlightcomputer.com/UEE11-20Mapping.pdf

Course Design Principle

This is only type of course that combines both Electrician/ Electronic Technician Skills and Advanced Diploma and Degree.

The course design is based on Australian Electrical Training Packages UEE11 and UEE20 . The course contents include and combine the appropriate training package competency units . But to deliver the course without limitation and restriction imposed by ASQA , we do not design the course with ASQA Recognition but the course was designed to meet the accreditation of Singapore Institute of Engineering Technologists (SIET) and The Institution of Professional Engineers Myanmar which is Member of International Federation for Engineering Education Societies (IFEES-USA) as well as International Vocational Education and Training Association (IVETA-USA) and

International Association of Distance Learning (IADL).

Conversion of this qualification to Australian Recognition

Although this qualification is not direct Australian qualification and the degree is not Australian degree, it can be converted to Australian qualification as follows

- On completion of 4 Years degree courses, the candidates will be issued with

    1. Professional Diploma in Engineering by IQY Technical College

        Which is accredited by Singapore Institute of Engineering Technologists (SIET)

    2. Bachelor of Engineering by IPEM Technological University which is also accredited by Singapore Institute of Engineering Technologists (SIET)

- Then the candidate can apply for Member of Singapore Institute of Engineering Technologists (MSIET) at Engineering Technologists Level

- Then apply for Technologist Member or Engineering Officer Member of The Institution of Engineers Australia by submitting Engineering Competency Demonstration Report and by submitting MSIET Certificate.

- In industry, real skills , knowledge and competencies are demanded by employers so the skills, knowledge and competencies gained in this course can be utilized in industry.

Why we design the course

There have been a lot of Electricians who can not proceed their skills to Diploma, Advanced Diploma and Degree levels.

Only competence in basic trade skills but lack of advanced training prohibits the industrial competency of Australia at International Level.

Although TAFE-NSW is main provider of Vocational Education, continuous scrapping of the courses, closures of engineering sections, large fees which is beyond the affordability of the students to study the diploma and advanced diploma in electrical engineering and frequent change of training packages causing that the students who did not complete the courses in certain time limit will find themselves what to do when they return back to the studies.

For this reason, instead of asking the TAFE to maintain the affordable training to the electricians, electrical tradespersons and electrical apprentices, designing and arranging the course for them to develop their skills and knowledge from Electrician Licence to diploma, advanced diploma and degree level.

Course Fees.

Before smart and skills, the students paid A$750 per semester regardless of how many units they were undertaking. Now to complete the diploma courses, nearly $30000 has to be paid.

We go back to course fees level before smart and skills.

The students will do the course by online, do simulated practical at the fees A$750 per semester regardless of how many units they were undertaking.

For recipient of social security, A$200 per semester is to be charged.

Year 1 Certificate in Electrical Engineering Trade (24 credits)--- Fees A$750 ($200 for Social Security Recipients)

Year 2-Advanced Diploma in Electrical Engineering (30 credits)--- Fees A$750 ($200 for Social Security Recipients)

Year 3-Bachelor of Applied Engineering –(Electrical Electronics) Part 1 --- Fees A$750 ($200 for Social Security Recipients)

Year 4-Bachelor of Applied Engineering –(Electrical Electronics) Part 2--- Fees A$750 ($200 for Social Security Recipients)

Entry Eligibility

Electrician Licence OR CIII Electrical or Electronics Trade (Completed of incomplete) OR Electrical Apprentices/Electrical Trade Assistance/Workers in Electrical Industry

RPL

RPL will be given based on previous studies

Course Designer

Dr Kyaw Naing (U kyaw Naing or Joe) MIEAust, RPEQ(Acquired in 2005), PE(NSW Acquired in 2021), NSW Electrician Licence (Acquired in 2002)

He is President of The Institution of Professional Engineers Myanmar and has worked at Teacher of Electrical Engineering and Teacher of Electrical Trades at TAFE-NSW.

Currently working in Industry as well as teaching online.

Based on his experience as both electrician and electrical engineers and has full knowledge and experience in difficulties of electrical engineering and electrical trade students of TAFE-NSW, the course has been designed by him.

Enrolment

Online Training/ Information Section

Online Enrolment Link

https://www.emailmeform.com/builder/form/Hy0E9qedcfVa3g

Every Saturdays at 10AM Sydney time, the prospective students can join the following Google Meeting with Dr Kyaw Naing.

https://meet.google.com/jtx-ssag-rnu

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The following links contain the files of the Engineering Job competencies of ASCO (Australian Classifications of Occupations Dictionary) and IQY Technical College's arrangement of Electrical ,Civil, Mechanical Diploma and Degree Courses .Some of the courses will then be mapped to relevant Australian Training Package courses

By this way , the graduates of our Diploma and Degree Courses can then utilize their course contents to write the Engineering Competency Demonstration Report to individually apply for Engineers Australia Recognition.

There will be two steps of competency mapped to Australian Engineering Requirement .

Step 1 is that we map our course contents to ASCO job descriptions.

Step 2 is that we use our relevant materials to develop and deliver the relevant Australian Training Package courses in this case , I develop the t sources for Australian RTO.

IQY will not issue Australian award , we focus on international awards.But we work for RTO to develop their own courses and link their awards with our international programs .By this way , the graduates of Australian courses can also get the recognition by international professional organizations

Engineering Competency VS IQY Subjects for CE/EE/ME Courses

Engineering Competency VS Bachelor of Engineering Science Course of IQY

Engineering Competency VS Diploma in General Engineering of IQY

Task mapping of other engineering courses

Electrical, Mechanical and Civil are main areas of engineering. Based on them, by adding the specialized contents in other study areas, the other discipline of engineering studies are produced.

We map our Electrical, Mechanical and Civil courses to ASCO Engineering Tasks.

Depending on delivery requirement, we can then proceed to development of our other engineering courses to ASCO Engineering Tasks.