UET60221 Advanced Diploma of ESI - Power Systems

UET60222 Advanced Diploma of ESI - Power Systems

For UET60222 Design Specialization (Group B)

<table>
<tr><td>Core Units</td><td>See UET60221</td></tr>
<tr><td>1/UEECS0033 Use engineering applications software on personal computers</td><td>UEENEED104A Use engineering applications software on personal computers
http://www.iqytechnicalcollege.com/advdipit.htm</td></tr>
<tr><td>2/UETDRDS015 Assess distributed energy resource connections to a distribution network</td><td>UETDRTS015 Maintain complex network protection and control systems
https://www.nature.com/articles/srep24456
www.iqytechnicalcollege.com/srep02764.pdf</td></tr>
<tr><td>3/UETDRDS017 Design customer substations</td><td>UETDRTS017 Maintain interdependent network protection and control systems
https://ietresearch.onlinelibrary.wiley.com/doi/full/10.1049/gtd2.12177
www.iqytechnicalcollege.com/S017.pdf

https://www.pdfdrive.com/protection-of-electrical-networks-d33483131.html
http://www.iqytechnicalcollege.com/Protection of Electrical Networks (PDFDrive).pdf

https://www.pdfdrive.com/electric-power-system-planning-d39893329.html
www.iqytechnicalcollege.com/Electric-Power-System-Planning-Issues-and-Algorithms-and-Solutions.pdf</td></tr>
<tr><td>4/ UETDRDS018 Design distribution protection systems</td><td>IS68+74
<table><tr><td>UETTDRIS68</td><td>Solve problems in energy supply network protection equipment and systems</td><td>UETTDRIS68</td><td>Solve problems in energy supply network protection equipment and systems</td></tr></table>AE.zip

www.highlightcomputer.com/G015-AE Mod.zip

http://youtu.be/A5AieaBBZHo

G015(AA)Lesson 6-Voltage control.zip
http://youtu.be/y1vTM5fvfyU

http://youtu.be/Z9HBGsVgymA

G015(AE)Lesson 1-Power system protection scheme.zip
http://youtu.be/ihpd3cDAhBU

http://youtu.be/EGXkLRM2L9M

http://youtu.be/zOlUYQ7OJfs

G015(AE)Lesson 2-Differential relay.zip</td></tr>
</table>

	http://youtu.be/2iW0oEScMsw G015(AE)Lesson_3-Over_current_&_earth_fault_protection.zip http://youtu.be/hvGjdO9jEhk G015(AE)Lesson 4-Three phase differential relay.zip http://youtu.be/2iW0oEScMsw http://youtu.be/VuzjXkRx4UI http://youtu.be/2iW0oEScMsw G015(AE)Lesson 5-Current time grading.zip http://youtu.be/r0qkLrmkKsM G015AE Lesson 6 http://youtu.be/InsTLh7_N5k G015(AE)Lesson_7-CT_PT.zip http://youtu.be/ZF_y65xsM_M G015(AE)Lesson 8-Distance relay.zip http://youtu.be/NKzMVquFLu8 G015(AE)Lesson 9-Telecom in power protection.zip http://youtu.be/9C6oggZAKRg http://youtu.be/XRpffA6hU_U http://youtu.be/X-kz3cyL9fU
5/ UETDRDS019 Design distribution substations	Power system 2-G037+G038+G039.zip Power System 2 G037+G038+G039 G037+G038+G039 Part 1/2/3+IS69 Page 232 to 270 **www.highlightcomputer.com/Video Lessons.pdf** **Power System (2)** G037+G038+G039 Lesson 1-Power Flow.zip http://youtu.be/mzwGGXRTtvw G037+G038+G039 Lesson 2-Site Earthing.zip http://youtu.be/PATkXVBF9kc http://youtu.be/H4Dj1K238BE G037+G038+G039 Lesson 3-Power System Control Equipments.zip http://youtu.be/JJczbYVWOoI G037+G038+G039 Lesson 4-Auxiliary System+Harmonic.zip http://youtu.be/5mDNHGFLA0c G037+G038+G039 Lesson 5-Harmonic.zip http://youtu.be/n41q4Rmz2p0 http://youtu.be/8CeIGV5AEIk G037+G038+G039 Lesson 6-Harmonic Calculation.zip http://youtu.be/NHSzu6HkOgI http://youtu.be/fSLrPIC6Mho G037+G038+G039 Lesson 7-Synchronous Generator Loading.zip :http://youtu.be/jv1q7Mtg7Gs G037+G038+G039 Lesson 8-Turbine Control+Power Line Earthing.zip http://youtu.be/0CvgkmDE3Kw

G037+G038+G039 Lesson 9-Insulator.zip
http://youtu.be/I4jqs8MLBFA

http://youtu.be/TiQezIA9Z-c

G037+G038+G039 Lesson 10-Reliability of Power System.zip

http://youtu.be/tIUk3nc1IxE

G037+G038+G039 Lesson 11-Harmonic Reduction.zip
http://youtu.be/8dYX-11kRcc

http://youtu.be/A684Agej8-w

G037+G038+G039 Lesson 12-Grounding + Power Quality.zip
http://youtu.be/QQPUj3WXJnA

G037+G038+G039 Lesson 13-Power Quality.zip
http://youtu.be/feI7SCb_QTY

http://youtu.be/mcK2YhDsnr0

G037+G038+G039 Lesson 14-Harmonic Model.zip
http://youtu.be/dwWBOq-BsLY

G037+G038+G039 Lesson 15-Harmonic Losses in Transformer.zip

http://youtu.be/mwEJgEEgPVc

http://youtu.be/1A6FY5f5ijM

http://youtu.be/yLiOKy7uJj0

G037+G038+G039 Lesson 16-Reliability Improvement.zip

http://youtu.be/cn-CfDWnUN8

G037+G038+G039 Lesson 17-Preparation for emergency.zip
http://youtu.be/La7Xip8GI2I

G037+G038+G039 Lesson 18-Harmonic problems.zip
http://youtu.be/0Urnkee_

http://youtu.be/zM_Xcwckicw

G037+G038+G039 Lesson 19-Synchronous machine problems.zip
http://youtu.be/Lx2S-NATr20

G037+G038+G039 Lesson 20-Power Generation + Generator Control.zip
http://youtu.be/56Ks8sArQxc

G037+G038+G039 Lesson 21-Turbine Control+ Digital Excitation.zip
http://youtu.be/uCsvv18qKwQ

http://youtu.be/I4vCDI2CZS0

G037+G038+G039 Lesson 22-Power System Protection.zip
http://youtu.be/c6iXRwfCYBU
G037+G038+G039 Lesson 23-Switch Gear.zip
http://youtu.be/DDpbzgNYTiM

http://youtu.be/2cl-nOdBNro

The links contain the following lessons
G037+G038+G039 Lesson 1-Power Flow
G037+G038+G039 Lesson 2-Site Earthing
G037+G038+G039 Lesson 3-Power System Control Equipments
G037+G038+G039 Lesson 4-Auxiliary System+ Harmonic
G037+G038+G039 Lesson 5-Harmonic
G037+G038+G039 Lesson 6-Harmonic Calculation
G037+G038+G039 Lesson 7-Synchronous Generator Loading
G037+G038+G039 Lesson 8-Turbine Control+ Power Line Earthing
G037+G038+G039 Lesson 9-Insulator
G037+G038+G039 Lesson 10-Reliability of Power System
G037+G038+G039 Lesson 11-Harmonic Reduction
G037+G038+G039 Lesson 12-Grounding + Power Quality

	G037+G038+G039 Lesson 13-Power Quality G037+G038+G039 Lesson 14-Harmonic Model G037+G038+G039 Lesson 15-Harmonic Losses in Transformer G037+G038+G039 Lesson 16-Reliability Improvement G037+G038+G039 Lesson 17-Preparation for emergency G037+G038+G039 Lesson 18-Harmonic problems G037+G038+G039 Lesson 19-Synchronous machine problems G037+G038+G039 Lesson 20-Power Generation + Generator Control G037+G038+G039 Lesson 21-Turbine Control+ Digital Excitation G037+G038+G039 Lesson 22-Power System Protection G037+G038+G039 Lesson 23-Switch Gear
6/ UETDRDS020 Design overhead distribution systems 7/ UETDRDS022 Design underground distribution systems	AA.zip www.highlightcomputer.com/G015-AA Mod.zip G015/ IS67+68+ IS74 Page 196 to 231 of **www.highlightcomputer.com/Video Lessons.pdf** **Power System (1)** G015(AA)Lesson 1-Distribution system.zip http://youtu.be/VuzjXkRx4UI G015(AA)Lesson 2-Demand factor.zip http://youtu.be/cUGbxhBT-Dc http://youtu.be/DCCl4cO3Vu8 G015(AA)Lesson 3-Sag.zip http://youtu.be/1s496h-Iuu8 G015(AA)Lesson 4-OH Line mechanical design.zip http://youtu.be/T0BnyqV9T6E http://youtu.be/hu1TrUv2_OY G015(AA)Lesson 5-UG Cable.zip http://youtu.be/hHCLzMnVmT0 http://youtu.be/A5AieaBBZHo G015(AA)Lesson 6-Voltage control.zip http://youtu.be/y1vTM5fvfyU http://youtu.be/Z9HBGsVgymA
8/ UETDRDS028 Prepare and manage construction plans for electrical infrastructure	**E011+E117+E071+G169+G170** Projectplanning+management+Risk+OHS. G069+G070+E071+E011+E017.zip UEECD0026 Manage risk in electrotechnology activities UEENEEE117A Implement and monitor energy sector OHS policies and procedures UEECD0024 Implement and monitor energy sector WHS policies and procedures UEENEEE071B Write specifications for electrical engineering projects UEECD0059 Write specifications for electrical engineering projects UEENEEG169A Manage large electrical projects UEEEL0015 Manage large electrical projects UEENEEG170A Plan large electrical projects UEEEL0058 Plan large electrical projects www.highlightcomputer.com/E01124G069G070Mod.zip Project+Risk-E011+E017+G070+G069

Project Specification+ Variation

E071MEM09004

Risk Management

Project Risk Assessment and Management

Electrical Risk Assessment

http://www.mongroupsydney1.com/Electrical_Risk_Assessment.pdf

Project Management +Specification Delivery & Assessment Plan

http://www.mongroupsydney1.com/ProjectManagementSpecificationDeliveryandAssessmentPlan.doc

Project Management

E071	Electrical Contracting & Specification

G169+170	Project Management

UEENEEG169A	Manage large electrical projects	UEEEL0015	Manage large electrical projects*
UEENEEG107A	Select wiring systems and cables for low voltage general electrical installations	UEEEL0018	Select wiring systems and select cables for low voltage electrical installations*
UEENEEE071B	Write specifications for electrical engineering projects	UEECD0059	Write specifications for electrical engineering projects

E071+G069+G070 + G169+G170
Page 102 to 127 of
www.highlightcomputer.com/Video Lessons.pdf

Project Specifications+ Project Planning

The links contain the following lessons

E071+G069+G070 Lesson 1 Project management planning
http://youtu.be/VNe56RYAPyg
E071+G069+G070 Lesson 2 NSW service rule+Marketing
http://youtu.be/6D88EoKTXFA

http://youtu.be/tdr9z5WZq2w
E071+G069+G070 Lesson 3+4 Contract planning + HV conductor
http://youtu.be/k7vuQq7juNk

http://youtu.be/RyS31r1aOWQ
E071+G069+G070 Lesson 5 Project modelling
http://youtu.be/7gO57AHY-tk

http://youtu.be/IhcVELYNVYw
E071+G069+G070 Lesson 6 Job planning
http://youtu.be/QDr6ar_ZYmk

http://youtu.be/bsBVQFUtGp8

E071+G069+G070 Lesson 7 Line infrastructure + Material planning
http://youtu.be/x8-gdp3sP8Q
E071+G069+G070 Lesson 8 Problem solving and decision making
http://youtu.be/Khg1pnkBcQo
E071+G069+G070 Lesson 9 Control of project+Maintenance specialist work
http://youtu.be/eKuW5um3SR0

http://youtu.be/AA684uXyv48

http://youtu.be/6NG2Qzg4MMg
E071+G069+G070 Lesson 10 Contract bid work
http://youtu.be/4O9nAOmd4Qg
E071+G069+G070 Lesson 11 Project structure
http://youtu.be/libpIsnVNG4

	E071+G069+G070 Lesson 12 Analysing plan+ Insurance http://youtu.be/_x3oQvuAGq8 http://youtu.be/dMUAaI0A-4w E071+G069+G070 Lesson 13 Modelling project http://youtu.be/FJBVycx0vTM E071+G069+G070 Lesson 14 Project costing+Contracting paper work http://youtu.be/pOke86sLrzw http://youtu.be/2RwrkL0Phb0 http://youtu.be/I7nh4pZqnSw E071+G069+G070 Lesson 15 Change control http://youtu.be/9JR-yJx1D0w E071+G069+G070 Lesson 16 Management leadership+Job accounting http://youtu.be/EYuy1zKJ72k http://youtu.be/Ay2DyuIvVhk E071+G069+G070 Lesson 17 Management thinking+Contract management planning http://youtu.be/0LzgzKg5hu8 http://youtu.be/nrfgVQ7omfk
9/ UETDREL005 Work safely in the vicinity of live electrical apparatus	Electricity Supply Industry Safety **UETDREL006** **UETDRRF004** **UETTDRRF09** **UET60221**

http://www.iqytechnicalcollege.com/UET60221 Advanced Diploma of ESI - Power Systems.htm

UET Training Package

https://www.iqytechnicalcollege.com/UET_R3.0.pdf

CORE (820)

UEENEED104A Use engineering applications software on personal computers

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

UEENEEE083A Establish and follow a competency development plan in an electrotechnology engineering discipline

E083 Electro-technology Competency Development

E083 Electro-technology Competency Development (Electronics)

UEENEEE101A Apply Occupational Health and Safety regulations, codes and practices in the workplace 20

UEENEEE102A Fabricate, assemble and dismantle utilities industry components

UEENEEE104A Solve problems in d.c. circuits

UEENEEE107A Use drawings, diagrams, schedules, standards, codes and specifications

UEENEEG101A Solve problems in electromagnetic devices and related circuit

UEENEEG102A Solve problems in low voltage a.c. circuits

http://www.highlightcomputer.com/electricaltrade2022.htm

UEENEEG149A Provide engineering solutions to problems in complex polyphase power circuits

Power Circuit Analysis

G149	Three Phase Power Circuits

G049+G149
Page 363 to 373 of
www.highlightcomputer.com/Video Lessons.pdf

Three phase system

G049 Lesson 1 Basic three phase circuit.zip

http://youtu.be/l28eE1Te55U

G049 Lesson 2 Three phase star delta.zip

http://youtu.be/BX3-ht6DWTI

http://youtu.be/wlJucGbdHll

G049 Lesson 3 Three phase power measurement.zip

http://youtu.be/Q6kbCDGTUAI

G049 Lesson 4 Three phase 4 wires unbalanced load.zip

http://youtu.be/Ptfn5RCjdog

G049 Lesson 5 Three phase 3 wires unbalanced load.zip

http://youtu.be/uDPUhOq5qb8

G049 Lesson 6 Three phase power by 2 watt meters.zip

http://youtu.be/AI6iojMH32c

G049 Lesson 7 Three phase fault.zip

http://youtu.be/IBWI_s580yc

G049 Lesson 8 Three phase fault calculation table.zip

http://youtu.be/55ps_sdYQ5k

G049 Lesson 9 Fault calculation.zip

http://youtu.be/cr-1MR9HHow

G049 Lesson 10 Sequence network.zip

http://youtu.be/Z1MwCBY0SO4

http://youtu.be/7epZP1-0hts

The links contain the following lessons
G049 Lesson 1 Basic three phase circuit
G049 Lesson 2 Three phase star delta
G049 Lesson 3 Three phase power measurement
G049 Lesson 4 Three phase 4 wires unbalanced load
G049 Lesson 5 Three phase 3 wires unbalanced load

G049 Lesson 6 Three phase power by 2 watt meters
G049 Lesson 7 Three phase fault
G049 Lesson 8 Three phase fault calculation table
G049 Lesson 9 Fault calculation
G049 Lesson 10 Sequence network

G149	Three Phase Power Circuits

3 Phase Circuits

E125+G149
Circuit G048+E025.zip

Circuit G048+E025

www.highlightcomputer.com/Circuit G048E025G049-Mod.zip

E125	Electrical Circuits

UEENEEE125A	Provide engineering solutions for problems in complex multiple path circuits	UEECD0036	Provide engineering solutions for problems in complex multiple path circuits

Electrical Circuits 1

Electrical Circuits 2

Electrical Circuits II

E125	Electrical Circuits

E025/ G048/ E125
Page 14 to 25 of
www.highlightcomputer.com/Video Lessons.pdf

Advanced Electrical Circuits

http://www.filefactory.com/file/cf8775d/n/E025.zip

The links contain the following lessons

E025 Lesson 1 Resonance
http://youtu.be/U16XZnaB4hE
http://youtu.be/1cVPmMr93y4
E025 Lesson 2 Non sinusoidal Circuits
http://youtu.be/Kq9t-t8DQ8Q
http://youtu.be/-LMhXfIMROk
http://youtu.be/s5kdChawoDU
E025 Lesson 3 Pulse Waveform+RC Response
http://youtu.be/95fJ9Ip8fjA
E025 Lesson 4 Transformer
http://youtu.be/JJIrqc6oTMA
http://youtu.be/r5BupGRKPIs
http://youtu.be/vKzTkLTuAVo
E025 Lesson 5 Decibel+Filter
http://youtu.be/-_6WoZ1w9_Y
E025 Lesson 6 Filter+Bode Plot
http://youtu.be/7R1xjy4W_qc
http://youtu.be/FXloCpLIual

Power circuit analysis

G048 Lesson 1 Mesh analysis+Source conversion.zip
Mesh Analysis
ttp://youtu.be/MM--ZGqjI8A
http://youtu.be/HwFQSLXIcm0

Source Conversion

http://youtu.be/xwxbTZeYnJs

http://youtu.be/qyZ68VSC8v4

http://youtu.be/UdurkaaTqGk

http://youtu.be/vYMF-nDwgWM

http://youtu.be/_2uCwn8BFZ8

http://youtu.be/Qwx_jPA0oAI

http://youtu.be/ZPb8ejKe7Wo

http://youtu.be/AVqjZVJfuKY

G048 Lesson 2 Thevenin Theorem.zip

http://youtu.be/oKxZfnFOAgw

http://youtu.be/JoZdLTEUoPQ

G048 Lesson 3 Nodal Analysis.zip

http://youtu.be/ScVou22hBIc

http://youtu.be/s3Zy2ggfzuY

G048 Lesson 4 Superposition Theorem.zip

http://youtu.be/iE69o2ftK3U

http://youtu.be/zF99nhpnhGU

http://youtu.be/5lyfyULbrqA

G048 Lesson 5 AC Network Analysis.zip

http://youtu.be/acETlYaiIs0
http://youtu.be/Y2WnzmgF1Ug
http://youtu.be/n-Yj9gGw5uk

G048 Lesson 6 Transient Circuit.zip

http://youtu.be/MErtK1jW5Ws
http://youtu.be/IKvpSKrDnwQ
http://youtu.be/pzUmVIzL6RU

The links contain the following lessons
G048 Lesson 1 Mesh analysis+ Source conversion
G048 Lesson 2 Thevenin Theorem
G048 Lesson 3 Nodal Analysis
G048 Lesson 4 Superposition Theorem
G048 Lesson 5 AC Network Analysis
G048 Lesson 6 Transient Circuit

UEENEEE126A Provide solutions to basic engineering computational problems

E126+127
Maths 1-E050+G047.zip

UEENEEE126A	Provide solutions to basic engineering computational problems	UEECD0039	Provide solutions to basic engineering computational problems*

www.highlightcomputer.com/Maths1E050G047Mod.zip

Maths 2-E026.zip

www.iqytechnicalcollege.com/Maths 2-E026 Mod.zip

E126	Engineering Mathematics

UEENEEE126A	Provide solutions to basic engineering computational problems	UEECD0039	Provide solutions to basic engineering computational problems*

Engineering Maths 1

Engineering Maths 2

Engineering Maths Calculus Textbook

Engineering Maths 3

Engineering Maths 4

Foundation Mathematics

Engineering Mathematics II

E127	Advanced Engineering Mathematics

E026/E127
Page 26 to 50 of
www.highlightcomputer.com/Video Lessons.pdf

Engineering Mathematics

E026 Lesson 1 to 5

The links contain the following lessons

E026 Lesson 1-Fourier
https://www.youtube.com/watch?v=QzYO2qCJGNg
http://youtu.be/fGL7VYtEBV4

E026 Lesson 2-Differential equation
http://youtu.be/RjhgggxG2p0

E026 Lesson 3-Gamma+Beta Function
http://youtu.be/D-bUQ1Uyl_Y
http://youtu.be/6rNFJbbqzyI

E026 Lesson 4-Vector analysis
http://youtu.be/T9OYT8RpqbA

E026-Lesson 5-Laplace Transform
Links
E026 Harmonic Exercises
https://www.youtube.com/watch?v=VSdug1mECDE
E026 Definite Integral
https://www.youtube.com/watch?v=oal27HPNvhA
E026 Harmonics
https://www.youtube.com/watch?v=yFM7ajxKnXw
http://youtu.be/d5drjXEZKv0
http://youtu.be/NDUvNSO6il8
http://youtu.be/d5drjXEZKv0

E026 Multiple Integral
http://youtu.be/amV5KiBi0jk
http://youtu.be/IAKJvYUTPiI

E026-Lesson 6-Inverse Laplace+ Differential equation solution
http://youtu.be/yXulBJeI_2w
http://youtu.be/SPGeFn2icU0

http://youtu.be/4VLHZp6joYg
http://youtu.be/bYkyLGd17PU
http://youtu.be/GrYCm8FzAMY
E026-Lesson 7-Matrices
http://youtu.be/99cNSVx4hqU
http://youtu.be/ztHu2UYwA5c
http://youtu.be/m_7oVILNSsI
http://youtu.be/5hq-ZfZdCRI

E026-Lesson 8 Legendre Function
http://youtu.be/VWyysJQ1grs
E026-Lesson 9 Binomial Theorem+ Partial Differential equation
http://youtu.be/jNj4dWucl50
E026-Lesson 10 Multiple Integral
http://youtu.be/amV5KiBi0jk

UEENEEE124A Compile and produce an energy sector detailed report

Report Writing

UETDREL001 Apply environmental requirements

UETDRIS005 Implement & monitor power system environmental & sustainable energy management policies & procedures

http://www.iqytechnicalcollege.com/electricaltrade2022.htm#K142A

UETDREL005 Work safely in the vicinity of live electrical apparatus

UETDRIS006 Implement and monitor the power system organisational WHS/OHS policies, procedures and programs

Electricity Supply Industry Safety

UETDREL006

UETDRRF004

UETTDRRF09

ELECTIVE (1410/ 1340)

Group B (200)

UEENEEG006A Solve problems in single and three phase low voltage machine (80)

http://www.highlightcomputer.com/electricaltrade2021.htm#G006

143+G144+G145

Elect Machine-G043+G044+G045.zip

www.highlightcomputer.com/Elect Machine-G043G044G045 Mod.zip

http://highlightcomputergroup4.zoomshare.com/files/G043_G045_Part_1.zip

G043+G045 Part 1

http://highlightcomputergroup4.zoomshare.com/files/G043_G045_Part_2.zip

G043+G045 Part 2

http://highlightcomputergroup4.zoomshare.com/files/G044_G010.zip

http://www.filefactory.com/file/c0b6668/n/Elect_Machine-G043_G044_G045.zip

AC Machines

G143+145	AC Machines

G043+G045+ G143+145+I145
Page 308 to 329 of
www.highlightcomputer.com/Video Lessons.pdf

Induction and synchronous machines & control

G043+G045 Lesson 1 AC Machine Introduction.zip

http://youtu.be/-WlfOPhNDn8

G043+G045 Lesson 2 Slip+Equivalent Ckt.zip

http://youtu.be/De79cbk2EOQ

http://youtu.be/gprZTitiOao

G043+G045 Lesson 3 Power Transfer.zip

http://youtu.be/pCMcMPBrUEE

http://youtu.be/7tJjDuG5SQc

http://youtu.be/dV9VFsXeFnY

G043+G045 Lesson 4 Test for equivalent ckt.zip

http://youtu.be/HF4bJ6vWX2c

G043+G045 Lesson 5 Equivalent Ckt Problems.zip

http://youtu.be/PyPQsw0L_o0

http://youtu.be/f8VbD_APNfk

http://youtu.be/SROLC5hkoc0

G043+G045 Lesson 6 Motor starting and control.zip

http://youtu.be/Utfbzs7Ti6M

http://youtu.be/VnNlesPgeZk

http://youtu.be/AMO70oGS2Fs

http://youtu.be/FQVMCMDSTwo

G043+G045 Lesson 7 Synchronous machine introduction.zip

http://youtu.be/KM9TJcr2MBk

G043+G045 Lesson 8 Synchronous machine ckt problems.zip

http://youtu.be/ZGsmZfLiPoc

http://youtu.be/bnpYxKtSz1c

G043+G045 Lesson 9 Synchronous machine starting.zip

http://youtu.be/p4x03LkgBc8

http://youtu.be/yKmNWaxT2Hk

G043+G045 Lesson 10 Single phase motor.zip

http://youtu.be/9OgmEb0tFpE

G043+G045 Lesson 11 Factors affecting motor operation.zip

http://youtu.be/sAqyhDlpwwY

The links contain the following lessons
G043+G045 Lesson 1 AC Machine Introduction
G043+G045 Lesson 2 Slip+Equivalent Ckt
G043+G045 Lesson 3 Power Transfer
G043+G045 Lesson 4 Test for equivalent ckt
G043+G045 Lesson 5 Equivalent Ckt Problems
G043+G045 Lesson 6 Motor starting and control
G043+G045 Lesson 7 Synchronous machine introduction
G043+G045 Lesson 8 Synchronous machine ckt problems
G043+G045 Lesson 9 Synchronous machine starting
G043+G045 Lesson 10 Single phase motor
G043+G045 Lesson 11 Factors affecting motor operation

DC Machines

G144	DC Machine

G044+G144+I146
Page 330 to 343 of
www.highlightcomputer.com/Video Lessons.pdf

DC Machine and control

G044 Lesson 1 DC Machine Principle.zip

http://youtu.be/-jAtAH_Ny94

G044 Lesson 2 DC Winding +Armature reaction.zip

http://youtu.be/SYx2SSmMKIE

http://youtu.be/YtTPpipiUYI

G044 Lesson 3 Factors affecting speed & direction of rotation.zip
http://youtu.be/9-7wsKVrhls

http://youtu.be/O_uo2H5Rflc
http://youtu.be/QaabA5pmB9E

G044_Lesson_4_Torque_speed_relation.zip

http://youtu.be/NsBiqxreBOA

G044 Lesson 5 Losses & efficiency of DC machine.zip

http://youtu.be/2sHkClBWiFw

http://youtu.be/hZAjL3oUxMM

G044 Lesson 6 Machine temperature rise.zip

http://youtu.be/h8PNG21p-p4

http://youtu.be/Cq0V4DR_2wE

G044 Lesson 7 DC motor control.zip

http://youtu.be/XUidfx-qtF0

G044 Lesson 8 Duty cycle+DC motor starter.zip

http://youtu.be/bhQf-hurKMI

G044 Lesson 9 DC motor speed control.zip

http://youtu.be/kRfoWS3ujdE

http://youtu.be/R_0LDkQEAHU

The links contain the following lessons
G044 Lesson 1 DC Machine Principle
G044 Lesson 2 DC Winding +Armature reaction
G044 Lesson 3 Factors affecting speed & direction of rotation
G044 Lesson 4 Torque speed relation
G044 Lesson 5 Losses & efficiency of DC machine
G044 Lesson 6 Machine temperature rise
G044 Lesson 7 DC motor control
G044 Lesson 8 Duty cycle+DC motor starter
G044 Lesson 9 DC motor speed control

Group D

UETTDRIS69 Diagnose and rectify faults in energy supply apparatus (60)

Electrical Power Systems II

IS68+69	Electrical Energy Supply System

G037+G038+G039 Part 1/2/3+IS69
Page 232 to 270
www.highlightcomputer.com/Video Lessons.pdf

Power System (2)

G037+G038+G039 Lesson 1-Power Flow.zip
http://youtu.be/mzwGGXRTtvw

G037+G038+G039 Lesson 2-Site Earthing.zip
http://youtu.be/PATkXVBF9kc
http://youtu.be/H4Dj1K238BE

G037+G038+G039 Lesson 3-Power System Control Equipments.zip
http://youtu.be/JJczbYVWOol
G037+G038+G039 Lesson 4-Auxiliary System+Harmonic.zip
http://youtu.be/5mDNHGFLA0c

G037+G038+G039 Lesson 5-Harmonic.zip

http://youtu.be/n41q4Rmz2p0

http://youtu.be/8CeIGV5AEIk

http://www.filefactory.com/file/c386dbc/n/G037+G038+G039_Lesson_5-Harmonic.zip

G037+G038+G039 Lesson 6-Harmonic Calculation.zip

http://youtu.be/NHSzu6HkOgI

http://youtu.be/fSLrPIC6Mho

G037+G038+G039 Lesson 7-Synchronous Generator Loading.zip

:http://youtu.be/jv1q7Mtg7Gs

G037+G038+G039 Lesson 8-Turbine Control+Power Line Earthing.zip

http://youtu.be/0CvgkmDE3Kw

G037+G038+G039 Lesson 9-Insulator.zip
http://youtu.be/I4jqs8MLBFA
http://youtu.be/TiQezIA9Z-c

G037+G038+G039 Lesson 10-Reliability of Power System.zip

http://youtu.be/tIUk3nc1IxE

G037+G038+G039 Lesson 11-Harmonic Reduction.zip
http://youtu.be/8dYX-11kRcc
http://youtu.be/A684Agej8-w

G037+G038+G039 Lesson 12-Grounding + Power Quality.zip
http://youtu.be/QQPUj3WXJnA

G037+G038+G039 Lesson 13-Power Quality.zip
http://youtu.be/feI7SCb_QTY
http://youtu.be/mcK2YhDsnr0

G037+G038+G039 Lesson 14-Harmonic Model.zip
http://youtu.be/dwWBOq-BsLY

G037+G038+G039 Lesson 15-Harmonic Losses in Transformer.zip

http://youtu.be/mwEJgEEgPVc

http://youtu.be/1A6FY5f5ijM

http://youtu.be/yLiOKy7uJj0

G037+G038+G039 Lesson 16-Reliability Improvement.zip

http://youtu.be/cn-CfDWnUN8

G037+G038+G039 Lesson 17-Preparation for emergency.zip
http://youtu.be/La7Xip8GI2I

G037+G038+G039 Lesson 18-Harmonic problems.zip
http://youtu.be/0Urnkee_
http://youtu.be/zM_Xcwckicw

G037+G038+G039 Lesson 19-Synchronous machine problems.zip
http://youtu.be/Lx2S-NATr20

G037+G038+G039 Lesson 20-Power Generation + Generator Control.zip
http://youtu.be/56Ks8sArQxc

G037+G038+G039 Lesson 21-Turbine Control+ Digital Excitation.zip
http://youtu.be/uCsvv18qKwQ
http://youtu.be/I4vCDI2CZS0

G037+G038+G039 Lesson 22-Power System Protection.zip
http://youtu.be/c6iXRwfCYBU
G037+G038+G039 Lesson 23-Switch Gear.zip
http://youtu.be/DDpbzqNYTiM
http://youtu.be/2cl-nOdBNro

The links contain the following lessons
G037+G038+G039 Lesson 1-Power Flow
G037+G038+G039 Lesson 2-Site Earthing
G037+G038+G039 Lesson 3-Power System Control Equipments
G037+G038+G039 Lesson 4-Auxiliary System+ Harmonic
G037+G038+G039 Lesson 5-Harmonic
G037+G038+G039 Lesson 6-Harmonic Calculation

G037+G038+G039 Lesson 7-Synchronous Generator Loading
G037+G038+G039 Lesson 8-Turbine Control+ Power Line Earthing
G037+G038+G039 Lesson 9-Insulator
G037+G038+G039 Lesson 10-Reliability of Power System
G037+G038+G039 Lesson 11-Harmonic Reduction
G037+G038+G039 Lesson 12-Grounding + Power Quality
G037+G038+G039 Lesson 13-Power Quality
G037+G038+G039 Lesson 14-Harmonic Model
G037+G038+G039 Lesson 15-Harmonic Losses in Transformer
G037+G038+G039 Lesson 16-Reliability Improvement
G037+G038+G039 Lesson 17-Preparation for emergency
G037+G038+G039 Lesson 18-Harmonic problems
G037+G038+G039 Lesson 19-Synchronous machine problems
G037+G038+G039 Lesson 20-Power Generation + Generator Control
G037+G038+G039 Lesson 21-Turbine Control+ Digital Excitation
G037+G038+G039 Lesson 22-Power System Protection
G037+G038+G039 Lesson 23-Switch Gear

IS69
AG.zip

www.highlightcomputer.com/G015-AG Mod.zip

http://www.filefactory.com/file/c0b7f21/n/AG.zip

A010.zip

www.highlightcomputer.com/A010Mod.zip

http://www.filefactory.com/file/c0b7f3c/n/A010.zip

Power system 2-G037+G038+G039.zip

Power System 2 G037+G038+G039

UETDRSO006 Develop low voltage distribution switching programs (150)

UEPOPS428B - Develop H.V. switching programs

HIGH VOLTAGE SWITCHING.

www.mongroupsydney1.com/highvoltageswitching.htm

UEPOPS349B1
UEPOPS428B1

UEPOPS456A

Session 1+2 Marine Power Generation

Session 3+4 Principle +System

Session 5+6 Alternators

Session 7+8 Transformer

Session 9 Risk Management Leadership

Session 10+11+12 Control

Session 13+14 Ship systems

Session 15+16 Energy Supply-Operational status

Group E

UETTDRIS73 Develop engineering solutions for energy supply power transformer problems (60)

IS73
Power System Protection

IS73	Power Transformer

Power Transformer

Power Transformer -G040.zip

Power Transformer G040

www.highlightcomputer.com/G040Mod.zip

http://www.filefactory.com/file/4irnnoqadrzb/G040Lessons.zip

Power Transformers

IS73	Power Transformer

G040 + IS73
Page 271 to 284 of
www.highlightcomputer.com/Video Lessons.pdf

Power transformer

G040 Lesson 1 Power transformer rating 1.zip
http://youtu.be/qjWJVQAh_jA
G040 Lesson 1 Power transformer rating 2.zip
http://youtu.be/JonzO8JD-k4
G040 Lesson 2 Open circuit short circuit test.zip
http://youtu.be/Ru-KlKv40OY

G040 Lesson 3 Transformer regulation.zip
http://youtu.be/t6IZMwMj-B4

G040 Lesson 4 Power transformer connection.zip
http://youtu.be/ijg8PISDN1I

G040 Lesson 5 Maximum efficiency.zip

http://youtu.be/Qa7l0eHTWTU

G040 Lesson 6 Transformer parallel operation.zip

http://youtu.be/dkRxoaozrOk

http://youtu.be/Sz5QY727w-8

G040 Lesson 7 Harmonic in transformer.zip

http://youtu.be/_YOlWb3e574

G040 Lesson 8 Transformer problem + auto transformer.zip
http://youtu.be/0KCscbCIUjk

G040_Lesson_9_Transformer_rating_cooling_connection_tap_changing.zip
http://youtu.be/d3XHm-wguzQ
http://youtu.be/XwilkZnKFqQ
http://youtu.be/uOHBk840Bhw

G040 Lesson 10 Phase shift transformer.zip

http://youtu.be/7aWhg9DIoWI

The links contain the following lessons
G040 Lesson 1 Power transformer rating 1
G040 Lesson 1 Power transformer rating 2
G040 Lesson 2 Open circuit short circuit test
G040 Lesson 3 Transformer regulation
G040 Lesson 4 Power transformer connection
G040 Lesson 5 Maximum efficiency
G040 Lesson 6 Transformer parallel operation
G040 Lesson 7 Harmonic in transformer
G040 Lesson 8 Transformer problem + auto transformer
G040 Lesson 9 Transformer rating cooling connection tap changing
G040 Lesson 10 Phase shift transformer

UETTDRIS71 Diagnose and rectify faults in electrical energy supply transmission systems (60)

IS71

Transmission
Transmission Lines

EE303	Transmission Line

G042+IS71
Page 285 to 307 of
www.highlightcomputer.com/Video Lessons.pdf

Transmission Line

G042 Lesson 1-Transmission line introduction.zip

http://youtu.be/DrOOgcKeaL4

G042 Lesson 2-DC Line+Line reflection.zip

http://youtu.be/jyVdecp-clk

G042 Lesson 3-Power line calculation.zip

http://youtu.be/3TgVt67DhvY

http://youtu.be/QT6aqsaM7a0

http://youtu.be/WxjQIkdJjQ8

G042 Lesson 4-Line model+Economic aspect.zip

http://youtu.be/1HRdGZXp_-w

G042 Lesson 5-Time value of money+Line reflection.zip

http://youtu.be/n9mupLQWANY

http://youtu.be/YdfiX2gL-3c

G042 Lesson 6-Line matching+Wave guide.zip

http://youtu.be/1WyP5_Cek40

G042 Lesson 7-Wave guide.zip

http://youtu.be/BuGtjZ3QBXk

http://youtu.be/pftevsnbl0w

G042 Lesson 8-Microstrip line.zip

http://youtu.be/eINq1kKuiec

G042 Lesson 9-Per unit value of line.zip

http://youtu.be/66Y-Lm3EntI

G042 Lesson 10-Line constants.zip

http://youtu.be/2XYnZZ-zXII

G042 Lesson 11-Smith chart.zip

http://youtu.be/dv-NQh4vlrg

http://youtu.be/KfM8XZd9Wqc

http://youtu.be/3NYVQvW8-Nk

http://youtu.be/5qBwLsbtfTA

http://youtu.be/ViamcvqAy_I

http://youtu.be/j_nx9n7mGec

http://youtu.be/d53B3-zV2ec

G042 Lesson 12-Four terminals network.zip

http://youtu.be/HCO4P1qrPbA

G042 Lesson 13-Exercises.zip

http://youtu.be/LeyJf1PhpCY

The links contain the following lessons
G042 Lesson 1-Transmission line introduction
G042 Lesson 2-DC Line+Line reflection
G042 Lesson 3-Power line calculation
G042 Lesson 4-Line model+Economic aspect
G042 Lesson 5-Time value of money+Line reflection
G042 Lesson 6-Line matching+Wave guide
G042 Lesson 7-Wave guide
G042 Lesson 8-Microstrip line
G042 Lesson 9-Per unit value of line
G042 Lesson 10-Line constants

G042 Lesson 11-Smith chart
G042 Lesson 12-Four terminals network
G042 Lesson 13-Exercises

IS71	Transmission Line

Power Transmission 1

Power Transmission 2

Transmission Line G042

www.highlightcomputer.com/G042 Mod.zip

UETDRTS026 Undertake power systems project management of substation augmentation and maintenance (180) (G169+170+E071)

G169+170	Project Management

Engineering Project Management

Project Slides

E124	Engineering Officer Competency Report

Electrical Report

011+E117+E071+G169+G170

Projectplanning+management+Risk+OHS. G069+G070+E071+E011+E017.zip

www.highlightcomputer.com/E01124G069G070Mod.zip

Project+Risk-E011+E017+G070+G069

Project Specification+ Variation

E071MEM09004

Risk Management

Project Risk Assessment and Management

Electrical Risk Assessment

http://www.mongroupsydney1.com/Electrical_Risk_Assessment.pdf

Project Management +Specification Delivery & Assessment Plan

http://www.mongroupsydney1.com/ProjectManagementSpecificationDeliveryandAssessmentPlan.doc

Project Management

E071	Electrical Contracting & Specification

G169+170	Project Management

E071+G069+G070 + G169+G170
Page 102 to 127 of
www.highlightcomputer.com/Video Lessons.pdf

Project Specifications+ Project Planning

The links contain the following lessons

E071+G069+G070 Lesson 1 Project management planning
http://youtu.be/VNe56RYAPyg
E071+G069+G070 Lesson 2 NSW service rule+Marketing
http://youtu.be/6D88EoKTXFA
http://youtu.be/tdr9z5WZq2w
E071+G069+G070 Lesson 3+4 Contract planning + HV conductor
http://youtu.be/k7vuQq7juNk
http://youtu.be/RyS31r1aOWQ
E071+G069+G070 Lesson 5 Project modelling
http://youtu.be/7gO57AHY-tk
http://youtu.be/lhcVELYNVYw
E071+G069+G070 Lesson 6 Job planning
http://youtu.be/QDr6ar_ZYmk
http://youtu.be/bsBVQFUtGp8

E071+G069+G070 Lesson 7 Line infrastructure + Material planning
http://youtu.be/x8-gdp3sP8Q
E071+G069+G070 Lesson 8 Problem solving and decision making
http://youtu.be/Khg1pnkBcQo
E071+G069+G070 Lesson 9 Control of project+Maintenance specialist work
http://youtu.be/eKuW5um3SR0
http://youtu.be/AA684uXyv48
http://youtu.be/6NG2Qzg4MMg
E071+G069+G070 Lesson 10 Contract bid work
http://youtu.be/4O9nAOmd4Qg
E071+G069+G070 Lesson 11 Project structure
http://youtu.be/libpIsnVNG4
E071+G069+G070 Lesson 12 Analysing plan+ Insurance
http://youtu.be/_x3oQvuAGq8
http://youtu.be/dMUAaI0A-4w
E071+G069+G070 Lesson 13 Modelling project
http://youtu.be/FJBVycx0vTM
E071+G069+G070 Lesson 14 Project costing+Contracting paper work
http://youtu.be/pOke86sLrzw
http://youtu.be/2RwrkL0Phb0
http://youtu.be/I7nh4pZqnSw
E071+G069+G070 Lesson 15 Change control
http://youtu.be/9JR-yJx1D0w
E071+G069+G070 Lesson 16 Management leadership+Job accounting
http://youtu.be/EYuy1zKJ72k
http://youtu.be/Ay2DyulvVhk
E071+G069+G070 Lesson 17 Management thinking+Contract management planning
http://youtu.be/0LzgzKg5hu8

http://youtu.be/nrfgVQ7omfk

UETDRTS023 Repair, test and calibrate protection relays and meters

Metering Pathway Unit Group

UETDRTS005 Commission power systems metering schemes

UETDRTS010 Develop power systems secondary isolation instructional documents

UETDRTS014 Maintain and test and metering schemes

Primary Plant Pathway Unit Group

UETDRTS007 Conduct evaluation of power systems primary plant

https://www.pdfdrive.com/reliability-evaluation-of-power-systems-d33462432.html

http://www.iqytechnicalcollege.com/Reliability Evaluation of Power Systems (PDFDrive).pdf

UETDRTS010 Develop power systems secondary isolation instructional documents

Protection Systems Pathway Unit Group

UETDRTS010 Develop power systems secondary isolation instructional documents

https://www.pdfdrive.com/practical-power-systems-protection-d34359587.html

http://www.iqytechnicalcollege.com/Practical Power Systems Protection (PDFDrive).pdf

https://web.horizonpower.com.au/media/2640/switching-process-and-rulesdoc.pdf

http://www.iqytechnicalcollege.com/switching-process-and-rulesdoc (1).pdf

UETDRTS015 Maintain complex network protection and control systems

https://www.nature.com/articles/srep24456

www.iqytechnicalcollege.com/**srep02764.pdf**

http://rpa.energy.mn/wp-content/uploads/2016/07/network-protection-and-automation-guide-book.pdf

www.iqytechnicalcollege.com/**network-protection-and-automation-guide-book.pdf**

UETDRTS017 Maintain interdependent network protection and control systems
https://ietresearch.onlinelibrary.wiley.com/doi/full/10.1049/gtd2.12177

www.iqytechnicalcollege.com/**S017.pdf**

https://www.pdfdrive.com/protection-of-electrical-networks-d33483131.html

http://www.iqytechnicalcollege.com/Protection of Electrical Networks (PDFDrive).pdf

https://www.pdfdrive.com/electric-power-system-planning-d39893329.html

www.iqytechnicalcollege.com/**Electric-Power-System-Planning-Issues-and-Algorithms-and-Solutions.pdf**

ELEMENTS	**PERFORMANCE CRITERIA**
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1 Plan for the project management of substation augmentation and maintenance	**1.1** Work health and safety (WHS)/occupational health and safety (OHS) practices/procedures and environmental and sustainable energy procedures, which may influence the undertaking of project management of substation augmentation and maintenance, are reviewed and determined
	1.2 Purpose of the undertaking of project management of substation augmentation and maintenance is established after data is analysed and expected outcomes of the work are confirmed with appropriate personnel
	1.3 Organisational established procedures on policies and specifications for the undertaking of project management of substation augmentation and maintenance are obtained or established with appropriate personnel
	1.4 Testing procedures are discussed with/directed to appropriate personnel in order to ascertain the project brief
	1.5 Testing parameters are established from organisational established procedures and policies and specifications https://www.pdfdrive.com/manual-of-test-procedures-for-materials-d19693651.html http://www.iqytechnicalcollege.com/Manual of Test Procedures for Materials (PDFDrive).pdf
	1.6 Equipment/tools and personal protective equipment (PPE) are selected based on specified performance criteria and established procedures
	1.7 Work roles and tasks are allocated according to requirements and individual competencies
	1.8 Work is prioritised and sequenced for the most efficient/effective outcome, completed within an

			acceptable timeframe, to a quality standard and in accordance with established procedures
		1.9	Liaison and communication issues with others/authorised personnel, authorities, clients and landowners are resolved and activities coordinated to carry out work
		1.10	Risk control measures are identified, prioritised and evaluated against the work schedule
		1.11	Relevant work permits are secured to coordinate the performance of work according to requirements and/or established procedures
2	**Carry out project management of substation augmentation and maintenance**	**2.1**	Circuit/systems modelling is used to evaluate alternative proposals in accordance with established procedures
		2.2	WHS/OHS and sustainable energy principles, functionality and practices to reduce the incidents of accidents and minimise waste are incorporated into the project in accordance with requirements and/or established procedures
		2.3	Undertaking of project management of substation augmentation and maintenance decisions are made on the basis of safety and effective outcomes according to requirements and/or established procedures
		2.4	Mathematical/engineering models of the undertaking of project management of substation augmentation and maintenance are used to analyse the effectiveness of the finished project in accordance with requirements and established procedures
		2.5	Technical advice is given regarding potential hazards, safety risks and control measures so that monitoring and preventative action can be undertaken and/or appropriate authorities consulted, where necessary, in accordance with requirements and established procedures
		2.6	Essential knowledge and associated skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
		2.7	Testing of substation augmentation and maintenance is undertaken according to requirements and established procedures
		2.8	Work teams/groups are arranged/coordinated/evaluated to ensure planned goals are met according to established procedures
		2.9	Solutions to non-routine problems are identified and actioned, using acquired essential knowledge and associated skills, according to requirements
		2.10	Quality of work is monitored against personal performance agreement and/or established organisational and professional standards
		2.11	Strategic plans are developed incorporating organisation initiatives in accordance with established procedures
3	**Complete the project management of**	**3.1**	Final inspections of substation augmentation and maintenance are undertaken to ensure they comply with

substation augmentation and maintenance		all requirements and include all specifications and documentations needed to complete the project
	3.2	Appropriate personnel are notified of completion and reports and/or completion documents are finalised/commissioned
	3.3	Reports and/or completion documents are submitted to relevant personnel/organisations for approval and, where applicable, statutory or regulatory approval
	3.4	Approved copies of the project management of substation augmentation and maintenance documents are issued and records are updated in accordance with established procedures

UETDRTS015 Maintain complex network protection and control systems (180)

IS68+74+I006

IS68+74	**Power System Protection**

Power System Protection

IS68+74
AE.zip

www.highlightcomputer.com/G015-AE Mod.zip

http://www.filefactory.com/file/c0b7ff7/n/AE.zip

G015(AE)Lesson 1-Power system protection scheme.zip
http://youtu.be/ihpd3cDAhBU
http://youtu.be/EGXkLRM2L9M
http://youtu.be/zOIUYQ7OJfs

G015(AE)Lesson 2-Differential relay.zip
http://youtu.be/2iW0oEScMsw

G015(AE)Lesson_3-Over_current_&_earth_fault_protection.zip
http://youtu.be/hvGjdO9jEhk

G015(AE)Lesson 4-Three phase differential relay.zip
http://youtu.be/2iW0oEScMsw
http://youtu.be/VuzjXkRx4UI
http://youtu.be/2iW0oEScMsw

G015(AE)Lesson 5-Current time grading.zip
http://youtu.be/r0qkLrmkKsM
G015AE Lesson 6
http://youtu.be/InsTLh7_N5k
G015(AE)Lesson_7-CT_PT.zip
http://youtu.be/ZF_y65xsM_M

G015(AE)Lesson 8-Distance relay.zip

http://youtu.be/NKzMVquFLu8

G015(AE)Lesson 9-Telecom in power protection.zip
http://youtu.be/9C6qggZAKRg
http://youtu.be/XRpffA6hU_U
http://youtu.be/X-kz3cyL9fU

UETDRTS010 Develop power systems secondary isolation instructional documents

https://www.pdfdrive.com/practical-power-systems-protection-d34359587.html

http://www.iqytechnicalcollege.com/Practical Power Systems Protection (PDFDrive).pdf

https://web.horizonpower.com.au/media/2640/switching-process-and-rulesdoc.pdf

http://www.iqytechnicalcollege.com/switching-process-and-rulesdoc (1).pdf

UETDRTS017 Maintain interdependent network protection and control systems

https://ietresearch.onlinelibrary.wiley.com/doi/full/10.1049/gtd2.12177

http://www.iqytechnicalcollege.com/Asset management and maintenance programming for power distribution systems.pdf

https://www.pdfdrive.com/protection-of-electrical-networks-d33483131.html

www.iqytechnicalcollege.com/

https://www.pdfdrive.com/electric-power-system-planning-d39893329.html

http://www.iqytechnicalcollege.com/Protection of Electrical Networks (PDFDrive).pdf

Elements and Performance Criteria

ELEMENTS	PERFORMANCE CRITERIA	
Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.	
1 Plan for the maintenance of network protection and control systems (complex)	**1.1**	Work health and safety (WHS)/occupational health and safety (OHS) practices/procedures and environmental and sustainable energy procedures, which may influence the maintenance of network protection and control systems (complex), are reviewed and determined
	1.2	Purpose of the maintenance of network protection and control systems (complex) is established after data is analysed and expected outcomes of the work are confirmed with appropriate personnel
	1.3	Organisational established procedures on policies and specifications for the maintenance of network protection and control systems (complex) are obtained or established with appropriate personnel
	1.4	Testing procedures are discussed with and/or directed to appropriate personnel in order to ascertain the project brief
	1.5	Testing parameters are ascertained from organisational established procedures, policies and specifications
	1.6	Equipment/tools and personal protective equipment (PPE) are selected based on specified performance criteria and established procedures
	1.7	Work roles and tasks are allocated according to requirements and individual competencies
	1.8	Work is prioritised and sequenced for the most efficient/effective outcome, completed within an acceptable timeframe, to a quality standard and in accordance with established procedures
	1.9	Liaison and communication issues with others/authorised personnel, authorities, clients and

			landowners are resolved and activities coordinated to carry out work
		1.10	Risk control measures are identified, prioritised and evaluated against the work schedule
		1.11	Relevant work permits are secured to coordinate the performance of work according to requirements and/or established procedures
2	**Carry out the maintenance of network protection and control systems (complex)**	**2.1**	Circuit/systems modelling is used to evaluate alternative proposals in accordance with established procedures
		2.2	WHS/OHS and sustainable energy principles, functionality and practices to reduce the incidents of accidents and minimise waste are incorporated into the project in accordance with requirements and/or established procedures
		2.3	Maintenance of network protection and control systems (complex) decisions are made on the basis of safety and effective outcomes according to requirements and/or established procedures
		2.4	Mathematical and/or engineering models of the scheme are used to analyse the effectiveness of the finished project in accordance with requirements and established procedures
		2.5	Technical advice is given regarding potential hazards, safety risks and control measures so that monitoring and preventative action can be undertaken and/or appropriate authorities consulted, where necessary, in accordance with requirements and established procedures
		2.6	Essential knowledge and associated skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
		2.7	Testing of network protection and control systems (complex) is undertaken according to requirements and established procedures
		2.8	Work teams/groups are arranged/coordinated/evaluated to ensure planned goals are met according to established procedures
		2.9	Solutions to non-routine problems are identified and actioned, using acquired essential knowledge and associated skills, according to requirements
		2.10	Quality of work is monitored against personal performance agreement and/or established organisational and professional standards
		2.11	Strategic plans are developed incorporating organisation initiatives in accordance with established procedures
3	**Complete the maintenance of network protection and control systems (complex)**	**3.1**	Final inspections of the network protection and control systems (complex) are undertaken to ensure they comply with all requirements and include all specifications and documentation needed to complete the project

3.2 Appropriate personnel are notified of completion and reports and/or completion documents are finalised/commissioned

3.3 Reports and/or completion documents are submitted to relevant personnel/organisations for approval and, where applicable, statutory or regulatory approval

3.4 Approved copies of the maintenance of network protection and control systems (complex) documents are issued and records are updated in accordance with established procedures

UETDRTS006 Conduct evaluation of power system substation faults (140)

7762AB

E125	Electrical Circuits

Electrical Circuits 1

Electrical Circuits 2

G149	**Three Phase Power Circuits**

3 Phase Circuits

E125+G149
Circuit G048+E025.zip

Circuit G048+E025

www.highlightcomputer.com/Circuit G048E025G049-Mod.zip

UETDRSO009 Manage power systems transmission networks (180)

IS69
AG.zip

www.highlightcomputer.com/G015-AG Mod.zip

7761M

https://www.pdfdrive.com/protection-substation-automation-power-quality-and-siemens-e15229427.html

http://www.iqytechnicalcollege.com/Protection, Substation Automation Power Quality and - Siemens (PDFDrive).pdf

https://www.pdfdrive.com/short-circuits-in-power-systems-a-practical-guide-to-iec-60909-d158147935.html

http://www.iqytechnicalcollege.com/Short Circuits in Power Systems_ A Practical Guide to IEC 60909 (PDFDrive).pdf

https://www.pdfdrive.com/line-loss-analysis-and-calculation-of-electric-power-systems-d188391225.html

http://www.iqytechnicalcollege.com/Line loss analysis and calculation of electric power systems (PDFDrive).pdf

https://www.pdfdrive.com/power-system-analysis-power-system-analysis-2nd-ed-d176072996.html

http://www.iqytechnicalcollege.com/Power System Analysis Power System Analysis.pdf

https://www.pdfdrive.com/handbook-of-electric-power-calculations-podeliseru-e6136753.html

http://www.iqytechnicalcollege.com/HANDBOOK OF ELECTRIC POWER CALCULATIONS - Podelise.ru (PDFDrive).pdf

Elements and Performance Criteria

ELEMENTS		PERFORMANCE CRITERIA
Elements describe the essential outcomes.		Performance criteria describe the performance needed to demonstrate achievement of the element.
1 Plan for the evaluation of power system events	**1.1**	Work health and safety (WHS)/occupational health and safety (OHS) practices/procedures and environmental and sustainable energy procedures, which may influence the evaluation of power system failures, are reviewed and determined
	1.2	Purpose of the evaluation of power system events are established after data is analysed and expected outcomes of the work are confirmed with appropriate personnel
	1.3	Organisational established procedures on policies and specifications for the evaluation of power system failures are obtained or established with appropriate personnel
	1.4	Testing procedures are discussed with/directed to appropriate personnel in order to ascertain the project brief
	1.5	Testing parameters are established from organisational established procedures on policies and specifications
	1.6	Equipment/tools and personal protective equipment (PPE) are selected based on specified performance criteria and established procedures
	1.7	Work roles and tasks are allocated according to requirements and individual competencies
	1.8	Work is prioritised and sequenced for the most efficient/effective outcome, completed within an acceptable timeframe, to a quality standard and in accordance with established procedures
	1.9	Liaison and communication issues with others/authorised personnel, authorities, clients and landowners are resolved and activities coordinated to carry out work
	1.10	Risk control measures are identified, prioritised and evaluated against the work schedule
	1.11	Relevant work permits are secured to coordinate the performance of work according to requirements and/or established procedures
2 Carry out the evaluation of power system events	**2.1**	Circuit/systems modelling is used to evaluate alternative proposals in accordance with established procedures
	2.2	WHS/OHS and sustainable energy principles, functionality and practices to reduce the incidents of accidents and minimise waste are incorporated into the

			project in accordance with requirements and/or established procedures
		2.3	Following evaluation of power system events, decisions are made on the basis of safety and effective outcomes according to requirements and/or established procedures
		2.4	Mathematical and /or engineering models of the evaluation of power system events are used to analyse the effectiveness of the finished project in accordance with requirements and established procedures
		2.5	Technical advice is given regarding potential hazards, safety risks and control measures so that monitoring and preventative action can be undertaken and/or appropriate authorities consulted, where necessary, in accordance with requirements and established procedures
		2.6	Essential knowledge and associated skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements
		2.7	Testing of power system is undertaken according to requirements and established procedures
		2.8	Work teams/groups are arranged/coordinated/evaluated to ensure planned goals are met according to established procedures
		2.9	Solutions to non-routine problems are identified and actioned, using acquired essential knowledge and associated skills, according to requirements
		2.10	Quality of work is monitored against personal performance agreement and/or established organisational and professional standards
		2.11	Strategic plans are developed incorporating organisation initiatives in accordance with established procedures
3	**Complete the evaluation of power system events**	**3.1**	Final evaluation of all relevant data pertaining to the power system event is undertaken to ensure the recommendations comply with all requirements and include all specifications and documentations needed to complete the project
		3.2	Appropriate personnel are notified of completion and reports and/or completion documents are finalised/commissioned
		3.3	Reports and/or completion documents are submitted to relevant personnel/organisations for approval and, where applicable, statutory or regulatory approval
		3.4	Approved copies of the evaluation of power system event documents are issued and records are updated in accordance with established procedures

UETDRSO007 Manage high voltage distribution and sub-transmission network demand (180)

(7762AA)

IS67+69

Power System 1-G015+G046+A010

AA.zip

www.highlightcomputer.com/G015-AA Mod.zip

IS67	Electrical Energy Supply System

Electrical Distribution Lessons

IS67+69

Power System 1-G015+G046+A010

AA.zip

www.highlightcomputer.com/G015-AA Mod.zip

G015/ IS67+68+ IS74
Page 196 to 231 of
www.highlightcomputer.com/Video Lessons.pdf

Power System (1)

G015(AA)Lesson 1-Distribution system.zip
http://youtu.be/VuzjXkRx4UI

G015(AA)Lesson 2-Demand factor.zip
http://youtu.be/cUGbxhBT-Dc
http://youtu.be/DCCl4cO3Vu8

G015(AA)Lesson 3-Sag.zip
http://youtu.be/1s496h-Iuu8

G015(AA)Lesson 4-OH Line mechanical design.zip
http://youtu.be/T0BnyqV9T6E
http://youtu.be/hu1TrUv2_OY

G015(AA)Lesson 5-UG Cable.zip
http://youtu.be/hHCLzMnVmT0
http://youtu.be/A5AieaBBZHo

G015(AA)Lesson 6-Voltage control.zip
http://youtu.be/y1vTM5fvfyU
http://youtu.be/Z9HBGsVgymA

Assessment Requirements for UETDRSO007 Manage high voltage distribution and sub-transmission network demand

Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria on at least two separate occasions and include:

- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including the use of risk control measures
- applying sustainable energy principles and practices
- demonstrating at least three (3) system manipulations that encompass the following:
  - high voltage (HV) sub-transmission distribution network
  - transmission network manipulation to control loading on equipment
  - transformers with HV windings
  - HV busbars
  - HV isolators
  - HV switchgear (applicable to enterprise equipment)

https://www.pdfdrive.com/extra-high-voltage-ac-transmission-engineering-e158721900.html
http://www.iqytechnicalcollege.com/Extra High Voltage A.C. Transmission Engineering (PDFDrive).pdf

- managing multiple switching instructions
- https://web.horizonpower.com.au/media/2639/switching-operators-manual-distribution.pdf

www.iqytechnicalcollege.com/

- coordinating the status of access permits/authorities on HV network equipment
- https://www.transgrid.com.au/media/dpdkojzo/access-for-work-on-high-voltage-substation-apparatus.pdf

www.iqytechnicalcollege.com/**switching-operators-manual-distribution.pdf**

- ensuring network plant operates within design and regulatory requirements on a real time basis
- https://www.safeworkaustralia.gov.au/system/files/documents/1703/guide-safe-design-plant.pdf

www.iqytechnicalcollege.com/**guide-safe-design-plant.pdf**

- https://www.pdfdrive.com/electricity-distribution-intelligent-solutions-for-electricity-transmission-and-distribution-networks-e158168123.html

http://www.iqytechnicalcollege.com/Electricity Distribution_ Intelligent Solutions for Electricity Transmission and Distribution Networks (PDFDrive).pdf

- calculating line loading
- https://www.pdfdrive.com/line-loss-analysis-and-calculation-of-electric-power-systems-d188391225.html

http://www.iqytechnicalcollege.com/Line loss analysis and calculation of electric power systems (PDFDrive).pdf

- preparing and authorising HV distribution switching programs
- https://www.sa.gov.au/__data/assets/pdf_file/0011/398504/20190313-Switching-Manual-TR-V5_1.pdf

www.iqytechnicalcollege.com/**20190313-Switching-Manual-TR-V5_1.pdf**

- demonstrating application of supervisory control and data acquisition (SCADA) or equivalent
- analysing, diagnosing and reporting system failures
- https://www.pdfdrive.com/plc-scada-based-substation-automation-d39204616.html

http://www.iqytechnicalcollege.com/plc & scada based substation automation (PDFDrive).pdf

- calculating and analysing paralleling conditions on the interconnected HV system as applicable to the entity
- https://www.tasnetworks.com.au/config/getattachment/547ef2d8-64e2-4668-a12e-59e76fe33618/distribution-network-operation-manual.pdf

www.iqytechnicalcollege.com/**Distribution-Network-Operation-Manual.pdf**

- preparing, writing and checking switching sheets to undertake all of the following:
  - managing load
  - managing voltage

- minimising loss
- maximising system reliability
- allowing safe network access for maintenance activities
- allowing safe network access for construction activities
- validating fault reports arising from system disturbances

- dealing with unplanned events on at least one (1) occasion,

https://web.horizonpower.com.au/media/2639/switching-operators-manual-distribution.pdf

www.iqytechnicalcollege.com/switching-operators-manual-distribution.pdf

Study Package (1)-OHS

Study Package (2)-Power System Planning

Study Package (3)-Testing

3-ESI Study Package 3 (5,15)

Study Package (4) Power Transformer

6-ESI Study Package 7 (4,8,11,13)

4-ESI Study Package 4 (7) + 11 (21)

Study Package (5) Machine Installation

3-ESI Study Package 3 (5,15)

Study Package (6+ 10) HV Equipments

24-ESI Study Package 33 (6)

Study Package (7) Drawing

4-ESI Study Package 4 (7) + 11 (21)

Study Package (8) Insulation

7-ESI Study Package 8 (12)

6-ESI Study Package 7 (4,8,11,13)

Study Package (9) Protection

26-ESI Study Package 5 (9)

8-ESI Study Package 9 (16)

Study Package (10) HV Equipments

Study Package (12) Harmonics

7-ESI Study Package 8 (12)

Study Package (13) Voltage Regulation

11-ESI Study Package 13 (23)

6-ESI Study Package 7 (4,8,11,13)

Study Package (15) Electrical Estimating

3-ESI Study Package 3 (5,15)

Study Package (16+17)-OHS

8-ESI Study Package 9 (16)

Study Package (19) Generator

15-ESI Study Package 19 (3132)

Study Package (20) Transmission System

Study Package (21+34)-Electrical Distribution

4-ESI Study Package 4 (7) + 11 (21)

Study Package (22) Generator

18-ESI Study Package 22 (35)

Study Package (23) Machine Rating

19-ESI Study Package 23 (36)

11-ESI Study Package 13 (23)

Study Package (24) Signal Communication

20-ESI Study Package 24 (38)

Study Package (25+27+31+32) Installation & Testing

Study Package (24) Modern Power System

Study Package (25+27+31+32) Installation & Testing

15-ESI Study Package 19 (3132)

21-ESI Study Package 26 (2)

21-ESI Study Package 26 (41)

Study Package (27) Relay

Study Package (28) Power Accessories

Study Package (34) Power Equipments Commissioning

Study Package (34) Equipments Commissioning

18-ESI Study Package 22 (35)

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria and include knowledge of:

- enterprise-specific procedures and work practices relating to managing network demand encompassing:
  - Commonwealth/state/territory and local government legislation, supply authority regulations, standards, codes and/or enterprise requirements applicable to the procedures and work practices relating to managing network demand
  - requirements for the use of demand management manuals, system diagrams/plans and drawings

- https://www.evoenergy.com.au/emerging-technology/demand-management

www.iqytechnicalcollege.com/**Demand management - Evoenergy.pdf**

- identifying and interpreting enterprise demand management procedures
- https://www.netsuite.com/portal/resource/articles/inventory-management/demand-management.shtml

http://www.iqytechnicalcollege.com/What is Demand Management_ Functions, Process and Examples _ NetSuite.pdf

- techniques in applying enterprise demand management procedures
- effective management and communication encompassing:
- https://www.erp-information.com/demand-management.html

www.iqytechnicalcollege.com/**What is Demand Management.pdf**

- Commonwealth/state/territory and local government legislation, standards, codes, supply authority regulations and/or enterprise requirements applicable to assisting in effective management and communication
- enterprise operational principles - workplace WHS/OHS enterprise plan, environmental enterprise policies and procedures, industrial relations policies and procedures, and anti-discrimination policies and procedures
- relationship between the management and employees - methods used to collate and distribute/disseminate information, responsibilities of each member of the work team, staff development activities and legislation requirements with regard to WHS/OHS training, methods of addressing barriers such as literacy and cultural differences, and provisions relating to WHS/OHS issue resolution
- https://www.pdfdrive.com/the-relationship-of-employee-engagement-and-employee-job-satisfaction-to-organizational-d76661866.html

http://www.iqytechnicalcollege.com/The Relationship of Employee Engagement and Employee Job Satisfac.pdf

- techniques associated with organisational policies and procedures related to human resources - relevant awards and certified agreements, legislation impacting on people management, range of support services and expertise available
- https://www.pdfdrive.com/organizational-strategy-structure-and-process-stanford-business-classics-e156806952.html

http://www.iqytechnicalcollege.com/Organizational StrategyStructure, and Process (Stanford Business Classics) (PDFDrive).pdf

- techniques in managing relationships - identifying problems; methods of conflict resolution; methods of consultation, communication, negotiation and mentoring; and strategies for positive feedback
- https://www.pdfdrive.com/customer-relationship-management-customer-relationship-management-e38359745.html

http://www.iqytechnicalcollege.com/CUSTOMER RELATIONSHIP MANAGEMENT Customer Relationship Management (PDFDrive).pdf

- techniques in leadership in achieving enterprise strategic and operational plans
- https://www.pdfdrive.com/leadership-management-e33599985.html

http://www.iqytechnicalcollege.com/2Dr Rebecca Jones Nursing Leadership and Manage.pdf

- techniques in managing relationships under stress - stress management
- methodology used in writing enterprise-specific management reports encompassing:
- https://www.pdfdrive.com/stress-management-e42754115.html

www.iqytechnicalcollege.com/**003-3-Stress_Management_Extra_Webpages.pdf**

- Commonwealth/state/territory and local government legislation, supply authority regulations, standards, codes and/or enterprise requirements applicable to the writing enterprise-specific management reports
- https://www.pdfdrive.com/testing-commissioning-procedure-for-electrical-installation-d8566974.html

http://www.iqytechnicalcollege.com/Testing & Commissioning Procedure for Electrical Installation. (PDFDrive).pdf

- techniques in researching, collating and analysing information for the report - recording, filing, retrieving systems, and storing and retrieving data from computer systems
- https://www.pdfdrive.com/research-methodology-tools-and-techniques-e17306960.html

www.iqytechnicalcollege.com/**9.pdf**

- relationship of management reports to enterprise policies and procedures - enterprise structure and resources, workplace WHS/OHS and risk management enterprise data, financial and operational data, environmental enterprise policies and procedures, industrial relations policies and procedures, and anti-discrimination policies and procedures
- techniques in writing enterprise-specific management reports - methods used to disseminate information and facilitate enterprise requirements, document proformas, and compliance and legislative requirements to produce effective reports in the appropriate format.

http://ghill.customer.netspace.net.au/reporting/

http://www.iqytechnicalcollege.com/Enterprise Reporting Guide.pdf

UETDRDS001 Design customer power system substations (140)

G037+38_39)

G037+G038+G039 Part 1/2/3+IS69
Page 232 to 270
www.highlightcomputer.com/Video Lessons.pdf

Power System (2)

G037+G038+G039 Lesson 1-Power Flow.zip
http://youtu.be/mzwGGXRTtvw

G037+G038+G039 Lesson 2-Site Earthing.zip
http://youtu.be/PATkXVBF9kc
http://youtu.be/H4Dj1K238BE

G037+G038+G039 Lesson 3-Power System Control Equipments.zip
http://youtu.be/JJczbYVWOoI
G037+G038+G039 Lesson 4-Auxiliary System+Harmonic.zip
http://youtu.be/5mDNHGFLA0c

G037+G038+G039 Lesson 5-Harmonic.zip

http://youtu.be/n41q4Rmz2p0

http://youtu.be/8CeIGV5AEIk

G037+G038+G039 Lesson 6-Harmonic Calculation.zip

http://youtu.be/NHSzu6HkQgI

http://youtu.be/fSLrPIC6Mho

G037+G038+G039 Lesson 7-Synchronous Generator Loading.zip

:http://youtu.be/jv1q7Mtg7Gs

G037+G038+G039 Lesson 8-Turbine Control+Power Line Earthing.zip

http://youtu.be/0CvgkmDE3Kw

G037+G038+G039 Lesson 9-Insulator.zip
http://youtu.be/l4jqs8MLBFA
http://youtu.be/TiQezIA9Z-c

G037+G038+G039 Lesson 10-Reliability of Power System.zip

http://youtu.be/tIUk3nc1IxE

G037+G038+G039 Lesson 11-Harmonic Reduction.zip
http://youtu.be/8dYX-11kRcc
http://youtu.be/A684Agej8-w

G037+G038+G039 Lesson 12-Grounding + Power Quality.zip
http://youtu.be/QQPUj3WXJnA

G037+G038+G039 Lesson 13-Power Quality.zip
http://youtu.be/feI7SCb_QTY
http://youtu.be/mcK2YhDsnr0

G037+G038+G039 Lesson 14-Harmonic Model.zip
http://youtu.be/dwWBOq-BsLY

G037+G038+G039 Lesson 15-Harmonic Losses in Transformer.zip

http://youtu.be/mwEJgEEgPVc

http://youtu.be/1A6FY5f5ijM

http://youtu.be/yLiOKy7uJj0

G037+G038+G039 Lesson 16-Reliability Improvement.zip

http://youtu.be/cn-CfDWnUN8

G037+G038+G039 Lesson 17-Preparation for emergency.zip
http://youtu.be/La7Xip8GI2I

G037+G038+G039 Lesson 18-Harmonic problems.zip
http://youtu.be/0Urnkee_
http://youtu.be/zM_Xcwckicw

G037+G038+G039 Lesson 19-Synchronous machine problems.zip
http://youtu.be/Lx2S-NATr20

G037+G038+G039 Lesson 20-Power Generation + Generator Control.zip
http://youtu.be/56Ks8sArQxc

G037+G038+G039 Lesson 21-Turbine Control+ Digital Excitation.zip
http://youtu.be/uCsvv18qKwQ
http://youtu.be/I4vCDI2CZS0

G037+G038+G039 Lesson 22-Power System Protection.zip
http://youtu.be/c6iXRwfCYBU
G037+G038+G039 Lesson 23-Switch Gear.zip
http://youtu.be/DDpbzgNYTiM
http://youtu.be/2cl-nOdBNro

The links contain the following lessons
G037+G038+G039 Lesson 1-Power Flow
G037+G038+G039 Lesson 2-Site Earthing
G037+G038+G039 Lesson 3-Power System Control Equipments
G037+G038+G039 Lesson 4-Auxiliary System+ Harmonic
G037+G038+G039 Lesson 5-Harmonic
G037+G038+G039 Lesson 6-Harmonic Calculation
G037+G038+G039 Lesson 7-Synchronous Generator Loading
G037+G038+G039 Lesson 8-Turbine Control+ Power Line Earthing
G037+G038+G039 Lesson 9-Insulator
G037+G038+G039 Lesson 10-Reliability of Power System
G037+G038+G039 Lesson 11-Harmonic Reduction
G037+G038+G039 Lesson 12-Grounding + Power Quality
G037+G038+G039 Lesson 13-Power Quality
G037+G038+G039 Lesson 14-Harmonic Model

G037+G038+G039 Lesson 15-Harmonic Losses in Transformer
G037+G038+G039 Lesson 16-Reliability Improvement
G037+G038+G039 Lesson 17-Preparation for emergency
G037+G038+G039 Lesson 18-Harmonic problems
G037+G038+G039 Lesson 19-Synchronous machine problems
G037+G038+G039 Lesson 20-Power Generation + Generator Control
G037+G038+G039 Lesson 21-Turbine Control+ Digital Excitation
G037+G038+G039 Lesson 22-Power System Protection
G037+G038+G039 Lesson 23-Switch Gear

A010.zip

www.highlightcomputer.com/A010Mod.zip

Power system 2-G037+G038+G039.zip

Power System 2 G037+G038+G039

UETDRDS013 Organise and implement ESI line and easement surveys

https://linedesigntechnology.com/overhead-line-survey/

http://www.iqytechnicalcollege.com/Overhead Line Survey › Line Design Technology.pdf

https://www.ajol.info/index.php/mjst/article/view/185781/175083

http://www.iqytechnicalcollege.com/185781-Article Text-472343-1-10-20190418 (1).pdf

https://www.mdpi.com/2072-4292/13/8/1571/pdf

http://www.iqytechnicalcollege.com/remotesensing-13-01571-v2 (2).pdf

https://www.researchgate.net/publication/303557327_Remote_sensing_methods_for_power_line_corridor_surveys

www.iqyrechnicalcollege.com/Matikainenetal-Remotesensingmethodsforpowerlinecorridorsurveys.pdf

UETDRDS014 Prepare and manage detailed construction plans for electrical power system infrastructure

https://www.pdfdrive.com/planning-of-electric-power-distribution-e33404975.html

http://www.iqytechnicalcollege.com/Planning of Electric Power Distribution (PDFDrive).pdf

https://www.pdfdrive.com/electric-power-system-planning-d39893329.html

http://www.iqytechnicalcollege.com/Planning of Electric Power Distribution (PDFDrive).pdf

Elements and Performance Criteria

ELEMENTS PERFORMANCE CRITERIA

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element.
1 Plan for and coordinate the design of customer substations	**1.1** Work health and safety (WHS)/occupational health and safety (OHS) practices/procedures and environmental and sustainable energy procedures, which may influence the design of customer substations, are reviewed and determined
	1.2 Purpose of the design is established and expected outcomes of the work are confirmed with appropriate personnel What is the purpose of the substation?  The purpose of a substation is **to 'step down' high voltage electricity from the transmission system to lower voltage electricity so it can be easily supplied to homes and businesses in the area through lower voltage distribution lines**.
	1.3 Organisational established procedures on policies and specifications for the design are obtained or established with appropriate personnel https://www.ausgrid.com.au/-/media/Documents/Technical-Documentation/NS/NS185.pdf www.iqytechnicalcollege.com/**NS185.pdf**
	1.4 Equipment/tools and personal protective equipment (PPE) are selected and coordinated based on specified requirements and established procedures https://www.substation-safety.com/latest-news/electric-substation-personal-protective-equipment-ppe/ http://www.iqytechnicalcollege.com/Electric Substation Personal Protective Equipment (PPE).pdf
	1.5 Work is prioritised and sequenced for the most efficient and effective outcome following consultation with others for completion within acceptable timeframes, to a quality standard and in accordance with established procedures https://www.youtube.com/watch?v=4jBXUqRT62E https://www.tasnetworks.com.au/config/getattachment/d6d8c42f-1a13-41d7-b2a0-1ee01a675bb0/Substation-Civil-Design-and-Construction-Standard-pdf.pdf http://www.iqytechnicalcollege.com/Substation-Civil-Design-and-Construction-Standard-pdf.pdf

	1.6	Risk control measures are identified, prioritised and evaluated against the work schedule https://www.transgrid.com.au/media/tipplrge/work-in-substations-general.pdf www.iqytechnicalcollege.com/**work-in-substations-general.pdf**
	1.7	Relevant work permits are secured to coordinate the performance of work according to requirements and/or established procedures https://www.transgrid.com.au/media/dpdkojzo/access-for-work-on-high-voltage-substation-apparatus.pdf http://www.iqytechnicalcollege.com/access-for-work-on-high-voltage-substation-apparatus.pdf
	1.8	Resources, including personnel, equipment, tools and PPE, required for the job are identified, scheduled and coordinated and confirmed safe and in technical working order https://www.youtube.com/watch?v=7Q-aVBv7PWM&vl=en https://electrical-engineering-portal.com/substation-basics www.iqytechnicalcollege.com/Substation Basic.zip
	1.9	Liaison and communication issues with other/authorised personnel, authorities, clients and landowners are resolved and activities coordinated to carry out work https://www.safetyandquality.gov.au/standards/nsqhs-standards/communicating-safety-standard www.iqytechnicalcollege.com/**Communicating for Safety Standard.pdf**
	1.10	Site is prepared according to the work schedule and to minimise risk and damage to property, commerce and individuals in accordance with established procedures https://www.latham-australia.com/blog/safety-measures-construction-site http://www.iqytechnicalcollege.com/11 Safety Measures Every Construction Site Should Have In Place.pdf
2 Carry out and coordinate the design of customer substations	**2.1**	Circuit/systems modelling is used to evaluate alternative proposals in accordance with established procedures https://www.pdfdrive.com/electric-power-substations-engineering-the-electric-power-engineering-e184841266.html http://www.iqytechnicalcollege.com/Electric Power Substations Engineering - The Electric Power Engineering (PDFDrive).pdf

2.2 WHS/OHS and sustainable energy principles, functionality and practices to reduce the incidence of accidents and minimise waste are incorporated into the project in accordance with requirements and/or established procedures

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4963541/

http://www.iqytechnicalcollege.com/Sustainability and prevention in occupational health and safety - PMC.pdf

2.3 Substation design decisions are made on the basis of safety and effective outcomes according to requirements and/or established procedures

https://www.electricalandcontrol.com/key-factors-to-consider-in-substation-design/

http://www.iqytechnicalcollege.com/Key Factors to Consider In Substation Design.pdf

2.4 Mathematical models of the customer substation are used to analyse the effectiveness of the finished project in accordance with requirements and established procedures

https://www.pdfdrive.com/mathematical-modeling-and-simulation-e34334406.html

http://www.iqytechnicalcollege.com/Mathematical Modeling and Simulation (PDFDrive).pdf

2.5 Technical advice is given to potential hazards, safety risks and control measures so that monitoring and preventative action can be undertaken and/or appropriate authorities consulted, where necessary, in accordance with requirements and established procedures

https://www.energycouncil.com.au/media/15808/eafhm_guideline_30_25-03-2019_web.pdf

http://www.iqytechnicalcollege.com/eafhm_guideline_30_25-03-2019_web.pdf

https://www.substation-safety.com/latest-news/safety-practices-substations/

http://www.iqytechnicalcollege.com/Safety Practices in Substations.pdf

2.6 Essential knowledge and associated skills are applied to analyse specific data and compare it with compliance specifications to ensure completion of the project within an agreed timeframe according to requirements

https://core.ac.uk/download/pdf/4267982.pdf

www.iqytechnicalcollege.com/**4267982.pdf**

2.7 Solutions to non-routine problems are identified and actioned using acquired essential knowledge and associated skills according to requirements

https://www.powerlink.com.au/sites/default/files/2018-06/Substation%20Asset%20Methodology%20Framework.pdf

http://www.iqytechnicalcollege.com/Substation Asset Methodology Framework.pdf

	2.8	Quality of work is monitored against personal performance agreement and/or established organisational and professional standards https://www.ergon.com.au/__data/assets/pdf_file/0003/146838/NI000401R122-Subs-Construction-Manual.pdf www.iqytechnicalcollege.com/**NI000401R122-Subs-Construction-Manual.pdf** https://electrical-engineering-portal.com/download-center/books-and-guides/power-substations/electric-power-quality www.iqytechnicalcollege.com/**ElectricPowerQuality.zip**
3 Complete and coordinate the design of customer substations	**3.1**	Final inspections of the design are undertaken to ensure it complies with all requirements and includes all specifications and documentations needed to complete the design brief https://www.transgrid.com.au/media/zgogqoqg/substation-primary-design-standard.pdf www.iqytechnicalcollege.com/**substation-primary-design-standard.pdf** https://yarratrams.com.au/media/2507/infrastructure-network-power-substation-design-and-construction-220419.pdf http://www.iqytechnicalcollege.com/substation-primary-design-standard.pdf
	3.2	Appropriate personnel are notified of completion and reports and/or completion documents are finalised https://www.westernpower.com.au/media/3695/distribution-substation-manual-substation-arrangements-20191220.pdf www.iqytechnicalcollege.com/**distribution-substation-manual-substation-arrangements-20191220.pdf**
	3.3	Reports and/or completion documents are submitted to relevant personnel/organisations for approval and, where applicable, statutory or regulatory approval https://public.wsu.edu/~campbelld/engl402/reportlecture.htm http://www.iqytechnicalcollege.com/Types of Reports_ Completion Reports and Feasibility Studies.pdf https://opentextbc.ca/projectmanagement/chapter/chapter-18-project-completion-project-management/ http://www.iqytechnicalcollege.com/18. Project Completion – Project Management – 2nd Edition.pdf
	3.4	Approved copies of design documents are issued and records are updated in accordance with established procedures

https://www.lawinsider.com/clause/design-development-documents-approval

http://www.iqytechnicalcollege.com/Design Development Documents Approval Sample Clauses _ Law Insider.pdf

Practical

https://mega.nz/folder/urBhXKga#bGXR7CRagW1vj0KwxNKndw

Other References

Advanced Diploma in Electricity Supply Industry (ESI)

Study Package (1)-OHS

Study Package (2)-Power System Planning

Study Package (3)-Testing

3-ESI Study Package 3 (5,15)

Study Package (4) Power Transformer

6-ESI Study Package 7 (4,8,11,13)

4-ESI Study Package 4 (7) + 11 (21)

Study Package (5) Machine Installation

3-ESI Study Package 3 (5,15)

Study Package (6+ 10) HV Equipments

24-ESI Study Package 33 (6)

Study Package (7) Drawing

4-ESI Study Package 4 (7) + 11 (21)

Study Package (8) Insulation

7-ESI Study Package 8 (12)

6-ESI Study Package 7 (4,8,11,13)

Study Package (9) Protection

26-ESI Study Package 5 (9)

8-ESI Study Package 9 (16)

Study Package (10) HV Equipments

Study Package (12) Harmonics

7-ESI Study Package 8 (12)

Study Package (13) Voltage Regulation

11-ESI Study Package 13 (23)

6-ESI Study Package 7 (4,8,11,13)

Study Package (15) Electrical Estimating

3-ESI Study Package 3 (5,15)

Study Package (16+17)-OHS

8-ESI Study Package 9 (16)

Study Package (19) Generator

15-ESI Study Package 19 (3132)

Study Package (20) Transmission System

Study Package (21+34)-Electrical Distribution

4-ESI Study Package 4 (7) + 11 (21)

Study Package (22) Generator

18-ESI Study Package 22 (35)

Study Package (23) Machine Rating

19-ESI Study Package 23 (36)

11-ESI Study Package 13 (23)

Study Package (24) Signal Communication

20-ESI Study Package 24 (38)

Study Package (25+27+31+32) Installation & Testing

Study Package (24) Modern Power System

Study Package (25+27+31+32) Installation & Testing

15-ESI Study Package 19 (3132)

21-ESI Study Package 26 (2)

21-ESI Study Package 26 (41)

Study Package (27) Relay

Study Package (28) Power Accessories

Study Package (34) Power Equipments Commissioning

Study Package (34) Equipments Commissioning

18-ESI Study Package 22 (35)