

Title:	Electrical Applications 1 APPROVED
Long Title:	Electrical Applications 1
Module Code:	ELEC6033
Credits:	5
NFQ Level:	Fundamental
Field of Study:	Electrical Engineering
Valid From:	Semester 1 - 2014/15 (September 2014)
Module Delivered in	3 programme(s)
Module Coordinator:	JOSEPH CONNELL
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Module Description:	This module develops the student's capacity for effective use of computer software, electrical design and skills pertinent to a career in electrical engineering. It encompasses applications and skills for engineering, it encourages efficient use of electrical knowledge and software tools.
Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Prepare documents and reports to electrical engineering standards (complying with the ETCl and IEC Regulations).
LO2	Use spreadsheets analysis on data and interpret results in numerical and graphical form.
LO3	Design and safely assemble electrical circuits using problem solving/faultfinding error techniques complying with the ETCl and IEC Regulations.
LO4	Safely record measurements from electrical circuits.
LO5	Design and apply logic for simple electrical circuits utilising Programmable Logic Controllers.
Pre-requisite learning	
Module Recommendations	
<i>This is prior learning (or a practical skill) that is strongly recommended before enrolment in this module. You may enrol in this module if you have not acquired the recommended learning but you will have considerable difficulty in passing (i.e. achieving the learning outcomes of) the module. While the prior learning is expressed as named CIT module(s) it also allows for learning (in another module or modules) which is equivalent to the learning specified in the named module(s).</i>	
No recommendations listed	
Incompatible Modules	
<i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module. You may not earn additional credit for the same learning and therefore you may not enrol in this module if you have successfully completed any modules in the incompatible list.</i>	
No incompatible modules listed	
Co-requisite Modules	
No Co-requisite modules listed	
Requirements	
<i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed. You may not enrol on this module if you have not acquired the learning specified in this section.</i>	
No requirements listed	
Co-requisites	
No Co Requisites listed	

Module Content & Assessment

Indicative Content

Report document

The concept and terminologies of the word processing that include: creating, editing and formatting documents and reports consisting of text, tables, equations and drawing produced in Microsoft Word

Technical Report

The concept and terminologies of the spreadsheet program that include: entering, deleting and relocating data, performing mathematical operations on data ; chart and graph creations.

Engineering Software Package

Gain knowledge and utilise electrical engineering packages for circuit design and PLC programming. Design simple electrical circuits (series, parallel etc..) in the software and simulate.

Circuit wiring

Arrange and assemble simple electrical circuits. Read and record values from voltmeters, ammeters and wattmeter readings safely.

PLC (programmable logic controllers)

Program simple electrical circuits and download/upload them to a PLC. Debug faults in the logic in monitor mode.

Assessment Breakdown

%

Course Work

100.00%

Course Work

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Written Report	Produce lab reports of various experiments including analysis of the results from the labs.	1,2	50.0	Every Second Week
Practical/Skills Evaluation	Design, assemble and test basic electrical circuits through practical labs and simulation software.	3,4,5	50.0	Every Week

No End of Module Formal Examination

Reassessment Requirement

Coursework Only

This module is reassessed solely on the basis of re-submitted coursework. There is no repeat written examination.

The institute reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time

<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lab	Practical assembly and debugging of electrical/electronic circuits. Utilise software packages to program PLCs and develop reports.	4.0	Every Week	4.00
Independent & Directed Learning (Non-contact)	Student review and study.	3.0	Every Week	3.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

Workload: Part Time

<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lab	Practical assembly and debugging of electrical/electronic circuits. Utilise software packages to program PLCs and develop reports.	4.0	Every Week	4.00
Independent & Directed Learning (Non-contact)	Student review and study.	3.0	Every Week	3.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

Module Resources
<i>Recommended Book Resources</i>
<ul style="list-style-type: none"> • W. Bolton, 2009, <i>Programmable Logic Controllers, Fifth Edition</i> [ISBN: 978-1856177511] • J.F. Whitfield, 2009, <i>Electrical Craft Principles, 5th Edition</i> [ISBN: 978-0863419324] • <i>Teach Yourself VISUALLY Office 2013</i>, 1 edition (March 18, 2013) Ed., Visual [ISBN: 978-1118517680]
<i>This module does not have any article/paper resources</i>
<i>Other Resources</i>
<ul style="list-style-type: none"> • Website: http://office.microsoft.com/ • Website: http://www.automation.siemens.com/

Module Delivered in			
Programme Code	Programme	Semester	Delivery
CR_EEPSY_8	<u>Bachelor of Engineering (Honours) in Electrical Engineering</u>	1	Mandatory
CR_EELEC_7	<u>Bachelor of Engineering in Electrical Engineering</u>	1	Mandatory
CR_EELEC_6	<u>Higher Certificate in Engineering in Electrical Engineering</u>	1	Mandatory