

<b>Title:</b>	Electrical Planning <b>APPROVED</b>
<b>Long Title:</b>	Electrical Installation Planning
<b>Module Code:</b>	ELEC6017
<b>Credits:</b>	5
<b>NFQ Level:</b>	Fundamental
<b>Field of Study:</b>	Electrical Engineering
<b>Valid From:</b>	Semester 1 - 2014/15 ( September 2014 )
<b>Module Delivered in</b>	<a href="#">3 programme(s)</a>
<b>Module Coordinator:</b>	JOSEPH CONNELL
<b>Module Author:</b>	
<b>Module Description:</b>	This module will familiarise the student with techniques, procedures and methods used in the Electrical Consulting and Contracting Industry
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Interpret safety regulations & standards and behave in a safe manner in the electrical working environment
LO2	Explain lighting design and make selections of proprietary lighting fittings for general and emergency lighting.
LO3	Examine fire standards and classifications.
LO4	Choose an appropriate life safety system for an Electrical Services Installation
LO5	Assist in the design and selection of electrical distribution equipment, cables, metering and data and voice network infrastructure
<b>Pre-requisite learning</b>	
<b>Module Recommendations</b>	
<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	
<b>Incompatible Modules</b>	
<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	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Requirements</b>	
<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	
<b>Co-requisites</b>	
No Co Requisites listed	

**Module Content & Assessment**

Indicative Content				
<b>Lighting</b> Principles of lighting. Method of calculating artificial lighting				
<b>Fire Alarms</b> Design of systems, principles of operation. Types of detector and area of operation for the protection of (i) life and (ii) property				
<b>Emergency Lighting</b> Design of systems-maintained and non maintained. Standby, sustained luminaires. Centralised and non-centralised systems. Slave and non slave luminaires. Emergency lighting calculations.				
<b>Distribution/Metering</b> Different types of tariff structure. Utility company requirements regarding metering. Low voltage and medium voltage distribution and switchgear design. Electro Technical Council of Ireland (ETCI) requirements. Cable sizing. Transformer sizing, short circuit and fault level calculations. Power factor requirements and equipments for the different tariff structures.				
<b>UPS equipments</b> No break equipment. static and rotary applications of both types. Frequency conversion and different methods of achieving it. Choice of converter and sizing.				
<b>Electrical Contracting</b> Bill of materials. Form of tender. Specifications. Preparation and submission of tenders. Price escalation clauses. The roles of the architect, consulting engineer, technician, contractor, safety officer and insurance officer.				
<b>Network Analysis</b> Preparation of critical paths and bar charts for different projects				
<b>Data and Voice network Infrastructure</b> Data and Voice network Infrastructure. Hardware and cables, conduit and trunking (dado, wall and underfloor)				
<b>Standby Generators</b> Sizing and duty. Room and fuel facility. Peak loading. use with other technologies eg Hydro, wind and CHP (combined heat and power)				
<b>Computer Rooms</b> Provision of services, power and fire detection.				
Assessment Breakdown				%
Course Work				30.00%
End of Module Formal Examination				70.00%
Course Work				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Short Answer Questions	Assessment of lecture material covered weeks 1 to 6	1,2,5	15.0	Week 7
Written Report	Written report on a class visit to an Electrical Services Installation Site	1,2,3,4,5	15.0	Week 10
End of Module Formal Examination				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	End-of-Semester Final Examination	1,2,3,4,5	70.0	End-of-Semester
Reassessment Requirement				
<b>Repeat examination</b> Reassessment of this module will consist of a repeat examination. It is possible that there will also be a requirement to be reassessed in a coursework element.				

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

**Module Workload**

<b>Workload: Full Time</b>				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Electrical Theory	2.0	Every Week	2.00
Lab	Computer demonstration and simulation	2.0	Every Week	2.00
Independent & Directed Learning (Non-contact)	Further study of class notes and recommended resources	3.0	Every Week	3.00
Total Hours				7.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

**This module has no Part Time workload.**

Module Resources
<i>Recommended Book Resources</i>
<ul style="list-style-type: none"> <li>• ETCI 2008, <i>National Rules for Electrical Installations.ET101</i>, fourth Ed., Electrotechnical Council of Ireland Dublin</li> <li>• CIBSE 2004, <i>Electricity in Buildings</i>, CIBSE Guide K Ed. [ISBN: 1-903287-26]</li> </ul>
<i>Supplementary Book Resources</i>
<ul style="list-style-type: none"> <li>• Geoffrey Stokes 2008, <i>Handbook of Electrical Installation Practise</i>, fourth Ed., Blackwell Science UK [ISBN: 1405147679]</li> </ul>
<i>This module does not have any article/paper resources</i>
<i>Other Resources</i>
<ul style="list-style-type: none"> <li>• website: Cooper Lighting and Safety (UK)<i>Lighting /Firealarms</i>, <a href="http://www.cooper-safety.com">www.cooper-safety.com</a>, UK</li> <li>• website: Schneider Electric<i>Electrical equipment</i>, <a href="http://www.schneider-electric.co.uk">www.schneider-electric.co.uk</a>, UK</li> <li>• Website: Mitsubishi<i>Electrical Equipment</i>, <a href="http://www.mitsubishielectric.co.uk">www.mitsubishielectric.co.uk</a>, UK</li> </ul>

Module Delivered in			
Programme Code	Programme	Semester	Delivery
CR_EEPSY_8	<a href="#"><u>Bachelor of Engineering (Honours) in Electrical Engineering</u></a>	3	Mandatory
CR_EELEC_7	<a href="#"><u>Bachelor of Engineering in Electrical Engineering</u></a>	3	Mandatory
CR_EELEC_6	<a href="#"><u>Higher Certificate in Engineering in Electrical Engineering</u></a>	3	Mandatory