



Title:	Elect Installation Theory	APPROVED
Long Title:	Elect Installation Theory	
Module Code:	ELEC6001	
Credits:	5	
NFQ Level:	Fundamental	
Field of Study:	Electrical Engineering	
Valid From:	Semester 1 - 2017/18 (September 2017)	
Module Delivered in	3 programme(s)	
Module Coordinator:	JOSEPH CONNELL	
Module Author:	GERARD GEANEY	
Module Description:	This module studies electrical power systems to broaden the student's understanding of power in electrical installations. It introduces national rules and regulations/ international standards.	
Learning Outcomes		
On successful completion of this module the learner will be able to:		
LO1	Apply knowledge of materials, equipment and processes to the design of electrical systems.	
LO2	Select wiring systems and cable management systems.	
LO3	Implement standardised methods to determine cable current carrying capacities.	
LO4	Evaluate a completed installation against appropriate manufacturer recommendations, industry standards, codes of practice, and relevant Safety Acts.	
LO5	Apply standardised tests on completed domestic/commercial/industrial electrical installations.	
Pre-requisite learning		
Module Recommendations		
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).		
12525	ELEC6005	Electrical Power Systems
Incompatible Modules		
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.		
No incompatible modules listed		
Co-requisite Modules		
No Co-requisite modules listed		
Requirements		
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.		
No requirements listed		
Co-requisites		
No Co Requisites listed		

Module Content & Assessment

Indicative Content

Common materials

Consideration of materials as conductors, or insulators, mechanical protection and cable management. Applications in cables, wiring systems, accessories, appliances, switchgear. IP classification system. CENELEC cable code.

Wiring systems

Cables for domestic and similar installations. Metallic and non-metallic sheathed cables. Armoured cables. Conduit and trunking systems. Cable management systems. Specialised cables, MICC, FP, LSOH. Enclosure capacity determination. Economic, aesthetic and environmental considerations.

Cable sizing.

Consideration of factors influencing cable ratings. Cable current carrying capacity determined to Annex A52C of ET101:2008. Voltage drop determined to Annex A52E of ET101:2008 Basic short-circuit calculations. Verification of cable withstand capabilities under short-circuit conditions.

Rules and standards.

ETCI rules ET101:2008. Safety, Health and Welfare at Work Regulations. Building Regulations. Applicable EN and IS standards.

Testing.

Verification and testing of domestic and similar installations to ET101:2008, part 6. Use of Annexes 61A thro' 61F for above.

Assessment Breakdown

	%
Course Work	50.00%
End of Module Formal Examination	50.00%

Course Work

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Short Answer Questions	Develop and design common electrical distribution systems for industrial /commercial and domestic applications.	1,2,4	15.0	Week 4
Short Answer Questions	Develop and calculate appropriate wiring and distribution systems for commercial / domestic and industrial installations and the tests required in compliance with the relevance rules and standards	1,2,4,5	15.0	Week 8
Practical/Skills Evaluation	Demonstrate and perform electrical tests on typical commercial / domestic and industrial installations in compliance with the relevant rules and standards associated with the installation.	1,2,3,4,5	20.0	Every Week

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	End-of-Semester Final Examination	1,2,3,5	50.0	End-of-Semester

Reassessment Requirement

Repeat examination

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

Workload: Full Time				
<i>Workload Type</i>	<i>Workload Description</i>	<i>Hours</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	Classroom theory + worked examples	3.0	Every Week	3.00
Lab	practical skills evaluation	1.0	Every Week	1.00
Independent & Directed Learning (Non-contact)	No Description	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"> • Electro-technical Council of Ireland 2008, <i>National Rules for Electrical Installations</i>, 4th Ed., Electro-technical Council of Ireland
<i>Supplementary Book Resources</i>
<ul style="list-style-type: none"> • Brian Scaddan IEng; MIIE (elec), 2011, <i>Electrical Installation Work, Seventh Edition</i> [ISBN: 978-0--08-096981-7]
<i>This module does not have any article/paper resources</i>
<i>Other Resources</i>
<ul style="list-style-type: none"> • http://www.etci.ie: etci 2011, <i>National rules for electrical installations</i> , etci

Module Delivered in			
Programme Code	Programme	Semester	Delivery
CR_EEPSY_8	<u>Bachelor of Engineering (Honours) in Electrical Engineering</u>	2	Mandatory
CR_EELEC_7	<u>Bachelor of Engineering in Electrical Engineering</u>	2	Mandatory
CR_EELEC_6	<u>Higher Certificate in Engineering in Electrical Engineering</u>	2	Mandatory