



Title:	Industrial Electronics 1	APPROVED
Long Title:	Industrial Electronics 1	
Module Code:	ELEC6024	
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	
Module Author:		
Module Description:	This module provides the student with an introductory knowledge in electronics in preparation for work in the industrial sector.	
Learning Outcomes		
On successful completion of this module the learner will be able to:		
LO1	Identify commonly used electronic components and explain ratings.	
LO2	Investigate potential divider networks and RC timing applications.	
LO3	Describe the characteristics of Si, zener and LED diodes.	
LO4	Outline the operation of rectifier circuits and waveforms.	
LO5	Build and test circuits in simulation software environment.	
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).		
No recommendations listed		
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

Electronic Components

Unit sizes, power, voltage and current ratings.

Basic circuits

Current limiting, voltage divider and RC applications.

Diodes

LED's, Si and Zener diodes.

Rectification

Half-wave, full-wave rectifiers and smoothing.

Laboratory Programme

Simulate, construct and test various circuits.

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
Practical/Skills Evaluation	Practical application of theory in labs	1,2,3,4,5	30.0	Every Week

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	End-of-Semester Final Examination	1,2,3,4	70.0	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	Class-based instruction and discussion	2.0	Every Week	2.00
Lab	Industrial Electronics Circuit Analysis and Verification	2.0	Every Week	2.00
Independent & Directed Learning (Non-contact)	Revision of theory, preparation for and processing of practicals	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>
• Thomas L. Floyd 2013, <i>Electronic Devices</i> , 9 Ed., Pearson [ISBN: 978-1292025643]
<i>Supplementary Book Resources</i>
• Robert L. Boylestad 2013, <i>Introductory Circuit Analysis</i> , 12 Ed., Pearson [ISBN: 1292024003]
<i>This module does not have any article/paper resources</i>
<i>This module does not have any other resources</i>

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