

Module Title:	Industrial Electronics	Level:	5	Credit Value:	20
----------------------	------------------------	---------------	---	----------------------	----

Module code:	ENG52C	Is this a new module?	YES	Code of module being replaced:	
---------------------	--------	------------------------------	-----	---------------------------------------	--

Cost Centre:	GAME	JACS3 code:	F311
---------------------	------	--------------------	------

Trimester(s) in which to be offered:	1, 2 & 3	With effect from:	September 16
---	----------	--------------------------	--------------

School:	Applied Science, Computing & Engineering	Module Leader:	Andrew Sharp
----------------	--	-----------------------	--------------

Scheduled learning and teaching hours	60 hrs
Guided independent study	140 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered	Core	Option
FdEng Industrial Engineering	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Pre-requisites
None

Derogations
A derogation from regulations has been approved for this module which means that whilst the pass mark is 40%, each element of assessment requires a minimum mark of 30% for the module to be passed overall.

Office use only

Initial approval June 16

APSC approval of modification *Enter date of approval*

Have any derogations received SQC approval?

Version 1

Yes No

Module Aims

Intended Learning Outcomes

Key skills for employability

- KS1 Written, oral and media communication skills
- KS2 Leadership, team working and networking skills
- KS3 Opportunity, creativity and problem solving skills
- KS4 Information technology skills and digital literacy
- KS5 Information management skills
- KS6 Research skills
- KS7 Intercultural and sustainability skills
- KS8 Career management skills
- KS9 Learning to learn (managing personal and professional development, self-management)
- KS10 Numeracy

At the end of this module, students will be able to

Key Skills

At the end of this module, students will be able to		Key Skills	
1	Analyse engineering systems/equipment and formulate opinions relating to performance and efficiency		
		KS6	
2	Apply scientific and engineering formulae to solve mathematical problems.		
		KS10	
3	Research and critically appraise information, for a given engineering science topic, in order to concisely provide a written summery of findings	KS1	
		KS6	
4	Solve engineering problems by applying practical skills.		
		KS3	

Assessment:

Assessment 1 – Students will be expected to produce a portfolio of their laboratory work. The portfolio should include theory, results and conclusions.
Assessment 2 – Students will sit a 1.5 hour in class test to assess their underpinning knowledge of the subject matter.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1, 3 and 4	Portfolio	60		2000
2	2	In-class test	40	1.5	

Learning and Teaching Strategies:

Lectures - presentation of theory, facts and concepts in order to convey critical information. Interaction or active learning should be implemented to develop an understanding of principles and concepts and stimulate discussion.

Laboratory work – A series of experiments embedding principles with practical considerations will be implemented. The experiments could involve practically building and testing circuits or simulation of circuits using software packages.

Syllabus outline:

- Potential Dividers
- Voltage Regulators
- Analogue to Digital Converters
- Digital to Analogue Converters
- Relays
- Operational Amplifiers and their applications
- DC to DC converters

Bibliography:

Essential reading

Beards P.H (1999) *Digital Electronics and Analogue Electronics*, London Prentice Hall

Other indicative reading

Maloney T.J. (1985) *Industrial Solid State Electronics: Devices and Systems*, Prentice Hall
Bird J (2010) *Electrical and Electronic Principles and Technology*, Newnes