

Short Title:	Interactive Embedded Systems APPROVED
Full Title:	Interactive Embedded Systems
Language of Instruction:	English

Module Code:	INES H1000
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Credits:	5
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Field of Study:	Electronics and automation
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Module Delivered in	5 programme(s)
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Reviewed By:	JAMES WRIGHT
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Module Author:	MICHAEL GILL
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Module Description:	This module is a practical introduction to embedded computer programming and computer interfacing. Students will learn to write simple programs using the MSP430 Launchpad programming environment (or similar, e.g. Arduino) which is based on the C programming language. Problem solving will be explored while connecting external devices to the computer system.
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Learning Outcomes	
<i>On successful completion of this module the learner will be able to:</i>	
LO1	Draw a block diagram of an embedded computer system.
LO2	Describe the resources available such as input/output connections.
LO3	Connect external devices to the embedded system.
LO4	Use programming constructs such as loops, decisions, functions, arrays.
LO5	Describe data types and their limitations.
LO6	Write programs which interact with and control external devices.

Module Content & Assessment

Course Work				
<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Continuous Assessment	Exercise	1	5.00	Week 2
Continuous Assessment	Exercise	2	5.00	Week 3
Continuous Assessment	Exercise	3	5.00	Week 4
Continuous Assessment	Midterm Exam	1,2,3,4	10.00	Week 6
Continuous Assessment	Exercise	3,4	5.00	Week 9
Continuous Assessment	Exercise	3,4,5	5.00	Week 10
Continuous Assessment	Exercise	6	5.00	Week 11

End of Module Formal Examination				
<i>Assessment Type</i>	<i>Assessment Description</i>	<i>Outcome addressed</i>	<i>% of total</i>	<i>Assessment Date</i>
Formal Exam	End-of-Semester Final Examination	1,2,4,5,6	60.00	End-of-Semester

TU Dublin – Tallaght Campus 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>
Lecturer/Lab	No Description	4.00	Every Week	4.00
Independent Learning Time	Self Study, Reflection	3.00	Every Week	3.00
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>
Lecturer/Lab	No Description	4.00	Every Week	4.00
Independent Learning Time	Self Study, Reflection	3.00	Every Week	3.00
Total Weekly Learner Workload				7.00
Total Weekly Contact Hours				4.00

Module Resources

Recommended Book Resources

Adrian Fernandez, Dung Dang 2013, *Getting Started with the MSP430 Launchpad*, 1 Ed., Elsevier / Newnes [ISBN: 10:0-12-411600-0]

This module does not have any article/paper resources

This module does not have any other resources

Module Delivered in

Programme Code	Programme	Semester	Delivery
TA_EAELE_B	Bachelor Degree in Engineering (Honours) in Electronic Engineering	2	Mandatory
TA_EAENS_B	Bachelor of Engineering (Hons) in Engineering Software	2	Mandatory
TA_EAELE_D	Bachelor of Engineering in Electronic Engineering	2	Mandatory
TA_EAENS_D	Bachelor of Engineering in Engineering Software	2	Mandatory
TA_EELEC_C	Higher Certificate in Engineering in Electronic Engineering	2	Mandatory