

### Summary Information

Module Code	7430MESI
Formal Module Title	Embedded Systems
Owning School	Engineering
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

### Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

### Learning Methods

Learning Method Type	Hours
Lecture	22
Practical	11
Tutorial	11

### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

### Aims and Outcomes

Aims	To provide both the theoretical and practical skills in the design and development of advanced embedded systems.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Design and implement complex integrated hardware and software solutions to engineering problems
MLO2	2	Critically compare and contrast the suitability to specific engineering applications of microprocessor hardware
MLO3	3	Critically evaluate the use of real-time operating systems.
MLO4	4	Critically analyse the security implications of embedded applications

### Module Content

Outline Syllabus	Development Lifecycle: Design, Development, Testing, Maintenance. Flow Charts, Pseudo code Microprocessor Hardware: Functionality, capability, performance, energy considerations RTOS: Functionality, Security, Driver support, execution time, Security: CIA, Threats, protection, Maintenance/Updates, overheads SCADA. Interconnections & interfaces Networking
Module Overview	
Additional Information	This module will provide students with the capability to design and develop an embedded solution to an engineering problem. United Nations Sustainable Development Goals: 4. Quality Education 9. Industry, Innovation and Infrastructure

### Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Examination	70	2	MLO2, MLO3, MLO4
Report	Laboratory demo and report	30	0	MLO1

### Module Contacts

#### Module Leader

Contact Name	Applies to all offerings	Offerings
Ronan McMahon	Yes	N/A

#### Partner Module Team

Contact Name	Applies to all offerings	Offerings
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