

Embedded Systems

Module Information

2022.01, Approved

Summary Information

Module Code	6302SBC
Formal Module Title	Embedded Systems
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Sino British College of USST

Learning Methods

Learning Method Type	Hours
Lecture	11
Practical	55

Module Offering(s)

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

Aims and Outcomes

Aims	To provide both the theoretical and practical skills in the design and development of advanced embedded systems.
------	--

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	Apply the software development lifecycle to embedded projects.
MLO3	3	Compare and contrast microprocessor hardware as to its suitability to specific engineering applications.
MLO4	4	Evaluate the use of real-time operating systems.
MLO5	5	Analyse the security implications of network connectivity in embedded applications.

Module Content

Outline Syllabus	Design Application: Circuit Schematics, Flow charts, Pseudo code. Hardware design.High level language constructs: variables, conditional statements, loops, stringhandling, input-output, data structures, classes, inheritance, file handling, functions, Arrays, conditional statements, loops, string handling, input-output, data structures, functions.Development Lifecycle: Design, Development, Testing, Maintenance.Microprocessor Hardware: Power, price, energy, capability.RTOS: Cost, Security, Driver support, development time.Security: Hacking threats, Maintenance/Updates, SCADA.
Module Overview	
Additional Information	This module will provide students with the capability to design and develop an embedded solution to an engineering problem.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Exam	70	2	MLO3, MLO4, MLO5
Report	Embedded Systems Project	30	0	MLO1, MLO2, MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Russell English	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
--------------	--------------------------	-----------