Module Proforma

Approved, 2022.02

Summary Information

Module Code	4605IYO
Formal Module Title	Software Development for Embedded Systems
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 4
Grading Schema	40

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Lonnie Readioff	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Mohamed Kara-Mohamed	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings

Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

Partner Teaching Institution

Institution Name
Study Group

Learning Methods

Learning Method Type	Hours
Lecture	12
Tutorial	24

Module Offering(s)

Offering Code	Location	Start Month	Duration
APR-PAR	PAR	April	12 Weeks
JAN-PAR	PAR	January	12 Weeks

Aims and Outcomes

Aims	Provide an overview of the operation of modern microprocessors/microcontrollers and the mechanisms used to represent and process information. Design and implement applications written in both low level and high level languages.

Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Describe the techniques applied to represent information within a Microprocessor. Describe the instruction set of a computer contrasting RISC and CISC approaches.
MLO2	Identify the fundamental components of an embedded processor. Demonstrate an understanding of the software used to drive an Embedded system.
MLO3	Describe the role of modern Operating Systems in embedded, mobile, desktop and server environments.
MLO4	Specify and design embedded applications, then implement them utilising high or low level languages.

Module Content

Outline Syllabus
Binary, HEX, 2s Complement, Number endianness, IEEE 754, ASCII, UNICODE. Processor core and cache hierarchies, Buses, Memory Organisation.

Module Overview

Additional Information
This module introduces the fundamentals of embedded systems architecture and the development of high level software.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Exam	Exam	60	2	MLO3, MLO2, MLO1, MLO4
Report	Design and Programming	40	0	MLO1, MLO2, MLO4