Liverpool John Moores University

Title:	Microprocessors Based Systems
Status:	Definitive
Code:	**5078ENG** (116949)
Version Start Date:	01-08-2018
Owning School/Faculty:	Electronics and Electrical Engineering
Teaching School/Faculty:	Electronics and Electrical Engineering

Team	Leader
Ronan McMahon	Y
Princy Johnson	

Academic Level:	FHEQ5	**Credit Value:**	20	**Total Delivered Hours:**	75
Total Learning Hours:	200	**Private Study:**	125		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Practical	24
Seminar	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam		60	3
Technology	Tech		20	
Technology	Tech		20	

Aims

To enhance knowledge and understanding of microprocessor based-system architecture, the techniques and methods for interfacing with microprocessor based-systems

Learning Outcomes

After completing the module the student should be able to:

1	Design and test programs using PIC specific 'C'.
2	To develop and execute simple applications using a standard PIC development board and associated accessories.
3	Design/test a function/ladder logic program for an automation system/process
4	Interface a Programmable Logic Controller to a process

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Exam	1	2	3	4
Technology 1	1	2		
Technology 2	3	4		

Outline Syllabus

Review Typical Microprocessor-based system architecture; Memory and I/O sub-systems; Digital to analogue conversion; Analogue to digital conversion; Microprocessor-based system interfacing and data transfer; C Programming and PIC specific C programming; Programmable Logic Controller evolution and structure; Basic logic functions and ladder logic programming; Combinational and sequential problems;
Programmable Logic Controller functions

Learning Activities

Series of Lectures, tutorials, seminars and practical classes

Notes

This module develops students learning in microprocessor based systems. It also introduces PLCs and associated programming. The module will afford students the opportunity to develop integrated hardware and software solutions.