

Liverpool John Moores University

Title: MICROCONTROLLERS AND SYSTEM INTEGRATION
Status: Definitive
Code: **5023TECH** (105426)
Version Start Date: 01-08-2016

Owning School/Faculty: Electronics and Electrical Engineering
Teaching School/Faculty: Electronics and Electrical Engineering

Team	Leader
Princy Johnson	Y

Academic Level: FHEQ5 **Credit Value:** 24 **Total Delivered Hours:** 62
Total Learning Hours: 240 **Private Study:** 178

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Practical	24
Tutorial	12

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	50	2
Essay	AS2	Coursework 1	25	
Essay	AS3	Coursework 2	25	

Aims

To enhance knowledge and understanding of Microcontrollers, the techniques and methods for interfacing with them.

Learning Outcomes

After completing the module the student should be able to:

- 1 Identify and describe the fundamental components of a Microcontroller, a typical architecture and associated instruction set.
- 2 Identify and describe Microcontroller based memory subsystems, I/O interfacing and data transfer.
- 3 Design/test programs using PIC specific Flowcode, and 'C'.
- 4 Develop and execute simple applications using a standard PIC development board and associated accessories.

Learning Outcomes of Assessments

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

EXAM	1	2	3
CW	3		
CW	3	4	

Outline Syllabus

Typical Microcontroller architecture
Digital to analogue and Analogue to Digital conversion.
Microcontroller -based system interfacing and data transfer
LABVIEW or similar for programming and integration
C Programming and PIC specific programming
Basic logic functions and ladder logic programming
Combinational and sequential problems

Learning Activities

By a series of lectures, tutorials and practical classes

Notes

This module extends the knowledge of Microcontrollers, includes their programming and interfacing.