Liverpool John Moores University

Title:	Microprocessors and C programming
Status:	Definitive
Code:	**4038ENG** (116938)
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
Ronan McMahon	

Academic Level:	FHEQ4	**Credit Value:**	20	**Total Delivered Hours:**	96
Total Learning Hours:	200	**Private Study:**	104		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	22
Practical	24
Seminar	24
Tutorial	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam		50	2
Technology	Project		25	
Technology	Simple C		25	

Aims

Introduce students to the structure and operation of microprocessor systems. Introduce programming in Assembly level programming. Introduce basic C language programming

Learning Outcomes

After completing the module the student should be able to:

1   Describe how data and code are represented in a computer system and manipulate the various numbers bases that are used
2   Identify and describe the fundamental components of a Microcomputer, a typical Microprocessor architecture, Microprocessor peripherals, memory types, I/O and data transfer
3   Describe the instruction set and execution cycle
4   Write simple programmes using C and assembler
5   Interact with the operating system
6   Produce a software application to solve a technical problem

Learning Outcomes of Assessments

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

Exam	1	2	3
Technology	4	5	
Technology	4	5	6

Outline Syllabus

Review of Number Systems; The fundamental components of a Microcomputer System; Introduction to a typical Microprocessor architecture; Memory sub-systems; Microprocessor I/O; Peripheral Devices; Interfacing and data transfer; Assembly Language Programming

Use of Windows based software; The programming environment; Programming fundamentals, data types, variables, objects, assigning properties, programme statements; Conditional statements and constructs; Looping or decision making statements and constructs; Arrays, strings and structures; Functions, file I/O; Bit manipulation.

Learning Activities

Series of Lectures, tutorials, seminars and practical classes

Notes

This module introduces students to the structure and operation of microprocessor systems. It also introduces programming in 2 languages. Assembly level

programming supports the architecture and internal operation of the microprocessor. C language is used throughout the programme to solve engineering problems.