Liverpool John Moores University

Title:	MICROPROCESSORS
Status:	Definitive
Code:	**4002ENG** (105217)
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:	FHEQ4	**Credit Value:**	12	**Total Delivered Hours:**	50
Total Learning Hours:	120	**Private Study:**	70		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Practical	12
Tutorial	12

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Exam	50	2
Essay	AS2	Mini project in the laboratory class	50	

Aims

To develop and enhance knowledge and understanding of data manipulation, presentation, data transfer and execution in microprocessor systems;
To develop and enhance knowledge and understanding of the components and the architecture of Microcomputer systems;
To develop practical skills in the use of systematic programming logic and

appropriate programming language to write, test and execute appropriate programs to solve problems;
To develop practical skills in the use of PIC micro development board and relevant laboratory equipments to test the programs for problems involving engineering applications.

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 and associated instruction set
3	Describe how instructions are executed in a fetch - execution cycle in a Microprocessor
4	Identify and describe different Microprocessor peripherals, memory types, I/O and data transfer
5	Perform simple programming using 'Assembly Language' and to construct and execute a simple application using a standard Microprocessor kit

Learning Outcomes of Assessments

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

EXAM	1	2	3	4
CW	3	5		

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

Learning Activities

Series of Lectures, tutorial and practical classes

Notes

This is a core module for level 1 of B.Eng. students and is intended to give them a fundamental knowledge in the basic components and processes involved in Microprocessor based systems and to provide a basic understanding and knowledge of theory surrounding use of computers and programming languages for practical engineering applications.