Liverpool John Moores University

Title:	MICROCONTROLLER BASED PROGRAMMING
Status:	Definitive
Code:	**5507TECSBC** (113895)
Version Start Date:	01-08-2016
Owning School/Faculty:	Electronics and Electrical Engineering
Teaching School/Faculty:	The Sino-British College

Team	Leader
Princy Johnson	Y

Academic Level:	FHEQ5	**Credit Value:**	12	**Total Delivered Hours:**	35
Total Learning Hours:	120	**Private Study:**	85		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Practical	20
Tutorial	15

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Coursework	30	
Report	AS2	Coursework	30	
Report	AS3	Mini Project	40	

Aims

The module aims to develop the knowledge and practical skills in the programming and application of embedded microcontrollers.

Learning Outcomes

After completing the module the student should be able to:

1	Design and implement a microcontroller based computer program in a high level language.
2	Design and implement a microcontroller based computer program in a low level language.
3	Design and implement an embedded microcontroller system to monitor and control a process

Learning Outcomes of Assessments

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

CW	1		
CW	2		
mini project	1	2	3

Outline Syllabus

High level language constructs: variables, conditional statements, loops, string handling, input-output, arrays.
Assembly language constructs: variables, conditional, looping, input-output.
Microcontroller specific programming: accessing registers, checking flags, hardware interrupt routines.
Interfacing the microcontroller to: LCD, seven segment displays, LEDs, ADC, DAC, UART, keypad.

Learning Activities

By a combination of tutorials and laboratory design assignments.

Notes

This Level 2 module extends the knowledge of microcontrollers, including their programming and interfacing.