

### Summary Information

Module Code	4510USST
Formal Module Title	Microprocessors and Software
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 4
Grading Schema	40

### Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

### Partner Teaching Institution

Institution Name
University of Shanghai For Science and Technology

### Learning Methods

Learning Method Type	Hours
Lecture	11
Practical	55

### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-PAR	PAR	January	12 Weeks

## Aims and Outcomes

Aims	Provide an overview of the operation of modern microprocessors/microcontrollers and the mechanisms used to represent and process information. Design and implement applications written in both low level and high level languages.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Appraise the techniques applied to represent information within a Microprocessor and the instruction set of a computer contrasting RISC and CISC approaches.
MLO2	2	Identify the fundamental components of a Microprocessor and their associated registers.
MLO3	3	Discuss the role of modern Operating Systems in embedded, mobile, desktop and server environments.
MLO4	4	Specify and design microprocessor applications, then implement them utilising high or low level languages

## Module Content

Outline Syllabus	Binary, HEX, 2s Complement, Number endianness, IEEE 754, ASCII, UNICODE.Processor core and cache hierarchies, Buses, Memory Organisation, Cache Coherency, Multicore, 80% 20% ratio.Application Scheduling, Security, Interrupt Handling, Libraries, Communications.Variables, Arrays, Iteration, Selection, Interaction with I/O, Structures, Flow charts.
Module Overview	
Additional Information	This module introduces the fundamentals of Computer architecture and the development of High level software.

## Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Exam	Exam	70	2	MLO1, MLO2, MLO4, MLO3
Report	Application design	30	0	MLO1, MLO2, MLO4

## Module Contacts

### Module Leader

Contact Name	Applies to all offerings	Offerings
Qian Zhang	Yes	N/A

### Partner Module Team

Contact Name	Applies to all offerings	Offerings
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