

# Computer Architecture

## Module Information

2022.01, Approved

### Summary Information

Module Code	5604TECYPC
Formal Module Title	Computer Architecture
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

### Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

### Partner Teaching Institution

Institution Name
YPC International College (Kolej Antarabangsa YPC)

### Learning Methods

Learning Method Type	Hours
Lecture	36
Tutorial	36

### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-PAR	PAR	September	12 Weeks

## Aims and Outcomes

Aims	The aim of the module is to enable students to gain an overview of computer architecture at the hardware and software levels.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	State the operation and design of logic gates. Use Boolean algebra in representing logic circuit.
MLO2	2	Explain computer architecture in terms of processor, memory, bus, interconnection, machine instruction cycle and different I/O devices.
MLO3	3	Explain principles of operating systems and their operation via processes, threads and scheduling.
MLO4	4	Explain the role of different languages ranging from machine languages to higher level programming languages and the relationships between the different languages and their use of resources such as memory.

## Module Content

Outline Syllabus	Logic circuits: The use of Boolean algebra to write equations that describe logic circuits and the basic techniques used to manipulate Boolean equations. The design and Construction of Logic circuits, both synchronous and asynchronous, including encoders, decoders and adders. Hardware: processor design and operation, memory and memory organization, I/O devices and peripherals, bus architectures, fetch-execute cycle. Operating systems: The role of the operating system, resource management, processes, threads and scheduling. Language systems: different language systems from machine code to assembler and operating system and high level programming languages and the software to bridge between them.
Module Overview	
Additional Information	This module provides an overview of logic circuits, hardware, operating systems and language systems in computer architectures. For first assessment (coursework), the student have to produce digital design to display year the coursework was done followed by their student ID and the second assessment the student seat for examination.

## Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Portfolio	Digital Design	50	0	MLO1
Exam	Examination	50	2	MLO2, MLO3, MLO4

## Module Contacts

### Module Leader

Contact Name	Applies to all offerings	Offerings
Karl Jones	Yes	N/A

**Partner Module Team**

Contact Name	Applies to all offerings	Offerings
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