

Liverpool John Moores University

Title: Computer Architecture
Status: Definitive
Code: **5604TECYPC** (121717)
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering
Teaching School/Faculty: YPC International College (Kolej Antarabangsa YPC)

Team	Leader
Karl Jones	Y

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 74
Total Learning Hours: 200 **Private Study:** 126

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	36
Tutorial	36

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Technology	AS1	Digital Design	50	
Exam	AS2	Examination	50	2

Aims

The aim of the module is to enable students to gain an overview of computer architecture at the hardware and software levels.

Learning Outcomes

After completing the module the student should be able to:

- 1 State the operation and design of logic gates. Use Boolean algebra in representing logic circuit.
- 2 Explain computer architecture in terms of processor, memory, bus, interconnection, machine instruction cycle and different I/O devices.
- 3 Explain principles of operating systems and their operation via processes, threads and scheduling.
- 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.

Learning Outcomes of Assessments

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

Digital Design	1		
Examination	2	3	4

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.

Learning Activities

The module consists of lectures which will cover areas listed under Learning Outcomes. Tutorials and practicals will follow lectures with the tutorial and practical activities covering the topic covered in the preceding lecture.

Notes

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.