

Liverpool John Moores University

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Title: Computer Architecture
Status: Definitive
Code: **5614TECYPC** (129186)
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:** 10 **Total Delivered Hours:** 44
Total Learning Hours: 100 **Private Study:** 56

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	24
Tutorial	18

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	100	2

Aims

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

Learning Outcomes

After completing the module the student should be able to:

- 1 Understand the digital representation of data in a computer system
- 2 State the operation and design of logic gates to use Boolean algebra in representing logic circuit
- 3 Explain computer architecture in terms of processor, memory, bus, interconnection, machine instruction cycle and different I/O devices
- 4 Explain principles of operating systems and their operation via processes, threads and scheduling

Learning Outcomes of Assessments

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

Examination	1	2	3	4
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Outline Syllabus

Data representation: Number system, binary numbers, addition, subtraction and complements.

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.

Computer hardware: Processor design and operation, memory and file system, file allocation, Input/output devices and peripherals, bus architectures, fetch-execute cycle.

Operating systems: The role of the operating system, resource management, processes, and threads, non-pre-emptive and pre-emptive scheduling.

Learning Activities

The module consists of lectures which will cover areas listed under the learning outcomes. The tutorials cover the topics covered in the preceding lecture.

Notes

This module provides an overview of data representation, logic circuits, hardware and operating systems in computer architectures.