

## Liverpool John Moores University

Title: COMPUTER SYSTEMS  
Status: Definitive  
Code: **4601YCOM** (123247)  
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics  
Teaching School/Faculty: YPC International College (Kolej Antarabangsa YPC)

Team	Leader
Denis Reilly	Y

**Academic Level:** FHEQ4      **Credit Value:** 20      **Total Delivered Hours:** 57  
**Total Learning Hours:** 200      **Private Study:** 143

### Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	22
Practical	33

**Grading Basis:** 40 %

### Assessment Details

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

### Aims

*To provide an understanding of the underlying computing platform (hardware, OS, network) upon which applications are developed and hosted*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Explain the fundamental principles underlying the operation of modern computer systems
- 2 Demonstrate a knowledge of the structure and organization of computer systems
- 3 Demonstrate a knowledge of the interaction between software and hardware, demonstrating how programs are executed
- 4 Explain the fundamental concepts and issues involved in computer networking

## Learning Outcomes of Assessments

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

Digital System Design	1	2	
Examination	1	3	4

## Outline Syllabus

*Data Representation: Numbers, Text, Images, Binary/Hex*

*Computer Arithmetic: Addition, Subtraction, Signed/Unsigned Numbers*

*Computer Architecture: Stored Program (von Neumann) Computer Organization, Instruction Sets, The Processor Cycle (fetch-decode execute), Measuring and improving performance*

*Logic circuits: Digital Logic, Boolean Algebra, Implementing Hardware with Digital Logic*

*Memory: Types of memory, Memory Hierarchy, Memory Map*

*I/O and Peripheral Control: Device Management, Interrupts, Direct Memory Access*

*Hardware/Software Interface: Machine Code and Assembly Language, Compiling and Interpreting, Script languages*

*Operating Systems: Resource Management, Processes and Threads, Process Scheduling*

*Networks: Principles of Data Communication, Network Topologies, Network Protocols, Wireless Networks*

## Learning Activities

Formal theory will be introduced via lectures and practical knowledge will be acquired via tutorials, laboratory exercises and coursework.

## Notes

This module is intended to provide basic knowledge in relation to the computing platform (hardware, OS, network), which students will need as support knowledge for subsequent modules at FHEQ 5 and 6.