

Liverpool John Moores University

Title: COMPUTER ARCHITECTURE AND OPERATING SYSTEMS
Status: Definitive
Code: **6014ENG** (106219)
Version Start Date: 01-08-2016

Owning School/Faculty: Electronics and Electrical Engineering
Teaching School/Faculty: Electronics and Electrical Engineering

Team	Leader
Princy Johnson	Y

Academic Level: FHEQ6 **Credit Value:** 24 **Total Delivered Hours:** 75
Total Learning Hours: 240 **Private Study:** 165

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	48
Tutorial	24

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	80	3
Essay	AS2	Coursework	20	

Aims

This module aims to provide an enhanced knowledge and understanding in the design requirements and constraints of computer based systems including computer systems, information systems, embedded systems and distributed systems. It aims to provide the ability to recognise and analyse criteria and specifications appropriate to specific problems in the context of computer based systems, and plan strategies for their solution.

Learning Outcomes

After completing the module the student should be able to:

- 1 Identify and describe the components, structure and the function of a computer and its operating systems.
- 2 Identify and describe the architecture of a variety of modern computer systems and the underlying communication mechanisms.
- 3 Formulate/design appropriate techniques to resolve issues encountered by the current operating systems in certain situations
- 4 Debate/Appraise the suitability of architectures and functionalities of computer systems and operating systems for various present day applications.

Learning Outcomes of Assessments

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

EXAM	1	2	3	4
CW	1	2		

Outline Syllabus

Computer Architecture: Von Neumann architecture, RISC and CISC, Instruction and arithmetic pipelines, Memory management, cache memory, virtual memory, DMA, I/O interfacing, Interrupts, Task Management

Operating System: Overview, concepts and structure, Multi-tasking, synchronisation, deadlock, Process, Threads, SMP and Microkernels, Distributed Systems, Real time and safety critical systems, I/O Management and Disk Scheduling, File Management, Multimedia Operating Systems

Learning Activities

By a series of lectures and tutorials.

Notes

This module deals with advanced issues in computer architecture, operating systems and their interaction.