

Computer Architecture and Systems Software

Module Code:	COS4001-B
Academic Year:	2018-19
Credit Rating:	20
School:	Department of Computer Science
Subject Area:	Computer Science
FHEQ Level:	FHEQ Level 4

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	24
Laboratory	20
Directed Study	156

Availability Periods

Occurrence	Location/Period
NLA	Namal College / Semester 2 (Feb - May)
BDA	University of Bradford / Semester 2 (Feb - May)

Module Aims

To gain a knowledge and understanding of the fundamental aspects of computer architecture and systems software with a focus on digital logic design, computer hardware systems and systems software.

Outline Syllabus

A simple overview of typical computer system hardware. Representation and coding of information in a computer. Computer arithmetic. Introduction to digital logic. Truth tables, Boolean algebra and the design of simple logic circuits. Sequential logic. Structure of a simple computer CPU and its connection to memory and input/output devices. The

computer memory hierarchy. The construction and operation of common I/O devices. Introduction to instruction sets and addressing modes. Introduction to assembly code and simple assembly language exercises. Definition of an operating system via its nature and functions. The process model of computer operation. Appreciation of the hardware interface between a computer and a network.

Module Learning Outcomes

On successful completion of this module, students will be able to...

- 1 represent and process information in binary form and logic circuits;
describe the working principle of computer components and an operating system.
- 2 design and build simple logic circuits;
explain communications between computer components and systems software
- 3 apply logical approaches to software system design and apply number systems.

Learning, Teaching and Assessment Strategy

Lectures will concentrate on concepts, principles and theories of the digital logic design, computer hardware systems and systems software. These will be supported by practical exercises undertaken during tutorials, labs and direct study. Oral feedback will be given during the tutorials and labs.

Practical understanding, skills and learning outcomes (1, 2, 3 above) will be tested through coursework (solutions to 3 mathematical questions), and a formal 2-hour examination. The supplementary assessment will be a 3-hour exam which will assess all learning outcomes.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Referral	Examination - closed book	Supplementary Examination	2 hours	100%	No
Summative	Examination - closed book	Examination	2 hours	70%	Yes
Summative	Coursework	Individual Coursework:- solutions to 3 mathematical questions.		30%	No

Legacy Code (if applicable)

CM-0107L

Reading List

To view Reading List, please go to [rebus:list](#).