

Module Details	
Module Title	Computer Architecture and Systems Software
Module Code	COS4001-B
Academic Year	2022/3
Credits	20
School	Department of Computer Science
FHEQ Level	FHEQ Level 4

Contact Hours	
Type	Hours
Lectures	12
Tutorials	12
Laboratories	12
Directed Study	164

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 2

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.

Learning Outcomes	
Outcome Number	Description
01	Represent and process information in binary form and logic circuits; describe the working principle of computer components and an operating system.
02	Design and build simple logic circuits; explain communications between computer components and systems software.
03	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 labs and direct study. Oral feedback will be given during the labs. Practical understanding, skills and learning outcomes (1, 2, 3) will be tested through coursework.

Mode of Assessment			
Type	Method	Description	Weighting
Summative	Coursework - Artefact	Coursework	30%
Summative	Examination - Closed Book	Closed book final examination of 2 hours	70%

Reading List
To access the reading list for this module, please visit https://bradford.rl.talis.com/index.html

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.