

# Module Specification

## Module Summary Information

<b>1</b>	<b>Module Title</b>	Computer Systems
<b>2</b>	<b>Module Credits</b>	20
<b>3</b>	<b>Module Level</b>	4
<b>4</b>	<b>Module Code</b>	CMP4267

## 5 Module Overview

Within the Computer Systems Module, you will gain knowledge and experience of computers and computer hardware.

This module presents a holistic view of how computer systems work and it also provides the underpinning knowledge required:

- for the design of computer architecture
- to show how software interacts with hardware
- to apply electronics principles
- to use number systems for computer technology

This fundamental computer systems module puts into practice the learning done through reading, video lectures, skills building labs and problem based learning for the acquisition of new knowledge and core practical competencies.

Module content and assessment encourages realisation of multi-disciplinary computing, it challenges students to interface with the environment by configuring Internet of Things devices and systems for collecting data for the proposed solution.

## Relationship to programme philosophy:

This module provides an opportunity for the student to develop knowledge and skills, which will contribute to the acquisition of key BCU graduate attributes; creative problem solvers, global outlook, enterprising, professional and work ready. In the context of the computing and data communication industries and at this academic level, this means an ability to: respond to a critical brief to find practical solutions to problems; evaluate and respond to the opportunities and challenges of interdisciplinary approaches to the realisation of a task; respond flexibly and imaginatively to a set, or group-determined brief within a fixed timescale.

## 6 Indicative Content

- Computer Hardware

Computer hardware can be defined as the physical components of a computer. The most common being the electrical and mechanical components which give a computer system its functionality, speed, accuracy and reliability.

- Number systems

Number systems are how computers view and interpret the world around us. Four common systems employed in computing include Decimal, Binary, Hexadecimal and Octal.

- Computer logic

Boolean logic is a numbering system with only two possible values TRUE and FALSE. At the hardware level everything is represented by binary numbers even the text you are currently reading.

- Operating systems

A computer's Operating System (OS) is the program which controls all other programs. The OS also manages hardware and enables users to interact with the computer via a user interface.

- Computer architecture

The capabilities and programming model of a computer represents a good definition of architecture as it is generic and can be used to describe a variety of machine types.

- Digital electronics

Electronic devices are increasingly dominating our lives. Being able to identify individual components enhances knowledge allowing a user to understand how systems work and communicate.

- Programming languages

Programs can be written in many languages using a variety of styles. Knowing how they differ allows the user to choose the most appropriate for a particular purpose making the program more effective.

- Cloud computing

Buzzwords like 5G are increasingly appearing in social media. Often it is not clear what they actually mean to end consumers. 'The Cloud' is one such term and is associated with a range of technologies.

- Open source administration

Open-source software (OSS) is a type of software whose source code is released under a special license. The license allows the holder to study, change and distribute the software for any purpose.

7	<b>Module Learning Outcomes</b>	
<b>On successful completion of the module, students will be able to:</b>		
	<b>1</b>	Explain the application of computer systems theory.
	<b>2</b>	Illustrate the design configurations of an operable hardware and software solution.
	<b>3</b>	Develop a knowledge based article of your solution.

8	<b>Module Assessment</b>		
<b>Learning Outcome</b>			
	<b>Coursework</b>	<b>Exam</b>	<b>In-Person</b>
1-3	X		

<b>9 Breakdown Learning and Teaching Activities</b>	
<b>Learning Activities</b>	<b>Hours</b>
<b>Scheduled Learning (SL)</b> includes lectures, practical classes and workshops, peer group learning, Graduate+, as specified in timetable	48
<b>Directed Learning (DL)</b> includes placements, work-based learning, external visits, on-line activity, Graduate+, peer learning, as directed on VLE	64
<b>Private Study (PS)</b> includes preparation for exams	88
<b>Total Study Hours:</b>	200