Module code: MOD003218	Version: 4 Date Amended: 03/Dec/2025

1. Module Title

Operating Systems

2a. Module Leader

Vanessa Ng

2b. School

School of Computing and Information Sciences

2c. Faculty

Faculty of Science and Engineering

3a. Level

4

3b. Module Type

Standard (fine graded)

4a. Credits

15

4b. Study Hours

150

5. Restrictions

Type	Module Code	Module Name	Condition
Pre-requisites:	None		
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:	None		

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

This module introduces the fundamental concepts, architecture and functions of modern operating systems. You'll explore how operating systems manage hardware, processes, memory, file systems and security, gaining insight into core components such as CPU scheduling, process management, memory allocation and user interfaces. Both command-line interface (CLI) and graphical user interface (GUI) environments are examined to highlight their respective roles in system interaction and administration.

Through practical exercises, you'll develop hands-on skills using CLI commands and scripting languages such as Windows Command Prompt, PowerShell and Linux Bash to automate and manage system tasks efficiently. The knowledge and skills gained in this module provide a solid foundation for advanced study in areas such as system administration, networking, cloud computing and cybersecurity, while enhancing your problem-solving and technical proficiency in managing modern computing environments.

6b. Outline Content

- The key features and components of an operating system

- Process and memory management (including single vs multi-tasking and virtual memory)

- CPU scheduling

 - File systems and their security

 - Process and system security

- The kernel (including user and supervisor modes)

- Hardware, interrupts and device drivers

- Networked, cloud based and virtual operating systems

- The history of MS-DOS/Windows and Linux/Unix

- Command line and Graphical User Interfaces (CLIs and GUIs)

- Introduction to the CLI commands of MS-DOS and the BASH shell

- Writing CLI scripts in MS-DOS and the BASH shell

- Using Scripts to configure an operating system

6c. Key Texts/Literature

The reading list to support this module is available at: https://readinglists.aru.ac.uk/

6d. Specialist Learning Resources

Access to a laboratory with both Windows and Linux installed.

7. Learning Outcomes (threshold standards)

No.	Type	On successful completion of this module the student will be expected to be able to:
1	Knowledge and Understanding	Describe the key features and components of an operating system.
2	Knowledge and Understanding	Summarise and critically evaluate the history and development milestones of modern operating systems.
3	Intellectual, practical, affective and transferrable skills	Manipulate operating systems using their command line interfaces.
4	Intellectual, practical, affective and transferrable skills	Create, use and maintain simple operating system command line scripts.

8a. Module Occurrence to which this MDF Refers

Year	Occurrence	Period	Location	Mode of Delivery
2025/6	ZZF	Template For Face To Face Learning Delivery		Face to Face

8b. Learning Activities for the above Module Occurrence

Learning Activities	Hours	Learning Outcomes	Details of Duration, frequency and other comments
Lectures	12	1-4	Lecture 1 hr x 12 weeks
Other teacher managed learning	12	3-4	Practical Lab 1hr x 12 weeks
Student managed learning	126	1-4	Self-study and research
TOTAL:	150		

9. Assessment for the above Module Occurrence

Assessment No.	Assessment Method	Learning Outcomes	Weighting (%)	Fine Grade or Pass/Fail	Qualifying Mark (%)
010	Coursework	1-4	100 (%)	Fine Grade	30 (%)

Coursework

Assessment components for Element 010				
Component No.	Assessment Title	Submission Method	Weighting (%)	Components needed for Mark Calculation?
010/1	Coursework report (1500 words)	Canvas	50 (%)	All
010/2	In-class test	Scheduled Activity: Timetabled assessment task	50 (%)	

In order to pass this module, students are required to achieve an overall mark of 40% (for modules at levels 3, 4, 5 and 6) or 50% (for modules at level 7*).

In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment as specified above
(b) pass any pass/fail elements

[* the pass mark of 50% applies for all module occurrences from the academic year 2024/25 – see Section 3a of this MDF to check the level of the module and Section 8a of this MDF to check the academic year]