



Module Specification

Operating Systems and Networks

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Part 1: Information

Module title: Operating Systems and Networks

Module code: UFCEHX-15-1

Level: Level 4

For implementation from: 2025-26

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Arts, Technology and Environment

School: CATE School of Computing and Creative Technologies

Partner institutions: University Centre Weston

Field: Computer Science and Creative Technologies

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: Operating systems are the underpinning of today's client, server and SoC platforms. This hands-on module will explore the key features, functionality of a range of operating systems, with a focus on networking and security features.

Features: Not applicable

Educational aims: Throughout this module students will be given the opportunity to develop practical experience in a range of mainstream operating systems and

fundamentals of operational networking. Including:

- Principles of networks
- Client & Server Operating Systems
- Digital system components
- Virtualisation

Outline syllabus: Principles of networks: OSI and TCP/IP models, data, protocols and how they relate to each other; the main routing protocols; the main factors affecting network performance including typical failure modes in protocols and approaches to error control; virtual networking.

The concepts, main functions and features of at least three Operating Systems (OS), including hardware and components within an OS (such as memory management, file access, processes/threads, etc.) and their associated security features.

Function and features of significant digital system components; typical architectures; common vulnerabilities in digital systems; principles and common practice in digital system security.

Virtualization for testing (Virtual networking, Virtual Machines, Cloud Computing)

Part 3: Teaching and learning methods

Teaching and learning methods: This module will be delivered through introductory lectures covering the fundamentals and technical underpinning of the module before progressing onto practical delivery through a series of lessons, workshops and practical tasks in a Network Lab to develop the practical experience to underpin the module assessment.

Opportunities for feedback and time to develop practical hands-on experience with a range of technologies and operating systems will exist throughout the module.

Module Learning outcomes: On successful completion of this module students will achieve the following learning outcomes.

MO1 Compare three mainstream operating systems used in client-server networks with a focus on security.

MO2 Explain function and features of significant digital system components.

MO3 Explain the key principles of networks and data protocols.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link

<https://ri.talis.com/3/uwe/lists/7844CDFD-2FE3-0CED-D1F4-17B14069061C.html>

Part 4: Assessment

Assessment strategy: This module has one assessment, designed to assess student's theoretical knowledge and practical application of computer hardware, networking and operating systems.

The 1500 word report will be supported by practical labs and tasks completed in-class, facilitating students to explore and develop the experience and expertise to create informed and reflective conclusions.

The resit opportunity will follow the same format as the first sit, with the option for a re-work if appropriate.

Assessment tasks:

Laboratory Report (First Sit)

Description: Based upon the practical experience developed throughout this module students will be required to develop a 1500 word technical lab report explaining the key features of operating systems, comparing three mainstream examples.

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Cyber Security and Networking [UCW] FdSc 2025-26