Liverpool John Moores University

Title:	OPERATING SYSTEMS
Status:	Definitive
Code:	**5012DACOMP** (125356)
Version Start Date:	01-08-2021
Owning School/Faculty:	Computer Science and Mathematics
Teaching School/Faculty:	Computer Science and Mathematics

Team	Leader
Nathan Shone	Y

Academic Level:	FHEQ5	**Credit Value:**	20	**Total Delivered Hours:**	55
Total Learning Hours:	200	**Private Study:**	145		

Delivery Options
Course typically offered: Semester 1

Component	Contact Hours
Lecture	22
Practical	22
Tutorial	11

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Essay	AS1	Essay on Operating Systems	40	
Portfolio	AS2	Series of individual software development tasks	60	

Aims

To develop an understanding of different operating systems and their role within IT infrastructure.
To become familiar with these operating systems through practical excersises.
To gain an understanding of how command-line software is developed.
To gain knowledge of how operating system tools may be used for managing

systems and networks.
To gain knowledge on managing and maintaining services offered by networked systems.
To appreciate a range of security measures involved in system administration.

Learning Outcomes

After completing the module the student should be able to:

1	Differentiate between the structure, management and maintenance of operating systems.
2	Analyse operating systems as effective solutions for different problems.
3	Apply command-line tools provided by operating systems and their distributions.
4	Demonstrate problem-solving skills to create simple software solutions using command-line scripting.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Essay	1	2
Development tasks	3	4

Outline Syllabus

Fundamentals of Operating Systems
- Processes, Memory, Storage, I/O, File Systems
- Distributed operating systems

Command Line
- Navigating the computer
- Editing documents at the command-line
- Searching for information
- Extracting and manipulating information

Elements of Shell Programming
- Variables
- Redirection and pipes
- Conditionals
- Loops
- Functions
- Shell scripting

System Administration
- Installing and configuring alternative operating systems
- UNIX & Linux system administration
- Network File System (NFS)
- Domain Name Servers (DNS)

- Performance Analysis
- Backups and File System Recovery
- System Security
- Hypervisors and virtualisation
- Containers and isolation

Learning Activities

Lectures – to introduce the operating system and shell programming theories and techniques.
Tutorial sessions – discussion and tasks covering operating-system concepts.
Lab – practical tasks for students to solve using command-line tools and write their own scripts.
Directed reading – background reading to enable the lab work to be completed.
This module will have online practical.

Notes

Operating systems constitute the backbone of every system management task and knowledge on their structure and use is of high importance for any system/network administrator in modern networked environments. In response to this importance, this module introduces the fundamental aspects of operating systems and further facilitates the basis for system administration.