SETU

Ollscoil
Teicneolaíochta
an Oirdheiscirt

South East
Technological
University

Module Descriptor

Operating Systems (Computing and Mathematics)

Short Title: Operating Systems
Department: Computing and Mathematics
Credits: 5   **Level:** Introductory

Description of Module / Aims

The student will explore in detail modern operating systems in the areas of file systems, memory management, and process management. This module will introduce the student to the concepts and practical application of administering and troubleshooting modern operating systems with a strong emphasis on shell scripting.

Programmes

		stage/semester/status
COMP-0379	BSc (Hons) in Applied Computing (International) (WD_KACCM_BI)	3 / 5 / M
COMP-0379	BSc (Hons) in Applied Computing (WD_KACCM_B)	2 / 3 / E
COMP-0379	BSc (Hons) in Applied Computing (WD_KCOMP_B)	2 / 3 / E
COMP-0379	BSc (Hons) in Computer Forensics and Security (WD_KCOFO_B)	2 / 3 / M
COMP-0379	BSc (Hons) in Computer Science (WD_KCMSC_B)	2 / 3 / E
COMP-0379	BSc (Hons) in Software Engineering (WD_KDEVP_BI)	3 / 5 / M
COMP-0379	BSc (Hons) in the Internet of Things (International) (WD_KINTT_BI)	3 / 6 / M
COMP-0379	BSc in Information Technology (WD_KINFT_D)	2 / 4 / M

Indicative Content

- Operating System Kernel, Services and Utilities
- System Start-up and Recovery
- Filesystems: File Management; File Permissions, etc
- Devices: Mounting/Unmounting; Smart Devices, etc
- File Sharing
- System Services
- Operating System Monitoring
- Shell Scripting
- Virtualisation

Learning Outcomes

On successful completion of this module, a student will be able to:

1. Explain the behaviour of system services during the boot process and recovery mode.
2. Examine various file systems and demonstrate the configuration, navigation, and maintenance of a Linux file system using system utilities.
3. Demonstrate the use of monitoring tools on a modern operation system.
4. Describe the process of planning, implementing and maintaining a small mixed network.
5. Automate system management functions by writing shell scripts.
6. Appraise and integrate developing technologies through the use of virtualisation software.

Learning and Teaching Methods

- The lectures will introduce the theory content to the student. The student will be encouraged to participate in class discussions and ask questions to support their learning process.
- The practical classes facilitate the student in implementing the theory learned in the lectures.
- The continuous assessment will require the student to apply the theory and practical knowledge to a business solution.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	12	
Practical	36	
Independent Learning	87	

Assessment Methods

	Weighting	Outcomes Assessed
Final Written Examination	50%	1,2,4
Continuous Assessment	50%	
Practical	30%	2,3,5,6
In-Class Assessment	20%	2,3,5,6

Assessment Criteria

<40%: Unable to interpret and describe key concepts and operations of modern operating systems.

40%–49%: Be able to interpret and describe key concepts and operations of modern operating systems.

50%–59%: Ability to discuss key concepts of operating systems. Be able to perform configuration and administration tasks on operating systems.

60%–69%: Ability to plan, design and implement a small mixed network using appropriate tools and advanced scripting techniques.

70%–100%: All the above to an excellent level. Be able to analyse and demonstrate unforeseen problems through the use and modification of appropriate skills and tools.

Supplementary Material(s)

- Siberschataz, A., P. Galvin and G. Gagne. *Operating Systems Concepts*. 9th Ed.. New York: Wiley, 2013.
- Stallings, W. *Operating Systems: Internals and Design Principles*. 8th Ed.. New York: Pearson Education, 2014.

Requested Resources

- Room Type: Computer Lab