

2024 / 25

School of Science and Computing

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🌐 [www.wit.ie/schools/science\\_computing](http://www.wit.ie/schools/science_computing)



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## Module Descriptor

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# Computer Systems 2 (Computing and Mathematics)

# Computer Systems 2 (A11062)

**Short Title:** Computer Systems 2  
**Department:** Computing and Mathematics  
**Credits:** 5

**Level:** Introductory

## Description of Module / Aims

This module follows on from Computer Systems 1 and focuses mostly on operating systems. Topics covered include core operating system functions such as process, memory and file management as well as an introduction to distributed systems and virtualisation. As with Computer Systems 1, there is an emphasis on practical, lab-based exercises with command line tools and some scripting.

## Programmes

stage/semester/status		
COMP-0546	BSc (Hons) in Applied Computing (International) (WD_KACCM_BI)	1 / 2 / M
COMP-0546	BSc (Hons) in Applied Computing (WD_KACCM_B)	1 / 2 / M
COMP-0546	BSc (Hons) in Applied Computing (WD_KCOMP_B)	1 / 2 / M
COMP-0546	BSc (Hons) in Computer Forensics and Security (WD_KCOFO_B)	1 / 2 / M
COMP-0546	BSc (Hons) in Computer Science (WD_KCMSC_B)	1 / 2 / M
COMP-0546	BSc (Hons) in Creative Computing (WD_KCRCO_B)	1 / 2 / M
COMP-0546	BSc (Hons) in Software Engineering (WD_KDEVP_BI)	1 / 2 / M
COMP-0546	BSc (Hons) in Software Systems Development (WD_KDEVP_B)	1 / 2 / M
COMP-0546	BSc (Hons) in the Internet of Things (International) (WD_KINTT_BI)	1 / 2 / M
COMP-0546	BSc in Applied Computing (WD_KCOMP_D)	1 / 2 / M
COMP-0546	BSc in Information Technology (WD_KINFT_D)	1 / 2 / M
COMP-0546	BSc in Multimedia Applications Development (WD_KMULA_D)	1 / 2 / M
COMP-0546	BSc in Software Systems Development (WD_KCOMC_D)	1 / 2 / M

## Indicative Content

- Operating system structure: components, services and utilities
- Process Management
- File management
- Memory management
- Virtualisation
- Basic concepts of networks and distributed systems

## Learning Outcomes

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

1. Describe the memory management, process management and file management components of a modern operating system.
2. Explain basic concepts and theory of networked operating systems and virtualisation.
3. Configure a contemporary operating system (within a virtual machine environment), integrating the services necessary to support basic two/three tier applications, and demonstrating their operation with a small application.
4. Demonstrate competency in a limited set of utilities provided by a contemporary operating system.
5. Complete basic automation tasks using scripting.

## Learning and Teaching Methods

- There is a strong emphasis on practical, lab-based exercises.

## Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	24	12
Practical	24	12
Independent Learning	87	111

## Assessment Methods

	Weighting	Outcomes Assessed
Continuous Assessment	50%	
Assignment	50%	3,4,5
Final Written Examination	50%	1,2,4

## Assessment Criteria

<40%: Unable to describe operating system concepts. Unable to use command line utilities of an OS. Unable to write a basic effective script to demonstrate automation of a configuration task.

40%–49%: Can describe operating system concepts. Can configure an OS and deploy an application. Can use basic command line utilities and write a script to demonstrate automation.

50%–59%: All of the above. Can describe concepts in more depth. Additionally can write a script to automate a non-trivial task.

60%–69%: In addition, can carry out more advanced configuration and scripting tasks.

70%–100%: All the above to an excellent level. In addition can research and execute previously unseen configuration and scripting tasks independently.

## Supplementary Material(s)

- Forouzan, B. *Foundations of Computer Science*. New York: Cengage Learning, 2013.
- Siberschatz, A., P. Galvin and G. Gagne. *Operating Systems Concepts*. 9th Ed. NY: Wiley, 2013.
- Stallings, W. *Operating Systems: Internals and Design Principles*. 8th Ed. NY: Pearson, 2014.

## Requested Resources

- Computer Lab: BYOD Lab
- Room Type: Computer Lab