

2024 / 25

School of Science and Computing

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🌐 www.wit.ie/schools/science_computing



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South East
Technological
University

Module Descriptor

Computer Systems 1 (Computing and Mathematics)

Computer Systems 1 (A10922)

Short Title: Computer Systems 1
Department: Computing and Mathematics
Credits: 5

Level: Introductory

Description of Module / Aims

This module will provide the student with an introduction to Computer Science and Systems concepts and assumes no prior knowledge of the topic. The student is introduced to fundamental computing concepts, terminology, architecture and organisation. The theory is largely taught through a series of practical, lab-based exercises exploring computer hardware and software, operating systems installation and configuration and applications management.

Programmes

		stage/semester/status
COMP-0541	BEng (Hons) in Electrical and Automation Engineering (International) (WD_ETRIC_BI)	1 / 1 / M
COMP-0541	BEng (Hons) in Information Engineering (International) (WD_EEELC_BI)	1 / 1 / M
COMP-0541	BSc (Hons) in Applied Computing (International) (WD_KACCM_BI)	1 / 1 / M
COMP-0541	BSc (Hons) in Applied Computing (WD_KACCM_B)	1 / 1 / M
COMP-0541	BSc (Hons) in Applied Computing (WD_KCOMP_B)	1 / 1 / M
COMP-0541	BSc (Hons) in Computer Forensics and Security (WD_KCOFO_B)	1 / 1 / M
COMP-0541	BSc (Hons) in Computer Science (WD_KCMSC_B)	1 / 1 / M
COMP-0541	BSc (Hons) in Creative Computing (WD_KCRCO_B)	1 / 1 / M
COMP-0541	BSc (Hons) in Software Engineering (WD_KDEV_P_BI)	1 / 1 / M
COMP-0541	BSc (Hons) in Software Systems Development (WD_KDEV_P_B)	1 / 1 / M
COMP-0541	BSc (Hons) in the Internet of Things (International) (WD_KINTT_BI)	1 / 1 / M
COMP-0541	BSc in Applied Computing (WD_KCOMP_D)	1 / 1 / M
COMP-0541	BSc in Information Technology (WD_KINFT_D)	1 / 1 / M
COMP-0541	BSc in Multimedia Applications Development (WD_KMULA_D)	1 / 1 / M
COMP-0541	BSc in Software Systems Development (WD_KCOMC_D)	1 / 1 / M
COMP-0541	Diploma in Computing with Security and Forensics (WD_BCSEC_SP)	3 / 1 / M

Indicative Content

- Operating Systems Introduction
- Number Bases
- Boolean Algebra
- Data Representation formats
- Central Processing Units
- Memory Hierarchies
- Operating System utilities

Learning Outcomes

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

1. Identify and explain the role various hardware components play in a computer system.
2. Use an operating system on a chosen computer architecture.
3. Demonstrate an ability to configure systems using the command line.
4. Build and configure an application from source code on an identified platform.

Learning and Teaching Methods

- This is a skills-based module. Theory is covered in lectures, but the emphasis is on lab-based activities.
- The lab hours will be timetabled together.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	12	6
Practical	36	18
Independent Learning	87	111

Assessment Methods

	Weighting	Outcomes Assessed
Continuous Assessment	100%	
In-Class Assessment	50%	1,2
Project	50%	3,4

Assessment Criteria

- <40%: Unable to name or describe computer components. Cannot perform command line operation. Poor understanding of basic computer principles.
- 40%–49%: Can identify and describe operation of computer components. Can perform basic command line operations and successfully install an operating system. Can build, configure and install an application by following given instructions.
- 50%–59%: All of the above, plus can configure the operating system through the editing of settings files. Can build, configure and install an application without detailed instructions. Can reason as to the function of computer components.
- 60%–69%: In addition, can discuss the relative merits of competing computer components. Can implement unseen features in operating systems/applications.
- 70%–100%: All the above to an excellent level. Demonstrate a deep understanding of trade-offs of computer power, speed and storage. Demonstrates knowledge of advanced OS operations and application building.

Supplementary Material(s)

- "Association of Computer Machinery (ACM)." <http://www.acm.org>
- "Institute of Electrical and Electronics Engineers (IEEE)." <http://www.ieee.org>
- Forouzan, B. *Foundations of Computer Science*. NY: Cengage Learning, 2013.
- Null, Linda & Labor, J. *The Essentials of Computer Organization and Architecture*. NY: Jones & Bartlett Learning, 2014.
- Stalling, W. *Computer Organization & Architecture*. 9th Ed. New York: Prentice Hall, 2012.

Requested Resources

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