

MODULE TITLE	Computers and the Internet	CREDIT VALUE	15
MODULE CODE	ECM1413	MODULE CONVENER	Dr Abdelkhalik Mosa (Coordinator)
DURATION: TERM	1	2	3
DURATION: WEEKS	12		
Number of Students Taking Module (anticipated)	91		

DESCRIPTION - summary of the module content

This module is designed to equip you with the foundational information you need to understand and work in business and technical fields requiring the use of computers and networking technologies. Computing technology has a diversity of applications, so this module is suitable both for computer science students and for those pursuing other study disciplines. On this module, you will acquire useful knowledge of computer systems, computer networks and information systems analysis and design.

AIMS - intentions of the module

By the end of the module, you should be well placed to make use of an extensive range of hardware and software. In addition, you will have gained the knowledge and skills to enable you to analyse existing computer-based information systems and to design and develop web-based applications from informal specifications.

INTENDED LEARNING OUTCOMES (ILOs) (see assessment section below for how ILOs will be assessed)

On successful completion of this module, you should be able to:

Module Specific Skills and Knowledge:

- 1 outline the major components of operating systems, computer architectures and computer networks;
- 2 compare and contrast different operating system architectures;
- 3 compare and contrast different computer architectures;
- 4 compare and contrast different network architectures;
- 5 implement a computer program to demonstrate operating system calls;
- 6 implement a network program to demonstrate network protocols;

Discipline Specific Skills and Knowledge:

- 7 interpret an informal requirement specification;
- 8 systematically analyse information and make appropriate design choices.

Personal and Key Transferable / Employment Skills and Knowledge:

- 9 express information at various levels of abstraction;
- 10 use an operating system to manage a computer and a computer network;
- 11 write a basic technical report incorporating the design, implementation and testing of computer systems.

SYLLABUS PLAN - summary of the structure and academic content of the module

computer operating systems: structure (monolithic, layered, modular, micro-kernel), file management (files, directories), process management (fork/exec), processor management (scheduling), memory management (allocation, free);

- computer architectures: Von Neumann processor architectures (CISC, RISC), caching (caches, virtual memory), pipelining, input/output devices (polling/interrupts), storage technologies (disk, solid-state);

- computer networks: interconnection (LAN, WLAN), devices (switches, routers), organization (client-server/peer-to-peer), protocols (TCP/IP, HTTP);

LEARNING AND TEACHING

LEARNING ACTIVITIES AND TEACHING METHODS (given in hours of study time)

Scheduled Learning & Teaching Activities	30.00	Guided Independent Study	120.00	Placement / Study Abroad
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DETAILS OF LEARNING ACTIVITIES AND TEACHING METHODS

Category	Hours of study time	Description
Scheduled learning and teaching activities	20	Lectures
Scheduled learning and teaching activities	10	Workshops
Guided independent study	120	Guided independent study

ASSESSMENT

FORMATIVE ASSESSMENT - for feedback and development purposes; does not count towards module grade

Form of Assessment	Size of Assessment (e.g. duration/length)	ILOs Assessed	Feedback Method
Laboratory Worksheets	10 hours	1,5,6,11	Written and oral

SUMMATIVE ASSESSMENT (% of credit)

Coursework	0	Written Exams	100	Practical Exams	0
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DETAILS OF SUMMATIVE ASSESSMENT

Form of Assessment	% of Credit	Size of Assessment (e.g. duration/length)	ILOs Assessed	Feedback Method
Written exam (Closed Book)	100	1 hour - January Exam	1, 2, 3, 4, 5, 7, 8, 9, 10	Written, on request

DETAILS OF RE-ASSESSMENT (where required by referral or deferral)

Original Form of Assessment	Form of Re-assessment	ILOs Re-assessed	Time Scale for Re-reassessment
Exam	Written exam - 1 hour	All	August Ref/Def period

RE-ASSESSMENT NOTES

Reassessment will be by written exam only. For referred candidates, the mark will be capped at 40%. For deferred candidates, the exam mark will be uncapped.

RESOURCES

INDICATIVE LEARNING RESOURCES - The following list is offered as an indication of the type & level of information that you are expected to consult. Further guidance will be provided by the Module Convener

ELE: College to provide hyperlink to appropriate pages

Additional Reading Resources

A. Silberschatz, P. B. Galvin and G. Gagne, "Operating Systems Concepts (Eighth Edition)", John Wiley, 2009, ISBN 978-0470233993

A. S. Tanenbaum and T. Austin, "Structured Computer Organization (Sixth Edition)", Pearson, 2012 ISBN 978-0273769248

J. F. Kurose and K. W. Ross, "Computer Networking: A Top-Down Approach (Six Edition)", Pearson, ISBN 978-0273768968, 2012

L. L. Peterson and B. S. Davie, "Computer Networks: A Systems Approach (Fifth Edition)", Morgan Kaufmann, ISBN 978-0123851383, 2011

Reading list for this module:

Type	Author	Title	Edition	Publisher	Year	ISBN	Search
Set	Stallings, W	Computer Organization and Architecture: Designing for Performance	9th	Pearson	2012	978-0273769194	[Library]
Set	Stallings, W	Operating Systems: Internals and Design Principles	7th	Pearson	2011	978-0273751502	[Library]
Set	Comer, D.E.	Computer Networks and Internets	5th	Pearson	2008	978-0135045831	[Library]

CREDIT VALUE	15	ECTS VALUE	7.5
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PRE-REQUISITE MODULES	None
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CO-REQUISITE MODULES	None
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NQF LEVEL (FHEQ)	1 (NQF Level 4)	AVAILABLE AS DISTANCE LEARNING	No
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ORIGIN DATE	Tuesday 10 July 2018	LAST REVISION DATE	Wednesday 08 February 2023
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KEY WORDS SEARCH	Computer architecture; operating systems; computer networks; web technologies.
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