

Module Code:	COM307
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Module Title:	Computer Hardware and Software
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Level:	3	Credit Value:	20
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Cost Centre(s):	GACP	JACS3 code:	I111
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Faculty:	Faculty of Arts, Science and Technology	Module Leader:	Prof Rich Picking
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Scheduled learning and teaching hours	40 hrs
Guided independent study	160 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
BSc (Hons) Computer Game Design and Enterprise (with Foundation Year)	✓	<input type="checkbox"/>
BSc (Hons) Computer Game Development (with Foundation Year)	✓	<input type="checkbox"/>
BSc (Hons) Computer Science (with Foundation Year)	✓	<input type="checkbox"/>
BSc (Hons) Computing (with Foundation Year)	✓	<input type="checkbox"/>
BSc (Hons) Computer Networks and Security (with Foundation Year)	✓	<input type="checkbox"/>
BSc (Hons) Cyber Security (with Foundation Year)	✓	<input type="checkbox"/>

Pre-requisites
None

Office use only		
Initial approval:	12/12/2018	Version no:1
With effect from:	01/09/2019	
Date and details of revision:		Version no:

Module Aims

This module aims to provide students with a grounding in the operation of a computer, and the interaction between the hardware, the operating system and the software.

Intended Learning Outcomes

Key skills for employability

- KS1 Written, oral and media communication skills
- KS2 Leadership, team working and networking skills
- KS3 Opportunity, creativity and problem solving skills
- KS4 Information technology skills and digital literacy
- KS5 Information management skills
- KS6 Research skills
- KS7 Intercultural and sustainability skills
- KS8 Career management skills
- KS9 Learning to learn (managing personal and professional development, self-management)
- KS10 Numeracy

At the end of this module, students will be able to

Key Skills

1	Describe the major sub-systems components and operation of a computer.	KS1	KS5
		KS4	KS6
2	Describe the components of a modern operating system, using real operating systems to provide examples.	KS1	KS5
		KS4	
3	Discuss the interaction between the hardware, the operating system, the application software and the user of a modern computer system.	KS1	KS5
		KS4	
4	Outline typical network architectures, and their operations and protocols using examples from real networks to illustrate the concepts involved.	KS1	KS4
		KS3	KS5
		KS6	

Transferable skills and other attributes

n/a

Derogations

None

Assessment:

Indicative Assessment Tasks:

Assessment One: In-class test. Evidence for the knowledge and/or skills will be produced using a set of restricted response questions to assess student's knowledge and understanding.

Assessment Two: Completion of a 1500-word article reviewing current hardware or software.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1-2	In-class test	50	1 hour	n/a
2	3-4	Coursework	50	n/a	1,500

Learning and Teaching Strategies:

The delivery of the module will include a range of teaching methods and learning styles. These include lectures, case studies, project work, presentations and tutorials; drawing on the student's experiential learning.

Syllabus outline:

- Binary
- Boolean logic
- Gates
- Memory & Cache
- Hardware
- Software
- Functions of an OS
- Architecture
- LAN's
- Network Topologies
- Networking Hardware
- OSI

Indicative Bibliography:

Essential reading

Schneider, G. M. Gersting J. L, (2016) *Invitation to Computer Science 7th Edition*, Cenage Learning.

Other indicative reading

Stallings, W. (2016) *Computer Organization and Architecture 10th Edition*, Pearson