

Module Code:	COM308
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Module Title:	Computing Mathematics
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Level:	3	Credit Value:	20
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Cost Centre(s):	GACP	JACS3 code:	G400
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Faculty:	Faculty of Arts, Science and Technology	Module Leader:	Bindu Jose
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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

To enable students entering a degree in computing to be confident in the use of formula, data manipulation and representation, and have a strong understanding of the different number representation systems used in computing.

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

		Key Skills	
1	Represent data in a suitable format	KS1	KS4
		KS6	KS9
		KS10	
2	Manipulate formula	KS1	KS3
		KS4	KS6
		KS10	
3	Work with number systems (SB: 'Convert values between different number systems')	KS1	KS3
		KS6	KS10
4	Apply algorithms appropriately	KS3	KS4
		KS6	KS9
		KS10	KS1
5	Solve problems using appropriate tools/methods/formula/ algorithms, decision making and independent thought	KS3	KS9
		KS10	

Transferable skills and other attributes

- Mathematics: Selection of appropriate formula, range and representation.
- Self-Learning: Managing one's own learning and development including time management and organisational skills, reflecting on experience; research and investigative skills

Derogations

None

Assessment:

Indicative Assessment Tasks:

Students in this course will be assessed twice:

Assessment One: The coursework will present real-life problems that requires mathematical knowledge to solve. The students will complete a 1,500 word logbook with the solutions to the identified mathematical problems and a discussion and reflection of the solution.

Assessment Two: End of module In-Class Test. This will consist of a set of restricted response questions to assess student's knowledge and understanding and problem solving skills of the entire delivered material.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1 - 4	Learning logs/journals	70%		1,500
2	5	In-class test	30%	1 Hr	

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 students' experiential learning. Students will have access to lecture materials, and ancillary resources, via the University's VLE platform.

Syllabus outline:

- Number Systems
- Graphs
- Manipulation and representation
- Exponents
- Powers
- Logs
- Modulus operation
- Sets
- Formulas
- Algorithms

Indicative Bibliography:

Essential reading

Grossman, P. (2008) Discrete Mathematics for Computing 3rd Edition. Palgrave

Other indicative reading

Stroud, K.A, Booth, D.J (2009) Foundation Mathematics. Palgrave.

Jenkyns, T, Stephenson, B (2013) Fundamentals of Discrete Math for Computer Science.
Springer