STUDENT AND ACADEMIC SERVICES

MODULE SPECIFICATION

Part 1: Information			
Module Title	Foundation Mathematical Investigations		
Module Code	UFMFGG-15-0	Level	Level 3
For implementation from	2019-20		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Engineering, Design and Mathematics
Department	FET Dept of Engin Design & Mathematics		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Educational Aims: See Learning Outcomes

Outline Syllabus: Mathematical content
Number systems, basic number theory, sequences and series, discrete dynamical systems, iteration of a function, probability.

Mathematical Software
Use of mathematical software to perform numerical and algebraic computations, data structures, functions, graphical output, simple procedures involving function evaluation, loops and if statements.

Investigations
The types of investigation considered in the module will evolve over time. The following list provides an indication of typical investigations that could be considered; number searches for prime and perfect numbers, sorting algorithms, study of the dynamics of particular integer sequences, e.g. Fibonacci, Catalan, Stirling sequences. Methods for computing approximations to irrational numbers.

Teaching and Learning Methods: Scheduled learning: Lectures, workshops and PC Lab based sessions.

Independent learning: Problem solving; worksheet exercises, assignment work, examination preparation and (directed) reading.

Hours:
Contact: 36
Assimilation and skill development: 54
Coursework: 15
Exam preparation: 45
Total: 150

Part 3: Assessment

This module is designed to encourage students to learn mathematics through investigation and enquiry and this is reflected in the assessment strategy.

Component A, will involve unseen examination questions that are based on pre-seen scenarios to allow the testing of mathematical investigation skills under controlled examination conditions.

Component B, will involve exercises designed to assess understanding and proficiency in the use the mathematical software introduced in the module.

First Sit Components	Final Assessment	Element weighting	Description
Set Exercise - Component B		25 %	Assignment
Examination - Component A	✓	75 %	Examination (2 hours)
Resit Components	Final Assessment	Element weighting	Description
Set Exercise - Component B		25 %	Assignment
Examination - Component A	✓	75 %	Examination (2 hours)

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Part 4: Teaching and Learning Methods		
Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:	
	Module Learning Outcomes	**Reference**
	Communicate mathematical concepts using appropriate language in a clear and concise manner	MO1
	Implement an iterative process	MO2
	Conduct and summarise findings from a mathematical investigation	MO3
	Use mathematical software to implement mathematical techniques and procedures	MO4
Contact Hours	**Independent Study Hours:**	
	Independent study/self-guided study	114
	Total Independent Study Hours:	114
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	36
	Total Scheduled Learning and Teaching Hours:	36
	Hours to be allocated	150
	Allocated Hours	150
Reading List	*The reading list for this module can be accessed via the following link:* https://uwe.rl.talis.com/modules/ufmfgg-15-0.html	

Part 5: Contributes Towards
This module contributes towards the following programmes of study: