



## MODULE SPECIFICATION

Part 1: Information			
Module Title	Foundation Mathematical Investigations		
Module Code	UFMFGG-15-0	Level	Level 3
For implementation from	2020-21		
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
<p><b>Educational Aims:</b> See Learning Outcomes</p> <p><b>Outline Syllabus:</b> Mathematical content Number systems, basic number theory, sequences and series, discrete dynamical systems, iteration of a function, probability.</p> <p><b>Mathematical Software</b> Use of mathematical software to perform numerical and algebraic computations, data structures, functions, graphical output, simple procedures involving function evaluation, loops and if statements.</p> <p><b>Investigations</b> 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.</p>

## STUDENT AND ACADEMIC SERVICES

<p><b>Teaching and Learning Methods:</b> Scheduled learning: Lectures, workshops and PC Lab based sessions.</p> <p>Independent learning: Problem solving; worksheet exercises, assignment work, examination preparation and (directed) reading.</p> <p>Hours:            Contact: 36            Assimilation and skill development: 54            Coursework: 15            Exam preparation: 45            Total: 150</p>
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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 which will involve a single assignment containing exercises designed to assess understanding and proficiency in the use of the mathematical software introduced in the module and mathematical investigation skills.			
First Sit Components	<b>Final Assessment</b>	<b>Element weighting</b>	<b>Description</b>
Written Assignment - Component A		100 %	Assignment -2500 words
Resit Components	<b>Final Assessment</b>	<b>Element weighting</b>	<b>Description</b>
Written Assignment - Component A		100 %	Assignment - 2500 words

Part 4: Teaching and Learning Methods		
Learning Outcomes	On successful completion of this module students will achieve the following learning outcomes:	
	<b>Module Learning Outcomes</b>	<b>Reference</b>
	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	<b>Independent Study Hours:</b>	
	Independent study/self-guided study	114
	<b>Total Independent Study Hours:</b>	114

## STUDENT AND ACADEMIC SERVICES

	<b>Scheduled Learning and Teaching Hours:</b>	
	Face-to-face learning	36
	<b>Total Scheduled Learning and Teaching Hours:</b>	36
	<b>Hours to be allocated</b>	150
	<b>Allocated Hours</b>	150
Reading List	<p><i>The reading list for this module can be accessed via the following link:</i></p> <p><a href="https://uwe.rl.talis.com/modules/ufmfgg-15-0.html">https://uwe.rl.talis.com/modules/ufmfgg-15-0.html</a></p>	

### Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Mathematics with Qualified Teacher Status (QTS) {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2020-21