

Module Details	
Module Title:	Mathematics for Computing
Module Code:	COS4014-B
Academic Year:	2019-20
Credit Rating:	20
School:	Department of Computer Science
Subject Area:	Computer Science
FHEQ Level:	FHEQ Level 4
Pre-requisites:	
Co-requisites:	

Contact Hours	
Type	Hours
Lectures	24
Tutorials	12
Laboratory	12
Directed Study	152

Availability	
Occurrence	Location / Period
BDA	University of Bradford / Semester 1 (Sep - Jan)

Module Aims
To provide the foundations for formal specification and modelling of computer systems. To provide the foundations for the use of computer technology for computations mathematics.

Outline Syllabus
(a) Introduction to Discrete Mathematics: Sets and relations, logic, functions, graph theory. (b) Introduction to the techniques available for numerical differentiation and integration and basic concept of error analysis and iteration using Matlab/Scilab

Learning Outcomes

1	use the mathematical language of computer science and explain the fundamental concepts of computational mathematics.
2	construct and validate many of the logical tools inherent in the construction and analysis of computer systems and develop and implement efficient numerical algorithms using Matlab/Scilab.
3	explain in writing how logic is used as a tool for describing computer systems.

Learning, Teaching and Assessment Strategy

Students are expected to learn by attending the lectures (2 x 2 hours per week), the tutorials (1 hour per week) and the labs (1 hour per week). Furthermore, as there are well developed sets of self contained Beamer overheads for BOTH academic components, students will study the subject also in their allocated time in the form of private study by running the overheads (repeatedly if need be). Pertinent exercises are made available to students via the VLE (with model solutions) for deepening the theory explained in the lectures. One class test (summative) and one coursework (summative) reinforces the learning process. The credit achievable thereby is designed to encourage students and keep them interested throughout the semester in learning about this fascinating subject. Finally, the closed book examination is intended to measure the knowledge achieved.

Mode of Assessment

Type	Method	Description	Length	Weighting
Referral	Examination - closed book	Supplementary examination	2 hours	100%
Summative	Examination - closed book	Discrete maths; Numerical algorithms	2 hours	75%
Summative	Coursework	Coursework; Numerical algorithms with Matlab or Scilab		15%
Summative	Classroom test	Discrete Mathematics		10%

Reading List

To access the reading list for this module, please visit <https://bradford.rl.talis.com/index.html>.

Please note:

This module descriptor has been published in advance of the academic year to which it applies. Every effort has been made to ensure that the information is accurate at the time of publication, but minor changes may occur given the interval between publishing and commencement of teaching. Upon commencement of the module, students will receive a handbook with further detail about the module and any changes will be discussed and/or communicated at this point.

