

## Module Specification

### Module Summary Information

<b>1</b>	<b>Module Title</b>	Mathematics for Computing
<b>2</b>	<b>Module Credits</b>	20
<b>3</b>	<b>Module Level</b>	4
<b>4</b>	<b>Module Code</b>	CMP4268

<b>5</b>	<b>Module Overview</b>
<p>The module gives you the opportunity to learn mathematical concepts and methods and critically reflect on how they relate to computing and communication systems. You will develop core mathematical and statistical skills which are fundamental in computing and technical work in general. You will be expected to solve mathematical and statistical problems on paper and on a computer.</p> <p><b>The module consists of:</b></p> <ul style="list-style-type: none"> <li>Lecture sessions to introduce basic mathematical principles and knowledge which are employable in the area of computing and communication systems.</li> <li>Laboratory and Seminar sessions to practice the mathematical techniques and skills relevant to the problems driven from computing and communication technologies.</li> </ul> <p><b>Relationship to programme philosophy:</b></p> <p>This module provides an opportunity for the student to develop knowledge and skills, which will contribute to the acquisition of key BCU graduate attributes; creative problem solvers, global outlook, enterprising, professional and work ready. In the context of computing and communication industries and at this academic level, this means acquiring:</p> <ul style="list-style-type: none"> <li>The basic knowledge required to recognize the mathematical aspects of related technical problems.</li> <li>The capability for applying basic mathematical techniques to their technical problems.</li> <li>The basic skills for interpretation and critical evaluation of the results.</li> </ul>	

<b>6</b>	<b>Indicative Content</b>
<p>Number systems, Number presentation, Prime numbers and symbolism          Vectors and Matrices          Data analysis and statistics          Permutations, combinations and probability distributions          Sets, Venn diagram, Predicate and Logic</p>	

7	<b>Module Learning Outcomes</b>	
	<b>On successful completion of the module, students will be able to:</b>	
	<b>1</b>	Apply simple numerical and algebraic techniques to solve mathematical and statistical problems on paper.
	<b>2</b>	Calculate using number systems common in computing, including different number bases, mantissa & exponent form, and modular arithmetic.
	<b>3</b>	Use mathematical and statistical software to analyse data and test hypotheses.
	<b>4</b>	Use statistical techniques and statistical reasoning to draw conclusions from data, and assess their validity and robustness.

8	<b>Module Assessment</b>		
Learning Outcome			
	Coursework	Exam	In-Person
<b>1, 2</b>		<b>X</b>	
<b>3</b>	<b>X</b>		
<b>4</b>	<b>X</b>	<b>X</b>	

9	<b>Breakdown Learning and Teaching Activities</b>	
Learning Activities	Hours	
<b>Scheduled Learning (SL)</b> includes lectures, practical classes and workshops, peer group learning, Graduate+, as specified in timetable	48	
<b>Directed Learning (DL)</b> includes placements, work-based learning, external visits, on-line activity, Graduate+, peer learning, as directed on VLE	90 (please use pre-sessional and post-sessional activities which are provided per session/week on Moodle and also the weekly quiz and in-class tasks)	
<b>Private Study (PS)</b> includes preparation for exams	62 (Please use the library material links which are provided per session/week on Moodle and through reading list and also the materials accessible through digital library)	
<b>Total Study Hours:</b>	200	