

<b>Module code</b>	SM-2303		
<b>Module Title</b>	History of Mathematics		
<b>Degree/Diploma</b>	Bachelor of Science (Mathematics)		
<b>Type of Module</b>	Major Option		
<b>Modular Credits</b>	4	<b>Total student Workload</b>	10 hours/week
		<b>Contact hours</b>	4 hours/week
<b>Prerequisite</b>	A-Level Mathematics or equivalent		
<b>Anti-requisite</b>	None		
<b>Aims</b>			
To give students majoring in mathematics an appreciation of the historical background behind the subject, of the most important developments in the subject over the last 4000 years, and of the contributions to the subject made by various old-world cultures in different eras.			
<b>Learning Outcomes</b>			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	30%	<ul style="list-style-type: none"> <li>- describe the arithmetic techniques developed in ancient Babylon and Egypt</li> <li>- describe the Greek contributions to geometry and number theory</li> <li>- describe the development of algebra in medieval Islam</li> <li>- describe the contributions of pre-modern China and India to mathematical theory</li> <li>- summarise the advances made in all branches of mathematics from the 16<sup>th</sup> to the 19<sup>th</sup> centuries</li> </ul>	
Middle order :	60%	<ul style="list-style-type: none"> <li>- formulate and solve the same types of problems that early mathematicians themselves faced and solved (e.g. taking square roots, proving the irrationality of surds, enumerating the Platonic solids, constructing figures with straight edge and compass, solving algebraic equations, factorising cubic polynomials, manipulating logarithms, summing infinite series)</li> <li>- describe and use the axiomatic deductive method in geometry</li> </ul>	
Higher order:	10%	<ul style="list-style-type: none"> <li>- extend the techniques used by early mathematicians to new classes of mathematical problems</li> <li>- work independently</li> </ul>	
<b>Module Contents</b>			
<ul style="list-style-type: none"> <li>- Mathematics in ancient Babylon and Egypt</li> <li>- The emergence of the deductive method in ancient Greece</li> <li>- Greek geometry and number theory</li> <li>- Mathematical discoveries in ancient China and India</li> <li>- Medieval Islamic algebra and number theory</li> <li>- Mathematics in navigation and astronomy in the early modern period</li> <li>- 17<sup>th</sup>-century number theory: Descartes, Fermat and Pascal</li> <li>- Algebra, analysis and number theory in the 18<sup>th</sup> and 19<sup>th</sup> centuries</li> </ul>			

<b>Assessment</b>	Formative assessment	1 Weekly Tutorial and feedback.
	Summative assessment	Examination: 60% Coursework: 40% - 2 class tests (40%)