

QUALITY AND STANDARDS COMMITTEE**Module Specification**

Please complete all sections of the form, referring to the guidance notes where necessary.

School and Subject Group	School of Engineering and Applied Science.		
Module Code	AM11EM		
Module Title	Transition Mathematics for Engineers		
Module Type			
Module Replaces (where appropriate)			
Date of introduction of new module			
Level	1	Credit Value	10
Programme(s) in which module is available			
Involvement of Other Schools			

Resource Split		
Name of Module Co-ordinator		Dr W Cox.
Related Modules	Pre-requisites	A- level Mathematics, (Grade E) or equivalent.
	Co-requisites	
	Prohibited Combinations	
	Minimum and Maximum Intake Sizes	
<p>Aims of the Module</p> <p>Consolidate core mathematical skills required in a specified range of first year SEAS programmes. Establish a firm foundation for further study of mathematics.</p>		
<p>Summary of Content</p> <p>1 Numbers and Algebra. Arithmetic operations; mathematical conventions and notation for numbers, estimation and the effects of errors. Arithmetic for algebraic expressions and polynomials; factorisation; rational functions; solution of quadratic equations; binomial expansion for integern.</p> <p>2. Functions Odd and even functions; solution of linear and quadratic inequalities; function composition and inverse; summing simple series; binomial theorem; exponentials and logarithms.</p> <p>3. Trigonometry and Geometry. Radians, definitions, use of graphs and trigonometric functions; Pythagorean Identities; compound angle formulae. Cartesian co-ordinate systems; equations of line and circle.</p> <p>4.Introductory Calculus. Concept of derivative; differentiation of elementary functions; application to critical points; sum, product, quotient, and chainrule. Concept of integration: integration of elementary functions; substitution and integration by part..</p>		

Summary of Methods and Frequency of Teaching		
Lectures 22 hours. Tutorials 11 hours. Coursework, urther study and examination 67 hours.		
Summary of Methods of Assessment		
Continuous Assessment 10 % (1 piece of written coursework.) To be handed in to the Maths Office MB315D. The Maths office is open daily from 10:00- 14:00. examination (1.5 hours) 90% (summer examination).		
Module Outcomes – what the student should gain from successful completion of the module:	Learning and Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated	
	Learning and Teaching Methods	Assessment Methods
Knowledge and Understanding As defined in the summary of content.	Lectures, tutorials, independent learning, coursework and feedback.	Coursework and unseen examination.
Intellectual Skills Be able to prove and or use selected results/ topics from the content.	Lectures, tutorials, independent learning, coursework and feedback.	Coursework and unseen examination.
Professional/Subject Specific Skills See above.	Lectures, tutorials, independent learning, coursework and feedback	Not assessed.
Transferable Skills		
Please provide either or both of:		
	<i>Author</i>	<i>Title</i>
(i) Introductory Learning Resources		
(ii) Core Texts	Cox, B, (2001) Understanding Engineering Mathematics	

Reading Lists

Booth, D.J. Foundation Mathematics. (1994)
Bostock, L. & Chandler, S. Core Maths for A- level. (1994)
Croft, A. & Davidson R, Foundation Maths. (1995)
Croft, A. and Davidson, R. and Hargreaves, M., Engineering Mathematics. (1996)
Davies, G. and Hicks, G. Mathematics for Scientific and Technical students, (1998).
James, G. Modern Engineering Mathematics (1996).
Mustoe, L.R. and Barry M.D.J, Foundation Mathematics. (1998).
Mustoe, L.R. and Barry M.D.J, Mathematics in Engineering and Science. (1991).

Specification completed by:	
Date	
Date module approved by Teaching Committee(s)	
Date module approved by School Board(s)	

RPS/SJD/DLL/Module Specification/24 March 2003(f)
SJD/LAP/Module Programmes