ROBERT GORDON UNIVERSITY ABERDEEN

This Version is No Longer Current
The latest version of this module is available

MODULE DESCRIPTOR

Module Title

Mathematics 1B

Reference	EN1912	Version	3
Created	July 2017	SCQF Level	SCQF 7
Approved	June 2002	SCQF Points	15
Amended	September 2017	ECTS Points	7.5

Aims of Module

To provide the student with the ability to apply futher introductory level mathematics to engineering problems.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1	Apply matrix techniques to the solution of simultaneous linear equations.
2	Calculate and understand simple descriptive and summary statistics, and apply elementary probability theory to problems in engineering.
3	Use algebraic and numerical techniques to solve simple first order ordinary differential equations.
4	Apply calculus to problems in engineering mathematics.
5	Use a computational packages in support of the other Learning Outcomes.

Indicative Module Content

The syllabus will include: Matrices: Simple matrix algebra. Determinants. Applications to the solution of simultaneous linear equations. Differential Equations: Solution of 1st order ODEs by separation of variables and integration factor methods. Power series for elementary functions. Implicit and partial differentiation. Introduction to numerical methods: Euler and Runge-Kutta methods. Statistics: Simple descriptive statistics. Probability and reliability. Elementary probability distributions. Applications to problems in engineering. The use of a computer mathematics package for solving problems in engineering mathematics.

Module Delivery

The module is delivered using a series of lectures with associated tutorials and computer laboratories where techniques can be applied.

Indicative Student Workload

		Full Time	Part Time
Contact Hours		60	N/A
Non-Contact Hours		90	N/A
Placement/Work-Based Learning Experience [Notional] Hours		N/A	N/A
TOTAL		150	N/A
Actual Placement hours for professional, statutory or regulatory body			

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Practical Exam	Weighting:	30%	Outcomes Assessed:	5
Description:	Computer based laboratory test.				

Component 2

Type:	Examination	Weighting:	70%	Outcomes Assessed:	1, 2, 3, 4
Description:	Closed book examination.				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

To pass the module, you must achieve a 40% weighted average mark from the examination and practical examination. In addition, you need to achieve at least 35% in both the examination and the practical examination Components.

Module Grade	Minimum Requirements to achieve Module Grade:
A	70-100%
B	60-69%
C	50-59%
D	40-49%
E	35-39%
F	0-34%
NS	Non-submission of work by published deadline or non-attendance for examination

Module Requirements

Prerequisites for Module	Mathematics 1A (EN1911) or equivalent.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1	STROUD, K.A. and BOOTH, D.J., 2020. Engineering Mathematics. 8th ed. Red Globe Press
2	SINGH, K., 2011, Engineering Mathematics Through Applications, 2nd ed., Palgrave
3	James, G. and DYKE, P., 2020, Modern Engineering Mathematics, 6th ed., Palgrave