

Module: Mathematical Methods 1 by Joe Bailey

Code: MAS1006

10 credits at level HE4

Description and Purpose of Module

This module aims to consolidate the previous mathematical knowledge possessed by students and to provide a basis for further study whether this involves the Mathematics Pathway or other pathways requiring support in mathematics.

Indicative Syllabus Content

Simple algebraic and trigonometric functions and their graphs; inequalities.
 The Binomial Theorem.
 Exponential and logarithmic functions.
 Arithmetic and geometric progressions.
 Partial fractions, Algebraic division
 Matrices and determinants; solution of linear equations.
 Statistical measures, probability, decision trees.
 Conditional probability and Bayes' Rule.
 Binomial, Poisson and Normal distributions.
 Correlation and regression.
 Trigonometry.

Learning, Teaching and Assessment

Teaching Methods:

Approximately two thirds of the available time will be devoted to lectures based upon printed notes and the remainder devoted to tutorial sessions.

Assessment Methods:

Continuous assessment comprising three assignments and one in-class test.

Learning Outcomes and Assessment Criteria

	Learning Outcomes when you have successfully completed this module you will:	Assessment Criteria to demonstrate that you have achieved the learning outcome you will:
1.	understand and be able to apply determinants and matrices	use determinants and matrices
2.	understand and be able to apply the binomial theorem	use the binomial theorem
3.	understand and be able to apply arithmetic and geometric progressions, vectors and trigonometrical identities	use arithmetic and geometric progressions, vectors and trigonometrical identities
4.	understand and be able to apply algebraic functions, graphs, inequalities, logarithmic and exponential functions and partial fractions	use algebraic functions, graphs, inequalities, logarithmic and exponential functions and partial fractions
5.	understand and be able to apply the laws of probability	solve probability problems
6.	understand and be able to apply the binomial, Poisson and normal distributions	solve problems using the binomial, Poisson and normal distributions
7.	understand and be able to apply correlation and regression	calculate correlation and regression.

Assessment

Your achievement of the learning outcomes for this module will be tested as follows:

Type	CW
Description	The coursework will be given as three assignments to be completed within two weeks and and in class test. The in class test will be worth 30% of the total coursework mark and the remaining three assignments will worth 20%, 25% and 25%. Students will need to gain 40% on the whole coursework mark to pass the module
%age	100
Final Assessment	Y
Learning Outcomes	1,2,3,4,5,6,7

Prerequisite Module(s)

There are no prerequisites for this module.

Barred Combinations

No restrictions apply.

Indicative Reading

Due to the broad content of the module, no single book covers all topics. You may find it helpful to consult 'A' level maths texts, books on engineering mathematics, and books on probability or statistics.

Barnett, Raymond A College Algebra, 6th ed., McGraw Hill (1998).
 Bird, J Higher Engineering Mathematics, Newness (2004).
 Booth, Dexter J. Foundation Mathematics, 3rd ed., Addison-Wesley (1998).
 Bostock, L. & Chandler, S. Modular Mathematics: Module B, Pure Mathematics 2, Stanley Thomas (1978).
 Sadler, A J. & Thorning, D. W. S. Understanding Pure Mathematics, OUP (2002).
 Tinker, M & Lambourne, R Further Mathematics for Physical Sciences, Wiley (2001).

Module Type:	STAN
Module Length:	1
Host Subject Group:	
Version Number::	0.1

Activity Log

User Name	Date Accessed	Action
cwl1	18/11/2005 17:39:54	added
cwl1	21/11/2005 12:37:14	amended
Admin	22/07/2010 14:24:55	Ammended
sh2	22/07/2010 15:04:03	Ammended
Admin	25/08/2010 11:59:23	Ammended
nl1	07/09/2010 17:30:30	Ammended
Admin	14/09/2010 10:55:09	Ammended
Admin	14/09/2010 10:55:15	Revalidated
Admin	26/10/2010 12:13:34	Ammended
Admin	26/10/2010 12:13:57	Revalidated
ab1	09/03/2011 12:52:00	Ammended
omb1	22/06/2011 11:14:38	added
omb1	22/06/2011 11:15:38	added
omb1	22/06/2011 11:16:27	added
omb1	22/06/2011 11:17:15	added
omb1	22/06/2011 11:19:02	added
omb1	22/06/2011 11:19:55	added
omb1	22/06/2011 11:20:42	added
omb1	22/06/2011 11:22:24	added
omb1	22/06/2011 11:23:19	added
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omb1	23/06/2011 10:54:54	Ammended
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jk1	12/08/2011 11:58:42	Ammended
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jk1	31/08/2011 15:07:15	Ammended
jk1	07/09/2011 15:55:46	Ammended
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jk1	14/09/2011 11:33:11	Ammended
bj4	22/09/2011 12:15:54	Ammended
Admin	22/09/2011 16:36:23	Ammended
Admin	22/09/2011 16:38:27	Ammended
Admin	23/09/2011 10:49:18	Validated
Admin	23/09/2011 10:49:26	Validated
Admin	23/09/2011 10:49:27	Validated
Admin	23/09/2011 10:50:58	Validated
Admin	23/09/2011 10:51:06	Validated
Admin	23/09/2011 10:51:07	Revalidated
Admin	23/09/2011 10:51:13	Validated
Admin	23/09/2011 10:51:14	Validated
Admin	23/09/2011 10:51:22	Validated
Admin	23/09/2011 10:51:45	Revalidated
omb1	15/11/2011 11:49:30	Ammended
omb1	15/11/2011 11:50:06	Ammended
Admin	20/01/2012 16:46:20	Revalidated
omb1	01/05/2013 10:00:11	Ammended

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