LONDON SOUTH BANK UNIVERSITY

MATHEMATICS 2

CMS-S-MA2

Faculty of Business,
Computing and Information
Management

2008-2009

become what you want to be

Template version: 5

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1. UNIT DETAILS

Unit Title:	Mathematics 2
Unit Level:	S
Unit Reference Number:	CMS-S-MA2
Credit Value:	1
Student Study Hours:	150
Contact Hours:	52
Private Study Hours:	98
Pre-requisite Learning (If applicable):	Mathematics 1
Co-requisite Units (If applicable):	None
Course(s):	BSc (Hons) Computing Studies Foundation Year BSc (Hons) Internet Computing Foundation Year
Year and Semester	2008-2009 semester 2
Unit Coordinator:	Dr Sylvia Jennings
UC Contact Details (Tel, Email, Room)	Ext 7458, email jennins@lsbu.ac.uk, room L4 Dr Carrie Rutherford, ext 7714, email ruthercg@lsbu.ac.uk, room L49,
Subject Area:	Mathematics, Statistics & Foundation Studies
Summary of Assessment Method:	Coursework 100% (4 in-class phase tests 60%, workbook of completed exercises 40%

2. SHORT DESCRIPTION

This unit is a natural continuation of Mathematics 1. Topics not covered in semester one may be included in semester two. Both units aim to equip the student with a foundation in algebra, trigonometry and statistics so that they have a reference point when they encounter these areas at a later stage in a degree course.

3. AIMS OF THE UNIT

The aims of this unit are to continue to provide students with basic mathematical skills. It exposes them to simple curve sketching and standard functions of a single variable, as well as the standard trigonometric functions.

4. LEARNING OUTCOMES

4.1 Knowledge and understanding

Students should

- understand and use the basic trigonometric functions
- represent relationships between variables in graphical form

4.2 Intellectual skills

Students should be able to:

- Solve simultaneous linear equations using matrices
- Be able to calculate various averages and standard deviation
- Recognise the graphs of basic functions, such as exp, log and trig functions

4.3 Practical skills

Students should be able to:

- Use a calculator to compute exponential, logarithmic and trigonometric functions with confidence and competence
- Use basic units of measurement.
- Calculate areas and volumes of basic shapes

4.4 Transferable skills

Students should be able to:

- demonstrate how data may be represented by tables and charts
- compute basic probabilities

5. ASSESSMENT OF THE UNIT

100% coursework

There will be no end of unit examination and assessment will be by coursework only.

This will comprise:

(i) 4 in-class tests, of which the best 3 will count.
Each test contributes 20% to the overall mark. 60%

(ii) 10 in-class assessments of completed tutorial work over 10 weeks,
Marked on a scale 0 - 4. 40%

Total 100%

A pass for the unit is normally awarded on an overall mark of 40% or above.

I will either give out exercise sheets each week or direct you to exercises in your book. Try all of these. Mathematics is not a spectator sport - you must do it in order to learn it! You are expected to bring the relevant book/handouts to the lectures and tutorials.

6. FEEDBACK

Test results will normally be given back the following week.

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7. INTRODUCTION TO STUDYING THE UNIT

7.1 Overview of the main content

Functions and Graphs

1 Domain and range, inverse, composite, curve sketching, solving equations graphically,

2 The straight line, intercepts, gradients of tangents to curves

3 The exponential function and its graph. The logarithmic function and its graph. Laws of logarithms

Trigonometry

1 Measuring angles, length of an arc, Area of a sector.

2 The trigonometric ratios and inverse trig functions.

Matrices

Addition and subtraction, inverse. Application to solving simultaneous equations

Measurement

Units of length, area and volume, mass

Statistics and Probability

1 Tables and charts, frequency tables and distributions, pictorial representation of data.

2 Mean, median mode, standard deviation.

3 Theoretical and experimental probabilities, independent events.

7.2 Overview of types of classes

The entire class is taken for a 2-hour formal lecture and will be directed towards problems and exercises. This is followed by a 2-hour tutorial for each tutorial group. During the tutorial, students will be able to get more individual help with material covered in the preceding lecture. The tutor will also inspect the student's workbook on a weekly basis and award him/her a mark (between 0 and 4) based on the completion of exercises.

7.3 Importance of student self-managed learning time

The School expects all students to spend 6 hours every week in private study. During this time the student must learn the material taught in the lectures/tutorials and complete the set exercises in a workbook kept specifically for this unit. The work must be kept in a neat and legible manner and will *be inspected and marked every week*. Although it is expected that all set exercises will be attempted, usually only one or two unspecified exercises will be assessed (marked from 0 to 4) by the tutor. These exercises must be marked in the designated tutorial slot and may not be submitted for marking at a later stage.

8. THE PROGRAMME OF TEACHING, LEARNING AND ASSESSMENT

8.1 Unit organisation and structure

Length of unit: 1 semester (or 150 study hours)
Date unit starts: w/b 26th January 2009. Date unit ends: w/e 15th May 2009.
Time spent each week in full class lecture: 2 hours
Time spent each week in tutorial: 2 hours
Time spent each week in private study: 6 hours at least

8.2 Weekly plan of topics

(C&D refers to the course text by Croft & Davison. See below.)

WEEK	TOPIC	REFERENCE	ASSESSMENT
1	Functions	C&D16	
2	Graphs of functions	C&D17.1 – 17.3	
3	Graphs of functions	C&D17.4 – 17.6	
4	The Straight Line	C&D18	Test 1
5	The Exponential Function	C&D19	
6	The Logarithmic Function	C&D 20	
7	Angles & Introduction to Trigonometry	C&D21, 22	Test 2
8	Matrices	C&D26	
9	Measurement	C&D27	
10	Tables And Charts	C&D33	Test 3
11	Statistics	C&D34	
12	Probability	C&D35	
13			Test 4

9. LEARNING RESOURCES

9.1 Core materials

(** means set book)

Croft, A. & Davison, R. **Foundation Maths, 4th ed., Prentice Hall, £31.99

9.2 Optional materials

(* means highly recommended) Library call numbers are given in ( ). There are numerous other suitable books at the call numbers of the following books.

*Bancroft, G. & Fletcher, M. **Improve Your Maths!** Addison Wesley 1998, £26.99

*Rowe, Nick. **Refresher course in Basic Mathematics.** 3rd ed., Continuum, London, £9.99. (510)

Background reading

Bird, J. O. & May, A. J. C. **Technician Mathematics 3.** 2nd ed., Longman, London, 1994. (510.246)

Booth, D.J. **Foundation Mathematics.** 2nd ed., Addison-Wesley, 1994

Graham, L. & Sargent, D. **Count down to Mathematics, Vol. 1.** Addison-Wesley, 1981. (510)

*Greer, A. **A Complete GCSE Mathematics: Higher Course.** 3rd ed., Stanley Thornes, London, 1992. (510)

Videos

CAL package: A **Graphic Approach to Calculus.**
There are also videos in the library. The OU videos often have accompanying texts.
M101: Mathematics, a Foundation Course. Open University, 1978/1990. (510).
MST204: Mathematical Models and Methods. Open University, 1981/1990. (511.8).
Two videos accompanying the Rowe book, at (510).

Web sites
www.mathxl.com
www.gcse.com
www.mathcentre.co.uk
www.bbc.co.uk/education/revision

NOTES

Communication

Communication with students will be by lecture announcements, the Blackboard site (see instruction sheet at the end) and/or e-mail. Make sure you make friends with some other members of the class. They can help if you are unable to attend a class. Please read your e-mail regularly. Tutors are best contacted by e-mail.

Additional Resources

The Skills for Learning team, run by Sue Starkings and based in Caxton House, offers additional classes in mathematics and English for those who are weak. Times of these sessions will be posted. Do make contact if you need support in your learning.