



The University of Southern Queensland

Course Specification

Description: Foundation Mathematics

Subject	Cat-Nbr	Class	Term	Mode	Units	Campus
MAT	1100	20366	1, 2003	EXT	1.00	TWMBA

Academic Group:	FOSCI
Academic Org:	FOS003
HECS Band:	2
ASCED Code:	010101

STAFFING

Examiner: David Mander

Moderator: Janet Taylor

OTHER-REQUISITES

Maths A or equivalent assumed. Maths B recommended.

SYNOPSIS

This course uses self-paced computer managed instruction methods and group problem solving techniques to encourage students to develop an understanding of mathematical concepts that provide a foundation for the mathematics encountered in tertiary programs in science, engineering, surveying and business. Topics included are: basic algebra, functions and graphing, exponential, logarithmic and trigonometric functions, introductory matrix algebra, and introductory calculus. The self-paced structure and the flexibility of three alternative entry points into the course allow students to work at their own level thereby developing confidence in mathematics and general problem solving.

OBJECTIVES

On successful completion of this course the student should be able to:

- demonstrate a sound understanding of a number of mathematical topics that are essential for tertiary studies in science, engineering, surveying and business;
- interpret and solve a range of authentic problems involving mathematical concepts relevant to this course;
- effectively communicate the mathematical concepts and arguments contained in this course.

TOPICS

Description	Weighting (%)
1. Managing Mathematics - study strategies and planning to study mathematics	1.00
2. Arithmetic - calculations, fractions, scientific notation, metric system	5.00
3. Algebra - algebraic indices and fractions, solving linear and quadratic equations, factorisation, simultaneous equations	14.00
4. Relations and Functions - analytical geometry, definition of functions and relations, graphs of straight lines, parabolas, circles, hyperbolas, graphical solution of equations	11.00
5. Exponential and Logarithmic Functions - exponential and logarithmic functions and graphs, solution of exponential and logarithmic equations	10.00
6. Trigonometry - trig ratios and identities, solution of triangles, trigonometric functions and graphs, solution of trigonometric equations.	14.00
7. Matrices and Vectors - definition of matrices, matrix operations	8.00
8. Calculus - nature of differentiation and integration, differentiation and integration of simple functions, applications of differentiation and integration	17.00
9. Applications - a series of real problems drawn from the above topics and the disciplines of science, engineering, and business.	20.00

TEXT and MATERIALS required to be PURCHASED or ACCESSED:

Books can be ordered by fax or telephone. For costs and further details use the 'Book Search' facility at <http://bookshop.usq.edu.au> by entering the author or title of the text.

Scientific calculator

REFERENCE MATERIALS

Reference materials are materials that, if accessed by students, may improve their knowledge and understanding of the material in the course and enrich their learning experience.

Coady, C. & Gosling, J 1996, *Introductory Mathematics*, Pascal Press, Glebe, NSW.

Dobson, A.J. & Stokoe, J. 1988, *Self Paced Introductory Mathematics*, 3rd edition, ANU Press, Sydney.

Petocz, P., Petocz, D. & Wood, L 1992, *Introductory Mathematics*, Nelson, Melbourne.

STUDENT WORKLOAD REQUIREMENTS

ACTIVITY	HOURS
Assessment	15
Directed Study	112
Private Study	38

ASSESSMENT DETAILS

Description	Marks Out of	Wtg(%)	Required	Due Date
PRELIMINARY TEST	3.00	0.00	Y	04 Mar 2003
ASSIGNMENT 1	1.00	0.00	Y	04 Mar 2003 (see note)
QUIZ - Q1&2 (ENTRY 1 ONLY)	100.00	0.00	Y	04 Mar 2003 (see note)
QUIZ - Q3 (ENTRY 1 ONLY)	100.00	0.00	Y	04 Mar 2003
QUIZ - Q4&5 (ENTRY 1 & 2 ONLY)	100.00	0.00	Y	04 Mar 2003
QUIZ - Q6 (ENTRY 1 & 2 ONLY)	100.00	0.00	Y	04 Mar 2003
QUIZ - Q7&8 (ENTRY 1 & 2 ONLY)	100.00	0.00	Y	04 Mar 2003
QUIZ - Q9 (ALL STUDENTS)	100.00	1.00	Y	04 Mar 2003
QUIZ - Q10 (ALL STUDENTS)	100.00	1.00	Y	04 Mar 2003
QUIZ - Q11 (ALL STUDENTS)	100.00	1.00	Y	04 Mar 2003
QUIZ - Q12 (ALL STUDENTS)	100.00	1.00	Y	04 Mar 2003
QUIZ - Q13 (ALL STUDENTS)	100.00	1.00	Y	04 Mar 2003
QUIZ - Q14 (ALL STUDENTS)	100.00	1.00	Y	04 Mar 2003
WORKSHOPS	15.00	4.00	Y	04 Mar 2003 (see note)
ASSIGNMENT 2	15.00	10.00	Y	18 Apr 2003 (see note)
ASSIGNMENT 3	15.00	20.00	Y	13 Jun 2003 (see note)
3 HOUR OPEN EXAMINATION	15.00	60.00	Y	END S1 (see note)

NOTES:

- . Further details about the due dates will be advised by the Examiner.
- . Students will be advised by the examiner of the advisory due dates of all quizzes for their entry points.

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- . Entry point 1 and 2 students may upgrade their result for this assignment by submitting Part B by 5 September, 2003
- . Entry point 1 and 2 students may choose to submit Part B of this assignment by 31 October, 2003 instead.
- . Examination dates will be available during the Semester. Please refer to Examination timetable when published.

IMPORTANT ASSESSMENT INFORMATION

- 1 Attendance requirements:
There are no attendance requirements for this course. However, it is the students' responsibility to study all material provided to them or required to be accessed by them to maximise their chance of meeting the objectives of the course and to be informed of course-related activities and administration.
- 2 Requirements for students to complete each assessment item satisfactorily:
To complete each of the assignments satisfactorily, students must obtain at least 50% of the marks available for each assignment. To complete the examination satisfactorily, students must obtain at least 50% of the marks available for each part of the examination. To complete each of the quizzes satisfactorily, students must gain at least 50% of the marks available for the quiz. Students may attempt a quiz for a module as many times as they wish up to five. The final mark for a quiz will be the maximum mark of all attempts made by the student. To complete the workshop satisfactorily, students must gain at least 50% of the marks available for the workshops. Workshop marks are awarded on the basis of a report on one workshop problem of the student's choosing with evidence of participation in at least two workshop problem electronic discussions.
- 3 Penalties for late submission of required work:
If students submit assignments after the due date without prior approval then a penalty of 10% of the total marks available for the assignment will apply for each working day late.
- 4 Requirements for student to be awarded a passing grade in the course:
To be assured of a passing grade, students must demonstrate, via the summative assessment items, that they have achieved the required minimum standards in relation to the objectives of the course by satisfactorily completing all summative assessment items.
- 5 Method used to combine assessment results to attain final grade:
The final grades for students will be assigned on the basis of the weighted aggregate of the marks obtained for each of the summative assessment items in the course.
- 6 Examination information:
In an Open Examination, candidates may have access to any material during the examination except the following: electronic communication devices, bulky materials, devices requiring mains power and material likely to disturb other students
- 7 Examination period when Deferred/Supplementary examinations will be held:
Any Deferred or Supplementary examinations for this course will be held during the next examination period.

- 8 University Regulations:
Students should read USQ Regulations 5.1 Definitions, 5.6. Assessment, and 5.10 Academic Misconduct for further information and to avoid actions which might contravene University Regulations. These regulations can be found at the URL <http://www.usq.edu.au/SECARIAT/calendar/Part5/> or in the printed version of the current USQ Handbook.

ASSESSMENT NOTES

- 9 The due date for an assignment is the date by which a student must despatch the assignment to the USQ. The onus is on the student to provide proof of the despatch date, if requested by the Examiner. Students must retain a copy of each item submitted for assessment. This must be produced within five days if required by the Examiner. The examiner may grant an extension of the due date of an assignment in extenuating circumstances. Students must complete the Preliminary Test before being permitted to participate in the rest of the course. The Faculty will normally only accept assessments that have been written, typed or printed on paper-based media. The Faculty will NOT accept submission of assignments by facsimile.
- 10 Students will require access to e-mail and internet access to USQConnect for this course.
- 11 Students must complete the Preliminary Test before being permitted to participate in the rest of the course. The results of the Preliminary Test will determine at which point students will enter the course. There are three entry points (Entry Point 1, 2 and 3). Entry Point 1 students are required to complete Quizzes 1 to 14. Entry Point 2 students are required to complete Quizzes 4 to 14. Entry Point 3 students are required to complete Quizzes 9 to 14.