



## Course specification

<b>Description: Foundation Mathematics</b>						
Subject	Cat-nbr	Class	Term	Mode	Units	Campus
MAT	1100	40308	1, 2005	EXT	1.00	Toowoomba

<b>Academic group:</b>	FOSCI
<b>Academic org:</b>	FOS003
<b>Student contribution band:</b>	2
<b>ASCED code:</b>	010101

### STAFFING

Examiner: Christine McDonald

Moderator: Janet Taylor

### OTHER-REQUISITES

Pre-requisite: 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 will be able to:

1. demonstrate a sound understanding of a number of mathematical topics that are essential for tertiary studies in science, engineering, surveying and business;
2. interpret and solve a range of authentic problems involving mathematical concepts relevant to this course;
3. 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 - trigonometric ratios and identities, solution of triangles, trigonometric functions and graphs, solution of trigonometric equations.	14.00
7.	Matrices - 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**

ALL textbooks and materials are available for purchase from USQ BOOKSHOP (unless otherwise stated). Orders may be placed via secure internet, free fax 1800642453, phone 07 46312742 (within Australia), or mail. Overseas students should fax +61 7 46311743, or phone +61 7 46312742. For costs, further details, and internet ordering, use the 'Textbook Search' facility at <http://bookshop.usq.edu.au> click 'Semester', then enter your 'Course Code' (no spaces).

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.

### **STUDENT WORKLOAD REQUIREMENTS**

ACTIVITY	HOURS
Assessment	15.00
Directed Study	112.00
Private Study	38.00

## ASSESSMENT DETAILS

Description	Marks out of	Wtg(%)	Due date
QUIZ - Q1&2 (ENTRY 1 ONLY)	100.00	0.00	28 Feb 2005 (see note 1)
QUIZ - Q3 (ENTRY 1 ONLY)	100.00	0.00	28 Feb 2005 (see note 2)
QUIZ - Q4&5 (ENTRY 1 & 2 ONLY)	100.00	0.00	28 Feb 2005 (see note 3)
QUIZ - Q6 (ENTRY 1 & 2 ONLY)	100.00	0.00	28 Feb 2005 (see note 4)
QUIZ - Q7&8 (ENTRY 1 & 2 ONLY)	100.00	0.00	28 Feb 2005 (see note 5)
QUIZ - Q9 (ALL STUDENTS)	100.00	1.00	28 Feb 2005 (see note 6)
QUIZ - Q10 (ALL STUDENTS)	100.00	1.00	28 Feb 2005 (see note 7)
QUIZ - Q11 (ALL STUDENTS)	100.00	1.00	28 Feb 2005 (see note 8)
QUIZ - Q12 (ALL STUDENTS)	100.00	1.00	28 Feb 2005 (see note 9)
QUIZ - Q13 (ALL STUDENTS)	100.00	1.00	28 Feb 2005 (see note 10)
QUIZ - Q14 (ALL STUDENTS)	100.00	1.00	28 Feb 2005 (see note 11)
PRELIMINARY TEST	3.00	0.00	04 Mar 2005
ASSIGNMENT 1	1.00	0.00	11 Mar 2005
ASSIGNMENT 2	15.00	10.00	18 Apr 2005 (see note 12)
WORKSHOP SUBMISSION	15.00	4.00	27 May 2005 (see note 13)
ASSIGNMENT 3	15.00	20.00	03 Jun 2005 (see note 14)
3 HOUR OPEN EXAMINATION	15.00	60.00	END S1 (see note 15)

### NOTES

1. Entry Point 1 Students: Quiz Q1, Q2 advisory due date is 18/03/2005.
2. Entry Point 1 Students: Quiz Q3 advisory due date is 25/03/2005.
3. Entry Point 1 and 2 Students: Quiz Q4 and Q5 advisory due date is Entry Point 1 08/04/2005 and Entry Point 2 is 18/03/2005.
4. Entry Point 1 and 2 Students: Quiz Q6 advisory due date is Entry Point 1 29/04/2005 and Entry Point 2 is 25/03/2005.
5. Entry Point 1 and 2 Students: Quiz Q7 and Q8 advisory due date is Entry Point 1 is 13/05/2005 and Entry Point 2 is 08/04/2005.
6. Entry Point 1, 2 and 3 Students: Quiz 9 advisory due date is Entry Point 1 as 03/06/2005, Entry Point 2 as 29/04/2005 and Entry Point 3 as 18/03/2005.

7. Entry Point 1, 2 and 3 Students: Quiz 10 advisory due date is Entry Point 1 as 29/07/2005, Entry Point 2 as 13/05/2005 and Entry Point 3 as 25/03/2005.
8. Entry Point 1, 2 and 3 Students: Quiz 11 advisory due date is Entry Point 1 as 12/08/2005, Entry Point 2 as 03/06/2005 and Entry Point 3 as 08/04/2005.
9. Entry Point 1, 2 and 3 Students: Quiz Q12 advisory due date is Entry Point 1 26/08/2005, Entry Point 2 as 12/08/2005 and Entry Point 3 as 29/04/2005.
10. Entry Point 1, 2 and 3 Students: Quiz 13 advisory due date is Entry Point 1 as 30/09/2005, Entry Point 2 as 23/09/2005 and Entry Point 3 as 13/05/2005.
11. Entry Point 1, 2 and 3 Students: Quiz Q14 advisory due date is Entry Point 1 as 21/10/2005, Entry Point 2 as 21/10/2005 and Entry Point 3 as 03/06/2005.
12. Assignment 2 Part A to be submitted by all students. Part B may be required of some continuing students at the request of the examiner by 03/06/2005.
13. All students gain workshop marks through participation in weekly workshop discussions.
14. Assignment 3 Part A only required to be submitted by Entry Point 3 students and other students wishing to complete by end of Semester 1. Part B which will be issued at the beginning of Semester 2 is due for continuing students on 21/10/2005.
15. 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 a grade of C- for each assignment. To complete the examination satisfactorily, students must obtain at least a grade of C- for 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 the number of available quizzes. The final mark for a quiz will be the maximum mark of all attempts made by the student. To complete the Workshop Submission satisfactorily, students must gain at least a grade of C- for the Workshop Submission.
- 3 Penalties for late submission of required work:  
If students submit assignments after the due date without prior approval then a penalty of 1 Equivalence Point gained by the student for the assignment may 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 aggregate of the weighted grades obtained for each of the summative assessment items in the course. The marks for Q9 to Q14 will be converted to grades for this process.
- 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/corporateservices/calendar/part5.htm> or in the current USQ Handbook.

## **ASSESSMENT NOTES**

- 9 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.
- 10 The workload in the Student Workload Requirements is for Entry Point 3 students. It is anticipated that the workload for Entry Point 1 and Entry Point 2 students will be substantially more .
- 11 Students will require access to e-mail and web access to USQConnect for this course.
- 12 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 24 hours if required by the Examiner. The Examiner may grant an extension of the due date of an assignment in extenuating circumstances.
- 13 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.