

2009 Course Summary Sheet

■ Graduate Diploma in Mathematical Science (MA75)

This document will assist you with the selection of your study program and completion of your enrolment. Other useful information can be found on the Student Services website studentservices.qut.com/, which can also be accessed via the Online Enrolment portlet.

Location: Gardens Point

Course duration: 2 semesters (1 year) full-time or 4 semesters (2 years) part-time

Course Commencement: Domestic Students: Course commences in February, July and Summer Program
International Students: Course commences in February and July

Total credit points: 96

Standard credit points per semester (full-time): 48

Course Coordinator: Dr Troy Farrell, Phone 07 3138 2364, Fax 07 3138 2310, Room O621 Gardens Point,
Email: sms.coursework@qut.edu.au

Entry Requirements

To be eligible to enrol an applicant will normally have completed an undergraduate degree in any discipline. Students who do not have sufficient background in introductory calculus may be advised to enrol in MA65 Graduate Certificate in Mathematical Sciences first.

Prior to Enrolment

Potential applicants for this course are advised to contact the Course Coordinator prior to submitting their application to discuss their plans. International students in particular, should be aware that full-time enrolment of at least 36 credit points per semester may not be possible. This is due to the need to meet unit prerequisites. Units are not offered externally although units do have varying amounts of on-line material available. Lectures, tutorials and computer-based practicals may be timetabled during the day or early evening.

Limits on grades of 3: A new policy concerning grades of 3 comes into effect from 1 January 2009 (QUT MOPP C/9.2). With effect from this date grades of 3 will no longer be considered a conceded or low pass but will be classified as a fail grade. Any grades of 3 awarded prior to 1 January 2009 will retain the conceded pass status and will be counted for graduation purposes up to the maximum number of grades of 3 permitted for your course. Grades of 3 incurred in units that commence after 1 January 2009 will not count towards your degree. The maximum number of pre-2009 grades of 3 permitted for this course can be found [here](#).

Important Note: please ensure you select the correct teaching period, class and location code for all units you are enrolled in. All units in your course have a location of Gardens Point and a class of Internal.

Course structure

- At least 24 credit points must be taken from postgraduate mathematics units other than MAN200 Mathematical Foundations and/or MAN201 Mathematics.
- Up to 24 credit points can be taken from units other than mathematics units.
- Limit of 36 credit points from project units.

Your planned program of study should be decided in consultation with the Course Coordinator. It will take into account your background and area of interest within the mathematical sciences. Strands represent areas of the mathematical sciences which may be of interest to you and the units listed under each strand can guide you in developing your planned program. Students will usually select units from one or two strands only. The unit MAN700 Project can be used to satisfy the rule requiring at least 24 credit points from postgraduate mathematics units other than MAN200 and/or MAN201.

The following postgraduate mathematics units are available in all strands (subject to the limit on credit points from project units):

		Credit Points	Teaching Period Offered	Prerequisite(s)	Corequisite(s)
MAN200	Mathematical Foundations	12	1, 2	Permission from Course Coordinator	
MAN201	Mathematics	12	1, 2	Permission from Course Coordinator	MAN200
MAN700	Project	24	1, 2, Summer	Permission from Course Coordinator	
MAN717	Minor Project	12	1, 2, Summer	Permission from Course Coordinator	
MAN787-1	Project	12	1, 2, Summer	Permission from Course Coordinator	
MAN787-2	Project	12	1, 2, Summer		
MAN787-3	Project	12	1, 2, Summer		

If you wish to take any of the above units you need to discuss your plans and the proposed content with the Course

Coordinator.

The following strand information is to assist you with unit selection. You do not have to enrol in all units listed for a strand. The prerequisite units are given to guide you. Depending upon your background, you may have already covered some of the units listed (or equivalent units) in your undergraduate studies. If you have not studied any mathematics for some time, you may need to undertake one or two units prior to commencing those listed in the strand information.

Mathematical Modelling/Applied Mathematics		Credit Points	Teaching Period Offered	Prerequisite(s)	Corequisite(s)
<i>Postgraduate mathematics units:</i>					
MAN761	Analysis	12	2	MAB311	
MAN764	Applied Mathematical Modelling	12	2	MAB613, MAB672	
MAN774	Perturbation Methods	12	1	MAB413, MAB521	
MAN777	Mathematics of Fluid Flow	12	1	MAB613	MAB672
<i>Prerequisite units:</i>					
MAB111	Mathematical Science 1B	12	1, 2, Sum-2	SA in Senior Maths C or MAB100	<i>Incompatible:</i> MAB131
MAB112	Mathematical Sciences 1C	12	1, 2, Sum-2		MAB111 <i>Incompatible:</i> MAB132
MAB220	Computational Mathematics 1	12	1, 2	SA in Senior Maths B or MAB105 or equivalent	MAB100 if don't have SA in Senior Maths C
MAB311	Advanced Calculus	12	1	MAB111, MAB112	
MAB312	Linear Algebra	12	1	MAB111, MAB112	
MAB413	Differential Equations	12	2	MAB311 or MAB312	
MAB422	Mathematical Modelling	12	2	MAB111, MAB112	
MAB521	Applied Mathematics 3	12	1	MAB311	
MAB613	Partial Differential Equations	12	2	MAB311, MAB413	
MAB672	Advanced Mathematical Modelling	12	1	MAB312, MAB422	
<i>Recommended:</i> MAB413					
Computational Mathematics					
<i>Postgraduate mathematics unit:</i>					
MAN771	Computational Mathematics 4	12	2	MAB522, MAB613	
<i>Prerequisite units:</i>					
MAB111	Mathematical Sciences 1B	12	1, 2, Sum-2	SA in Senior Maths C or MAB100	<i>Incompatible:</i> MAB131
MAB112	Mathematical Sciences 1C	12	1, 2, Sum-2		MAB111 <i>Incompatible:</i> MAB132
MAB220	Computational Mathematics 1	12	1, 2	SA in Senior Maths B or MAB105 or equivalent	MAB100 if don't have SA in Senior Maths C
MAB311	Advanced Calculus	12	1	MAB111, MAB112	
MAB312	Linear Algebra	12	1	MAB111, MAB112	
MAB420	Computational Mathematics 2	12	2	MAB220, MAB312	<i>Recommended:</i> programming experience in MATLAB
MAB480	Introduction to Scientific Computation	12	2	MAB112	<i>Recommended</i> MAB220
MAB522	Computational Mathematics 3	12	1	MAB311, MAB420	
Operations Research					
<i>Postgraduate mathematics units:</i>					
MAN768	Advanced Techniques in Operations Research	12	1*	MAB525	
<i>Prerequisite units:</i>					
MAB111	Mathematical Sciences 1B	12	1, 2, Sum-2	SA in Senior Maths C or MAB100	<i>Incompatible:</i> MAB131
MAB112	Mathematical Sciences 1C	12	1, 2, Sum-2		MAB111 <i>Incompatible:</i> MAB132
MAB210	Statistical Modelling 1	12	1, 2	SA in Senior Maths B	MAB112
MAB315	Operations Research 2	12	1	MAB112, MAB210	
MAB525	Operations Research 3A	12	1	MAB315	
MAB625	Operations Research 3B	12	2	MAB315	

Statistics/Statistical Modelling		Credit Points	Teaching Period Offered	Prerequisite(s)	Corequisite(s)
<i>Postgraduate mathematics units:</i>					
MAN536	Time Series Analysis	12	1*	MAB101, MAB314	<i>Incompatible:</i> MAB526, MAB536, MAN526
MAN624	Applied Statistics	12	2	MAB314, MAB414	<i>Incompatible:</i> MAB624
MAN765	Bayesian Data Analysis	12	1	MAB524 <i>Recommended:</i> MAB624 or MAN624	<i>Incompatible:</i> MAB765
MAN766	Applied Time Series Analysis	12	2*	MAB524, MAN526 or MAN536	
MAN775	Statistical Modelling of Financial Processes	12	1*	MAB524, MAN526 or MAN536	
<i>Prerequisite units:</i>					
MAB101	Statistical Data Analysis 1	12	1, 2, Sum-2	SA in Senior Maths B or MAB105 or equivalent	<i>Incompatible:</i> EFB101, MAB135, MAB136, MAB137, MAB138, MAB233, MAB893
MAB111	Mathematical Sciences 1B	12	1, 2, Sum-2	SA in Senior Maths C or MAB100	<i>Incompatible:</i> MAB131
MAB112	Mathematical Sciences 1C	12	1, 2, Sum-2		MAB111 <i>Incompatible:</i> MAB132
MAB210	Statistical Modelling 1	12	1, 2	SA in Senior Maths B	MAB112
MAB314	Statistical Modelling 2	12	1	MAB112, MAB210	
MAB414	Applied Statistics 2	12	2	MAB101, MAB111	
MAB524	Statistical Inference	12	2*	MAB314	
MAB533	Statistical Techniques	12	1	MAB210, MAB414	
Quantitative Analysis/Financial Mathematics					
<i>Postgraduate mathematics units:</i>					
MAN536	Time Series Analysis	12	1*	MAB101, MAB314	<i>Incompatible:</i> MAB526, MAB536, MAN526
MAN624	Applied Statistics	12	2	MAB314, MAB414	<i>Incompatible:</i> MAB624
MAN765	Bayesian Data Analysis	12	1	MAB524 <i>Recommended:</i> MAB624 or MAN624	MAB765
MAN766	Applied Time Series	12	2*	MAB524, MAN526 or MAN536	
MAN769	Mathematics of Finance	12	2*	MAB413 <i>Recommended:</i> MAB623	
MAN775	Statistical Modelling of Financial Processes	12	1*	MAB524, MAN526 or MAN536	
<i>Prerequisite units:</i>					
MAB101	Statistical Data Analysis 1	12	1, 2, Sum-2	Senior Maths B or MAB105 or equivalent	<i>Incompatible:</i> EFB101, MAB135, MAB136, MAB137, MAB138, MAB233, MAB893
MAB111	Mathematical Sciences 1B	12	1, 2, Sum-2	SA in Senior Maths C or MAB100	<i>Incompatible:</i> MAB131
MAB112	Mathematical Sciences 1C	12	1, 2, Sum-2		MAB111 <i>Incompatible:</i> MAB132
MAB210	Statistical Modelling 1	12	1, 2	SA in Senior Maths B	MAB112
MAB313	Mathematics of Finance	12	2	MAB100 or SA in Senior Maths C	MAB111
MAB314	Statistical Modelling 2	12	1	MAB112, MAB210	
MAB413	Differential Equations	12	2	MAB311 or MAB312	

Quantitative Analysis/Financial Mathematics (Continued)		Credit Points	Teaching Period Offered	Prerequisite(s)	Corequisite(s)
MAB414	Applied Statistics 2	12	2	MAB101, MAB111	
MAB524	Statistical Inference	12	2*	MAB314	
MAB533	Statistical Techniques	12	1	MAB210, MAB414	
MAB623	Financial Mathematics	12	2	MAB311, MAB313	<i>Recommended: EFB210</i>

Scientific Computation and Visualisation

MAN681	Advanced Visualisation and Data Analysis	12	2 Not offered after 2009	MAB481	<i>Incompatible: MAB681 Highly recommended: MAB480</i>
--------	--	----	-----------------------------	--------	--

Prerequisite mathematics units:

MAB101	Statistical Data Analysis 1	12	1, 2, Sum-2	SA in Senior Maths B or MAB105 or equivalent	<i>Incompatible: EFB101, MAB135, MAB136, MAB137, MAB138, MAB233, MAB893</i>
MAB111	Mathematical Sciences 1B	12	1, 2, Sum-2	SA in Senior Maths C or MAB100	<i>Incompatible: MAB131</i>
MAB112	Mathematical Sciences 1C	12	1, 2, Sum-2		<i>Incompatible: MAB111 MAB132</i>
MAB281	Mathematics for Computer Graphics	12	2	MAB105 or Senior Mathematics B	
MAB480	Introduction to Scientific Computation	12	2	MAB112	<i>Incompatible: ITB849, MAB380 Recommended: MAB220</i>
MAB481	Visualisation and Data Analysis	12	1 Not offered after 2009	MAB101, MAB111, MAB480 or ITB003	<i>Highly Recommended: MAB112</i>

Discrete Mathematics

Postgraduate mathematics unit:

MAN778	Applications of Discrete Mathematics	12	1	MAB621 or MAB461	
--------	--------------------------------------	----	---	------------------	--

Prerequisite units:

MAB111	Mathematical Sciences 1B	12	1, 2, Sum-2	SA in Senior Maths C or MAB100	<i>Incompatible: MAB131</i>
MAB112	Mathematical Sciences 1C	12	1, 2, Sum-2		<i>Incompatible: MAB111 MAB132</i>
MAB461	Discrete Mathematics	12	2	MAB112	

Mathematics for Secondary Teaching

Postgraduate mathematics units:

MAN700	Project	24	1, 2		
--------	---------	----	------	--	--

Plus at least one other postgraduate mathematics unit
(or other combination to give at least 36 credit points from appropriate postgraduate mathematics units)

Other mathematics units:

You would usually select across a range of areas of mathematics and statistics

Non-mathematics units:

You could select up to 24 credit points from units offered by the Faculty of Education related to the teaching of mathematics.

*** It is anticipated that these units will change semester from 2010.**

Articulation: Domestic students who have successfully completed the Graduate Diploma in Mathematical Science with a GPA of 4.0 or better may be invited to articulate to Master of Mathematical Science (MA85).

International students wishing to change courses should consult International Student Business Services.