

INFORMATION FOR NEW STUDENTS

MASTER OF COMMERCE IN ACTUARIAL STUDIES (2015)

The Master of Commerce (Actuarial Specialisation) This is a postgraduate degree intended for graduates with an undergraduate degree in actuarial studies or in some other discipline combined with actuarial professional accreditation for at least 50% of the Part I exams of the Institute of Actuaries of Australia. The degree provides students with an opportunity to obtain accreditation for Part II of the Australian Actuaries Institute professional qualification, along with advanced level coursework study in a range of relevant disciplines including finance, economics and statistics.

We envisage that most students in the degree will already have a strong background in the Core Technical (Part I) subjects examined by the Institute of Actuaries of Australia and will be doing our degree for the purpose of obtaining the Part II accreditation. Students with this background will be exempted from the 4 “gateway units” normally required for entry to the M Com degree and so the degree will be of at least 1.5 years duration if studied full time by enrolling in 4 units per semester. The Part II accreditation requires students to do three MQ units and completing these takes one calendar year as one of them is available only in semester 1 and the other 2 are available only in semester 2. These three Part II units are available both internally and externally (distance education via the web). It would be feasible to do these units externally or, for local students or those with an appropriate visa, part time while working full time. A combination of 1 year full time study and 1 year part time study might work well for some students.

Entry requirements for the degree

Australian Bachelor degree (or recognised equivalent) in Actuarial Studies

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Australian Bachelor degree (or recognised equivalent) combined with the completion of four of eight Institute of Actuaries of Australia core technical exams; AND

- Minimum GPA of 2.7 (out of 4.00); AND
- Minimum English Language Proficiency: IELTS or IELTS equivalent of 6.5 overall, with minimum 6.0 in each band

The rules for the award of the degree (the “study pattern”)

Most of the units in the degree are 4 credit points. Students must complete a minimum of 64 credit points. Of these, at least 48 credit points must be at 800 level or above. The other 16 credit points are for the 600 level “gateway” units which most of our students won’t need to do.

Capstone Requirement: Students must enrol in the unit FOBE800. The study pattern for the degree will force students to do this unit.

Independent Research Requirement: Students are required to conduct independent research as part of the degree. The requirement is the equivalent of a 4 credit point unit. This requirement is spread across various different units. The unit ACST840 Quantitative Research Methods will include an independent research component worth 60% of the total marks for the unit. Students are required to enrol in this unit. The remaining 40% of independently executed research will be covered in the ACST units mentioned below, each of which will include a minimum 10% research assessment. The units ACST831, ACST832 and ACST871 each include an independent research assessment worth 20%. Other elective units also have research methodology embedded. ACST861 and ACST862 provide skills in the application of statistics and probability to pricing and reserving in general insurance. ACST818 and ACST819 provide skills in survival analysis and actuarial modelling. These units provide substantial training in statistical methods relevant to research in actuarial science, insurance and finance. ACST816 & ACST817 provide skills in quantitative finance and associated mathematical and statistical methods.

Specialisations: Students can choose to do either 1 specialisation and a further 24 credit points at 800 level or higher OR they can choose 2 specialisations and a further 4 credit points at 800 level or higher. Details of the specialisations can be found here <http://handbook.mq.edu.au/2015/Specialisations/PGSpecialisationsByDegrees>

The specialisations available in the degree are:

Code	Specialisation
ACC11S	Accounting
ACT11S	Actuarial Studies
BMO11S	Business Management and Organisations
COR11S	Corporate Governance
ECO11S	Economics
FIN11S	Finance
FCG11S	Financial Crime and Governance
HRM11S	Human Resource Management
MKT11S	Marketing

Electives: The set of electives available to you will depend on whether you do one or two specialisations. The specialisations will consist of a set of 20 credit points worth of units. If you do two specialisations it will constrain your choice of electives for the degree more than if you do only one specialisation. Students must do at least 44 credit points of units at 800 level or above designated as Commerce. This leaves room for one 4 credit point unit at 800 level or higher from some other faculty. The list of units designated as commerce is available here <http://handbook.mq.edu.au/2015/Units/PGBByDesignation/Commerce>

Actuarial Studies Specialisation: The following table sets out the requirements in terms of which units should be included:

- 1) The M Com capstone unit FOBE800 is compulsory
- 2) The following 4 ACST units are compulsory

ACST840	Quantitative Research Methods II
ACST831	Actuarial Control Cycle 1
ACST832	Actuarial Control Cycle 2
ACST871	Investment Management

3) At least 1 of the following units must be included

ACST816	Quantitative Asset and Liability Modelling 1
ACST817	Quantitative Asset and Liability Modelling 2
ACST818	Survival Models
ACST819	Actuarial Modeling
ACST828	Options, Futures and Derivatives
ACST829	Capital Budgeting and Financial Modelling
ACST861	Mathematical Theory of Risk
ACST862	General Insurance Pricing and Reserving

Each unit is worth 4 credit points. This gives 20 credit points of units required for the specialisation in Actuarial Studies. The unit FOBE800 is required for all of the specialisations so it is not part of the 20 credit points. If you don't want to do a second specialisation then you would need to do a further 24 credit points at 800 level or higher to meet the requirements for the M.Com degree with a specialisation in actuarial studies. There are a range of units available from various disciplines.

Prerequisites, Co requisites, Waivers and Enrolment in MQ units

Most of our 800 level units have prerequisites or co requisites or both. These are usually other MQ units. Details of the prerequisites and co requisites can be found in the university handbook.

If you did your undergraduate or other degree at some other institution, then when you attempt to enrol the student enrolment system may prevent you from enrolling due to not meeting the prerequisites / co requisites. If this happens you may need to apply for a waiver. When using the student enrolment system this may show up as "special approval" on the screen. You can also do this via ask@mq.edu.au.

The part II units ACST831, ACST832, ACST871 and selection of units for the degree:

These units are compulsory for this degree specialisation. For ACST831 the prerequisite is "Permission of Executive Dean of Faculty". In practice this approval is delegated to the Department of Applied Finance and Actuarial Studies. We normally grant approval for enrolment in this unit for students who have completed at least 6 out of the 8 CT exams of the Institute of Actuaries or the Macquarie University units which correspond to them or something we consider equivalent. This must include the subject CT5 which covers the mathematics of life insurance. If your undergraduate degree was in actuarial studies at another university this may count as meeting the prerequisite if the units you studied correspond to the content of the CT exams. To enrol in this unit ACST831 you may need to apply for a waiver.

ACST832 has ACST831 as its prerequisite. ACST871 has a more flexible prerequisite though formally it is "Permission of Executive Dean of Faculty". We consider that the following background is required for this unit: CT1, CT2, CT3, & CT7. Having CT8 would also be very helpful. You need to choose your units in the degree so that you meet the requirements for enrolling in the units ACST831, ACST832 and ACST871 as part of the degree. Another consideration in choosing your units is achieving full accreditation for Part I.

Recognition of Prior Learning (RPL) / advanced standing in the degree

RPL for Admission: Macquarie University may recognise prior formal, informal and non-formal learning for the purpose of granting credit towards, or admission into, a program. The recognition of these forms of learning is enabled by the University's Recognition of Prior Learning (RPL) Policy and its associated Procedures and Guidelines. For this degree, decisions about RPL for admission are at the discretion of the Department of Applied Finance and Actuarial Studies. The formal entry requirements would almost always apply.

RPL for Credit Transfer: In the Master of Commerce (Actuarial Specialisation) degree, recognition of prior learning for the purpose of granting exemptions but not credit towards the program is for previous relevant studies **at postgraduate level** and for passing the professional actuarial exams of the UK Institute of Actuaries, the US Society of Actuaries and US Casualty Actuarial Society or equivalent professional actuarial bodies. Decisions about RPL for credit transfer into the degree based on other postgraduate study are at the discretion of the Department of Applied Finance and Actuarial Studies.

Duration of the degree and accreditation / exemptions: The time taken to complete the degree will depend on how many of the exemption subjects you choose to do and whether you do it full time or part time or some combination of these.

MAPPING OF Macquarie University units to IAAust accreditation

	MQ unit code	when	IAAust exams	MQ unit code and unit name
1	ACST851	S1 S2	PART 1: CT1	ACST851 - Mathematics of Finance
2	ACST852	S2	PART 1: CT2	ACST852 - Finance and Financial Reporting
3	STAT806(*)	S1	PART 1: CT3	STAT806 Statistical Inference
3	STAT810(*)	S1	PART 1: CT3	STAT810 – Statistical Theory
4	ACST818	S1	PART 1: CT4	ACST818 - Survival Models
5	ACST819	S2	PART 1: CT4	ACST819 - Actuarial Modelling
6	ACST859	S1 S2	PART 1: CT5	ACST859 - Contingent Payments 1
7	ACST860	S1 S2	PART 1: CT5	ACST860 - Contingent Payments 2
8	ACST861	S1	PART 1: CT6	ACST861 - Mathematical Theory of Risk
9	ACST862	S2	PART 1: CT6	ACST862 - General Insurance Pricing and Reserving
10	ECON991	S1 S2	PART 1: CT7	ECON991 ECONOMICS FOR ACTUARIES
11	ACST816	S1	PART 1: CT8	ACST816 - Quantitative Asset and Liability Modelling 1
12	ACST817	S2	PART 1: CT8	ACST817 - Quantitative Asset and Liability Modelling 2
13	ACST831	S1	PART II	ACST831 - Actuarial Control Cycle 1
14	ACST832	S2	PART II	ACST832 - Actuarial Control Cycle 2
15	ACST871	S2	PART II	ACST871 - Investment Management

(*) STUDENTS MAY DO EITHER STAT810 OR STAT806

Study plan 1: for Master of Commerce (actuarial) for students who have already completed the Part I CT exams or university equivalent subjects

YEAR 1: In year 1 you could include the 3 Part II units (ACST831, ACST832 and ACST871), the capstone unit and the research unit by choosing units as follows.

Session 1		Session 2	
Unit Code	Unit Name	Unit Code	Unit Name
ACST831	Actuarial Control Cycle 1	ACST832	Actuarial Control Cycle II
????	Elective	ACST871	Investment Management
????	Elective	FOBE800	Contemporary Business Issues
????	Elective	ACST840	Quantitative Research Methods II

This would potentially allow students to complete the capstone requirement, the research requirement and qualify for accreditation for Part II of the Australian Actuaries Institute’s professional qualification in Year 1. Some students may want to complete the rest of the degree part time after that.

YEAR 2: In Year 2, students would need to do a range of elective units, selected from those units available in the study pattern for the degree. This could be done over one semester by doing 4 PG units or it could be done over 2 semesters by doing 2 PG units in each of the 2 semester.

Alternative plan: students could consider doing the units ACST840 and FOBE800 in semester 2 of year 1 and deferring the units ACST831, ACST832 and ACST871 till the second year as these 3 units are available part time by web based distance education .Many students study these units by distance while working full time in industry. The unit ACST840 is only available by on campus study in semester 2 and not via external study. The unit FOBE800 is only available via on campus study and in 2015 only in semester 2. In later years it will likely be available in both semesters.

Study plan 2: for master of commerce (actuarial) for students who have not met the requirements for enrolment into ACST831 on entry to the degree. This would be the case if you have a non actuarial undergraduate degree and have not passed / been exempted from 6 of the CT type exams including CT5. We don’t have a specific plan for students in this situation as there is likely to be huge variability in people’s circumstances.

YEAR 1: In Year 1 you should include MQ units corresponding to the CT exemptions you are lacking. You could enrol for the research unit ACST840 Quantitative Research Methods II if you have a strong statistics background but it may be more advisable to do this unit in the second year of the program. You could enrol in the unit ACST871 in semester 2 of Year 1 if you have passed / been exempted from the following CT exams: CT1 (ACST851) , CT2 (ACST852), CT3 (STAT806 or STAT810), CT7 (ECON991) and CT8 (ACST816 & ACST817) or equivalents of these.

YEAR 2: We recommend students enrol in whatever combination of units they need to do to qualify for entry into the unit ACST831 in the second year of the program and in the second year choose units as follows.

Session 1		Session 2	
Unit Code	Unit Name	Unit Code	Unit Name
ACST831	Actuarial Control Cycle 1	ACST832	Actuarial Control Cycle II
????	Elective	ACST871	Investment Management
????	Elective	FOBE800	Contemporary Business Issues
????	Elective	ACST840	Quantitative Research Methods II

GPA = grade point average

Each unit (subject) you do in a degree program is assigned a grade depending on the performance (marks obtained) of the student. The grades are High Distinction, Distinction, Credit, Pass. The cutoff marks for each of these grades are 85%, 75%, 65% and 50%. A mark below 50% is a fail grade.

Each of these grades is assigned “grade points”. On a 4 point scale such as we use at MQU the grade points are as follows: HD or D is worth 4 points, Cr is worth 3 points, P is worth 2 points, F is worth 0 points. Some universities use a 7 point scale instead. In this case the grade points are HD =7, D =6, Cr =5, P =4, F =0.

In most degree programs, each unit (subject) is worth a certain number of “credit points” and the degree will have rules about how many credit points (and which types of units) are required to complete the degree.

The GPA is a weighted average of the grade points, weighted by the credit points. For instance suppose you covered 10 units in your degree and the unit names and credit points and results are as follows:

Unit name	Credit points	Mark %	grade	Grade points	Grade points × credit points
Subject A	4	75%	D	4	4*4=16
Subject B	4	65%	Cr	3	4*3=12
Subject C	4	50%	P	2	4*2=8
Subject D	4	85%	HD	4	4*4=16
Subject E	4	45%	F	0	4*0=0
Subject F	4	64%	P	2	4*2=8
Subject G	4	84%	D	4	4*4=16
Subject H	4	74%	Cr	3	4*3=12
Subject I	2	89%	HD	4	2*4=8
Subject J	2	64%	P	2	2*2=4

Suppose the degree rules require you to pass at least 32 credit points of units

The sum of the credit points attempted is $8*4+2*2=36$

The sum of the product of grade points and credit points is $16+12+8+16+0+8+16+12+8+4=100$

The grade point average is $100\div36=2.7778$

If the result for subject C had been 85% instead of 50% then the GPA would instead be $108/36=3.0$ since the grade would have changed to HD and the grade points would have changed to 4 so the grade points times credit points would have been 16 instead of 8 for that unit.