

MACQUARIE
UNIVERSITY



FACULTY OF
BUSINESS AND ECONOMICS

ACST402/831/831X
Actuarial Control Cycle 1

Semester 1, 2011

*Department of Applied Finance
and Actuarial Studies*

**MACQUARIE UNIVERSITY
FACULTY OF BUSINESS AND ECONOMICS
UNIT GUIDE**

Year and Semester: Semester 1, 2011

Unit convenor: Associate Professor Leonie Tickle

Prerequisites: Completion of a degree in Actuarial Studies (or the equivalent in terms of either the Part I subjects of the Institute of Actuaries of Australia or other routes)

Students in this unit should read this unit outline carefully at the start of semester. It contains important information about the unit. If anything in it is unclear, please consult the unit convenor.

ABOUT THIS UNIT

Unit Description

The overall aim of the Actuarial Control Cycle (ie. this unit Actuarial Control Cycle 1 in conjunction with ACST403/832/832X Actuarial Control Cycle 2) is for you to understand the basic principles and concepts governing the actuarial management of financial products, services and schemes across a range of practice areas (eg. insurance, pensions, superannuation, finance, friendly societies), government and other environments, so that you will be able to apply those principles and concepts to a wide range of problems and issues that you may encounter in professional practice.

Unit Rationale

The two units together consider the process of actuarial and financial management including: product design; pricing; marketing; monitoring of experience; reserve setting; financing; solvency; determination and distribution of surplus; and its role in enterprise risk management. The overall control process is studied within the constraints imposed by the commercial environment and the actuarial professional code of conduct and standards: this includes a discussion of business ethics and issues of professionalism in actuarial practice.

You will not be expected to show the same degree of skill and judgement as a qualified actuary. The Actuarial Control Cycle (ACC) units aim to help you start moving towards that level of professional capability by understanding the “big picture” of actuarial practice – how the mathematical and statistical techniques for actuarial functions like pricing and reserving fit into the financial management of products, services, funds and organisations.

Macquarie University's units Actuarial Control Cycle 1 and 2 are accredited by the Institute of Actuaries of Australia as meeting its standards for exemption from part of Part II of the actuarial qualification. From 2011, Part II consists of Part IIA Actuarial Control Cycle and Part IIB Investment and Asset Modelling. More information about Part II can be found at:

<http://www.actuaries.asn.au/EducationandProfessional/Education/PartII/PartII2011.aspx>

and the syllabus for the Actuarial Control Cycle can be found at:

<http://www.actuaries.asn.au/EducationandProfessional/Education/PartII.aspx> .

TEACHING STAFF

Team Member	Team Role	Room	Telephone	Consultation
Leonie Tickle	Unit Convenor / Lecturer	E4A 608	9850 8567	Tuesday 9 - 11
Peter Carroll	Lecturer	-	-	You can contact each team member via the ACC 1 web site
Bruce Edwards	Lecturer	-	-	
Hong Xie	Unit Administrator	E4A 622B	9850 4776	

CLASSES

Enrolment streams

ACC 1 is offered in three modes – campus classes (North Ryde), city classes (Sydney CBD) and distance education (students can be located anywhere).

Face-to-face classes (Campus and City)

We believe that the best way we can help you to master the Actuarial Control Cycle subject is not by giving traditional lectures where your role is basically to listen, think and take notes. We have planned the face-to-face classes to be like workshops: a mixture of short “micro-presentations”, small group work, discussions involving the whole class, and individual activities. Most weeks, we will ask you to do some preparatory work – reading, research, writing or just thinking. If you want to get the most out of the classes, do the preparation, and get involved in the classroom work.

Since our classes are not going to be traditional lectures, they will not be recorded using the University’s iLecture facility (which can be well suited to lectures but not to workshops, discussions and group work). However, in some weeks, the lecturer will make a special downloadable recording which will be available from the website.

Scheduled weekly face-to-face classes are:

Enrolment stream	Day	Time	Location
Campus class	Mondays	2.00-4.00pm	E7B T3
	Wednesdays	2.00-4.00pm	W5A T1
City class	Tuesdays	5.30-8.30pm	Portside Centre Level 5, 207 Kent Street, Sydney

Alterations to the class times or locations will be advised in class and on the ACC 1 web site.

Distance education class

If you have enrolled for distance education mode (ACST831X) you will not be attending face-to-face classes (usually because you don’t live in Sydney!). You will have access to all materials from the face-to-face classes (slides, handouts, exercises, etc), and the same discussions and other activities, via the ACC 1 web site.

REQUIRED AND RECOMMENDED TEXTS AND/OR MATERIALS

Textbook

There is one textbook for ACC 1, referred to here and elsewhere in this unit as UAM.

Bellis, C, Lyon, R, Klugman, S & Shepherd, J (2010) *Understanding Actuarial Management: the actuarial control cycle*, 2nd edition, Institute of Actuaries of Australia.

The textbook can be purchased from the Institute of Actuaries of Australia, at:

<http://www.actuaries.asn.au/Publications/Publication.aspx?id=8>

Copies of the book are available in the Reserve section of the Macquarie University library.

Other useful articles will be set out at the beginning of each Learning Guide, and made available on the ACC 1 web site.

Learning Guide

There is a Learning Guide for each section of work. You should read the Learning Guide in advance of the lectures, and bring a copy with you to classes.

TECHNOLOGY USED AND REQUIRED

In this unit, you will need to have access to and to be able to use software to produce overhead slides, software to produce .pdf documents, and word-processing software to produce reports.

UNIT WEB PAGE

The ACC 1 web site (using Blackboard) is integral to this course unit, whether you are a distance education student or in a face-to-face class. Passive involvement in ACC 1 greatly reduces the likelihood of achieving the exemption standard of understanding. Interaction with other students and with teachers is very important, and the web site is the forum for that interaction.

You will need to be accessing the web site regularly as well as checking *Announcements* and *Discussions* in the Course Tools menu – we recommend at least every couple of days. The ACC 1 web site entry page is at:

<http://learn.mq.edu.au>.

You will need a web browser. Recommended web browsers are outlined under Help in the My Online Units main page in Blackboard.

Before using the ACC 1 Web site, read and make sure you understand the document called “*Security Policy and Rules Governing the Use of the Computing and Communications Facilities at Macquarie University*” which is available at:

<http://www.ocs.mq.edu.au/POLICIES/mqrules.html>.

ASSUMED KNOWLEDGE AND SKILLS

We assume from the start of ACC 1 that you have acquired the knowledge and skills in Subjects CT1 to CT8 of Part I of the Institute of Actuaries of Australia education program.

LEARNING OBJECTIVES AND OUTCOMES

On completion of this unit, students should be able to do the following.

- Discuss and apply an Actuarial Control Cycle in a variety of practical commercial situations.
- Interpret and discuss how current economic, social, demographic and economic factors can affect medium- and long-term commercial decision.
- Examine the need for, and impact of, regulation and government policy on medium- and long-term financial decisions.
- Analyse the main features and risks of financial products and contracts from the point of view of consumers and providers.
- Demonstrate an understanding of enterprise risk management and its role in organisational management.
- Discuss and apply the process of product design.
- Select, describe, critically examine, explain and analyse an appropriate model to solve client problems.
- Discuss the importance of capital, project future levels of capital, identify risks to capital, and demonstrate an understanding of the interaction between risk and capital.
- Apply appropriate techniques to the pricing of products and contracts.

Detailed learning objectives are summarised at the start of each Learning Guide. You should revise these to check your understanding of the aims of each topic.

GRADUATE CAPABILITIES

In addition to the discipline-based learning objectives, all academic programs at Macquarie seek to develop the capabilities the University's graduates will need to develop to address the challenges, and to be effective, engaged participants in their world.

This unit contributes to the development of the following graduate capabilities:

1. Discipline Specific Knowledge and Skills:
 - (a) Have an appreciation of the time value of money.
 - (d) Understand the use of Expected Present Value as a key concept in many actuarial applications.
 - (e) Have skills in fitting and assessing the reliability of statistical models, particularly in the context of financial applications.
2. Critical, Analytical and Integrative Thinking
3. Problem Solving and Research Capability
4. Creative and Innovative
5. Effective Communication
6. Engaged and Ethical Local and Global citizens
7. Socially and Environmentally Active and Responsible

8. Capable of Professional and Personal Judgement and Initiative
9. Commitment to Continuous Learning

TEACHING AND LEARNING STRATEGY

The unit is taught as set out in the Classes section for face to face classes and distance students. The timetable at the end of this Unit Outline sets out the topics covered in each week of the Semester.

RESEARCH AND PRACTICE

This unit uses research in several ways.

- This unit uses research by Macquarie University researchers (eg. current and ex Macquarie staff members are editors and authors of the main text and other readings)
- This unit uses research from external sources (references will be provided)
- This unit gives you practice in applying research findings in your assignments

RELATIONSHIP BETWEEN ASSESSMENT AND LEARNING OUTCOMES

Assessment tasks

Task	Weighting	Brief outline
Textbook chapter tasks	5%	A range of tasks (roughly one for each relevant chapter of UAM), some of which will be graded
Assignment 1	15%	A report on a topic to be advised
Assignment 2	5%	Slides and a handout executive summary for a presentation
Presentation (campus and city students only)	5%	An oral presentation using the material prepared for Assignment 2
Discussion contribution (distance students only)	5%	Contributions to website discussion topics
Reflective writing task	-	A report on your experience of learning in this subject (graded Satisfactory or Not Satisfactory)
Final exam	70%	A conventional 3-hour written exam

Full details of each assessment task, including submission details, will be given on the ACC 1 website under Course Tools / Course Content / Assessment Tasks 2011.

The submission dates for the assessment tasks have been spread over the semester, so that you can plan your work accordingly. Although the Reflective Writing Task is not weighted in the assessment, you must have a Satisfactory result on it to pass the unit.

	Textbook Chapter Tasks	Assignment 1	Assignment 2	Presentation	Discussion contribution	Reflective Writing Task	Exam
Description	Written reports*	Written report*	Report and slides*	Presentation*	Discussion postings*	Written report*	3 hour written exam paper
Due date	Mondays*	3 April*	1 May*	2, 3 or 4 May*	10 April and 22 May*	29 May*	6 – 24 June
% Weighting	5% in total	15%	5%	5%	5%	0% (required)	70%
Grading method	See task*	See task*	See task*	See task*	See task*	See task*	See below
Submission method	Website Assignments*	Website Assignments*	Website Assignments*	In class*	Website Assignments*	Website Assignments*	Exam
Feedback type	Individual mark + class-level**	Individual mark and feedback + class-level*	Individual mark and limited feedback*	Individual mark*	Individual mark*	Graded Satisfactory or Not Satisfactory	None
Feedback location	BlackBoard Grade Book	BlackBoard Grade Book	BlackBoard Grade Book	BlackBoard Grade Book	BlackBoard Grade Book	BlackBoard Grade Book	-
Estimated student workload (hours)	15	20	10	7	7	2	35
Learning outcomes assessed							
- General, or a mix of the following			X	X	X	X	
- Actuarial Control Cycle	X	X					X
- Context	X	X					X
- Regulation	X	X					X
- Enterprise risk management	X	X					X
- Consumer needs	X						X
- Product design	X						X
- Modelling and data	X						X
- Capital	X						X
- Pricing	X						X
Graduate capabilities assessed							
- Discipline specific knowledge	X	X					X
- Critical, analytical, integrative	X	X	X		X	X	X
- Problem solving, research		X	X		X		X
- Creative and innovative			X	X			X
- Effective communication	X	X	X	X	X	X	X
- Engaged and ethical						X	
- Socially / environmentally responsible						X	
- Professional and personal judgement		X	X		X	X	X
- Continuous learning					X	X	

* See the assessment task for details

** See *Assessment Tasks Marks and Feedback – What can you expect?* under Course Tools / Course Content / Assessment Tasks 2011 / Important General Information, for details

Final exam

The 3 hour final exam will be held on a date to be announced by Macquarie University during the period 6 June to 24 June. The University's exam timetable is expected to be available in draft form approximately eight weeks before the commencement of the examinations and in Final form approximately four weeks before the commencement of the examinations, from:

<http://www.timetables.mq.edu.au/exam>

Local (ie. Sydney-based) students are expected to present themselves for the examination at the time and place designated on the University's exam timetable.

Distance students (outside of Sydney) must contact Hong Xie to organise (and confirm) the location and supervision for the final examination. If these students do not confirm their exam city by the announced due date, they are at risk of not having their exam location organised.

Calculators will be allowed in the final examination but a clear indication of the steps involved in every calculation must be shown. Any machines that have a text-retrieval capacity, specifically those with a full alphabet on the keyboard, are not allowed. Calculators may be checked at the commencement of the examination, and the make/model may be recorded.

Dictionaries are not permitted in the final exam, and no reference materials are allowed to be taken into the final exam.

You should ensure that your handwriting in the final examination is legible. Sections of work that are not legible will not be marked.

The Macquarie university examination policy details the principles and conduct of examinations at the University. The policy is available at:

<http://www.mq.edu.au/policy/docs/examination/policy.htm>

SPECIAL CONSIDERATION FOR ASSESSMENTS AND EXAMS

The University is committed to equity and fairness in all aspects of its learning and teaching. In stating this commitment, the University recognises that there may be circumstances where a student is prevented by unavoidable disruption from performing in accordance with their ability. A special consideration policy exists to support students who experience serious and unavoidable disruption such that they do not reach their usual demonstrated performance level. The policy is available at:

http://www.mq.edu.au/policy/docs/special_consideration/procedure.html

If illness or unavoidable disruption affects your ability to submit an assessment task or sit the exam, you should read the information at

http://www.businessandeconomics.mq.edu.au/new_and_current_students/undergraduate/how_do_i/absences

http://www.businessandeconomics.mq.edu.au/new_and_current_students/undergraduate/how_do_i/special_consideration

immediately. Allowances may be made where a formal application for Special Consideration is approved. For your application to be considered, you must ensure that you meet the requirements specified, including providing a Professional Authority Form for applications based on medical grounds.

The only exception to sitting an examination at the designated time is where an application for Special Consideration due to documented illness or unavoidable disruption is approved. By submitting a request for special consideration you are agreeing to be available to sit a Supplementary Examination if required. If a Supplementary Examination is granted as a result of the Special Consideration process then:

- the examination will be scheduled after the conclusion of the official examination period;
- you do not have the right to request an alternative time, unless the scheduled time clashes with another Macquarie University supplementary exam that you are required to attend;
- your performance in the Supplementary Examination replaces your performance in the original examination (if any).

ACADEMIC HONESTY

The nature of scholarly endeavour, dependent as it is on the work of others, binds all members of the University community to abide by the principles of academic honesty. Its fundamental principle is that all staff and students act with integrity in the creation, development, application and use of ideas and information. This means that:

- all academic work claimed as original is the work of the author making the claim;
- all academic collaborations are acknowledged;
- academic work is not falsified in any way;
- when the ideas of others are used, these ideas are acknowledged appropriately.

Further information on the academic honesty can be found in the Macquarie University Academic Honesty Policy at

http://www.mq.edu.au/policy/docs/academic_honesty/policy.html

Your submitted written work (assignments and textbook tasks) may be compared to work of your classmates, previous students from Macquarie and other universities, and with material available on the internet, using detection software licensed to the University.

GRADES

Macquarie University uses the grades HD (High Distinction), D (Distinction), CR (Credit), P (Pass), and F (Fail) for grading the achievements of students in units of study. Grade descriptions and other information is in the Macquarie University Grading Policy which is available at:

<http://www.mq.edu.au/policy/docs/grading/policy.html>

In this subject, your grade will be determined by how well you show you understand and can apply and explain the basic principles and concepts covered. Grading in this subject is not simply a matter of adding up the marks you gain for each of the assessment tasks. Your marks are taken as an initial indicator of the quality of your understanding, but grading ultimately is based on the quality and consistency of the understanding you demonstrate. Your final Standardised Numeric Grade (SNG) represents your relative position within the relevant grade band, and is usually not the same as the raw mark.

EXAM VIEWING AND GRADE APPEALS

If, at the conclusion of the unit, you have performed below expectations, and are considering lodging an appeal of grade and/or viewing your final exam script please refer to the following website which provides information about these processes and the cut off dates in the first instance. Please read the instructions provided concerning what constitutes a valid grounds for appeal before appealing your grade.

http://www.businessandconomics.mq.edu.au/for/new_and_current_students/undergraduate/admin_central/grade_appeals

Please note that there is a limited time to make an appeal / organise a viewing, and that this must be done through the formal process rather than by a request to the unit convenor.

In this subject, marks are not usually recorded on exam scripts (eg. the marks and marker notes / comments may be recorded on separate marking pages or in detailed spreadsheets, which are not provided to individual students). Therefore, please do not expect to have access to raw marks or any marker comments / notes when you view your paper.

IAAUST EXEMPTIONS

From 2011, Macquarie University units ACST402/831/831X (ACC 1), ACST403/832/832X (ACC 2) and ACST315/871/871X (Part IIB) together count for exemption from The Institute of Actuaries of Australia's Part II subject.

You will be recommended for exemption from Part II if you attain grades of Credit or better in these three units. If you attain a Pass in one or more of these units, then the exemption will be recommended if and only if an SNG of at least 60 is achieved in all three units, and the average SNG is at least 65.

For students who have completed Control Cycle 2 or Part IIB at a different University, each case is considered individually. We may discuss your results with the other university, and under Privacy rules, we will require your prior written permission to do this.

If you have completed Control Cycle 2 or Part IIB previously at a university other than Macquarie, please contact Hong Xie within the first two weeks of the semester.

INSTITUTE OF ACTUARIES OF AUSTRALIA

The Institute of Actuaries of Australia (IAAust) allows students to become IAAust University Subscribers free of charge. Full time undergraduates studying at an Institute accredited university who are members of a university student actuarial society are eligible. To sign up, go to

<http://www.actuaries.asn.au/Membership/MembershipoftheInstitute/Subscriber.aspx>

The University Subscriber offer is not a membership of the IAAust but a subscription to receive information on career opportunities, invitations to selected IAAust events and online publications. You might also consider joining the IAAust – there are advantages in doing so while a full-time student. For membership information, go to

<http://www.actuaries.asn.au/Membership/MembershipoftheInstitute.aspx>

STUDENT SUPPORT SERVICES

Macquarie University provides a range of Academic Student Support Services. Details of these services can be accessed at:

<http://www.student.mq.edu.au>.

IT CONDITIONS OF USE

Access to all student computing facilities within the Faculty of Business and Economics is restricted to authorised coursework for approved units. Student ID cards must be displayed in the locations provided at all times.

Students are expected to act responsibly when utilising University IT facilities. The following regulations apply to the use of computing facilities and online services:

- Accessing inappropriate web sites or downloading inappropriate material is not permitted. Material that is not related to coursework for approved unit is deemed inappropriate.
- Downloading copyright material without permission from the copyright owner is illegal, and strictly prohibited. Students detected undertaking such activities will face disciplinary action, which may result in criminal proceedings.

Non-compliance with these conditions may result in disciplinary action without further notice.

Students must use their Macquarie University email addresses to communicate with staff as it is University policy that the University issued email account is used for official University communication.

QUESTIONS

If you have any question at all about ACC 1, please feel free to ask it on the ACC 1 web site, using Discussions under the Course Tools menu (which is our website bulletin board) if it's a question that's likely to be relevant to your classmates too, or private Mail under the Course Tools menu if it's something personal or not likely to be of interest to others. Don't be afraid to ask questions. The only dumb question is the one that doesn't get asked!

ACTUARIAL CONTROL CYCLE 1 2011 TIMETABLE

Week	Week Beginning	Topic/Activity	UAM Chapter	Teacher	Assessment Task Due
1	21 Feb	Overview: Control Cycle	1	LT	
2	28 Feb	Context of Actuarial Work	5, part of 14	PC	TCT1 ¹
3	7 March	Enterprise Risk Management	2	BE	TCT2
4	14 March	Regulation	7	BE	TCT3
5	21 March	Meeting Consumers' Needs	4	BE	TCT4
6	28 March	Product Design	8	PC	TCT5; Assignment 1
7	4 April	Modelling and Data	9, 10	BE	TCT6; Discussion Contribution Task Message 1 ²
STUDY	11 April	NO CLASSES			
BREAK	18 April	NO CLASSES			
8	25 April	Modelling and Data (cont) ²	9, 10	BE	Assignment 2
9	2 May	Class Presentations		LT/BE/PC	Presentation ³
10	9 May	Need for Capital	11	BE	TCT7
11	16 May	Pricing	13	BE	TCT8; Discussion Contribution Task Message 2 ²
12	23 May	Pricing	13	BE	Reflective Writing Task
13	30 May	Revision		LT	
6-24 June		MID-YEAR FINAL EXAM PERIOD			

Changes may occur, and will be advised in classes and on the ACC 1 web site.

Leonie Tickle
ACST402/831/831X Unit Convenor
14 February 2011

¹ TCT = Textbook Chapter Task. TCTs are due Monday at noon, and all other assessment tasks are due Sunday at 11.50 pm.

² Due to the Easter Monday and Anzac Day Tuesday holidays on 25-26 April, the Monday 25 April Macquarie class is cancelled, and the Tuesday 26 April city class is rescheduled to Wednesday 27 April 5.30 pm – 8.30 pm.

³ The Presentation is for Macquarie and city students only, and the Discussion Contribution Task is for distance students only.