



# ACST732

## Actuarial Control Cycle 2

S2 Day 2019

*Department of Actuarial Studies and Business Analytics*

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#### **Disclaimer**

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

## General Information

### Unit convenor and teaching staff

Unit Convenor

Maggie Lee

[maggie.lee@mq.edu.au](mailto:maggie.lee@mq.edu.au)

Contact via iLearn discussion forum or during consultation hours in teaching weeks

E4A227

Refer to iLearn

### Lecturer

Bruce Edwards

Contact via in class or via the Discussion Forum

### Administrator

Hong Xie

Contact via iLearn Dialogue (admin enquiries)

### Credit points

4

### Prerequisites

Admission to MRes and ACST731

### Corequisites

### Co-badged status

### Unit description

This unit, in conjunction with ACST731, develops and applies the actuarial principles and practices underlying the design, assessment, management and control of financial systems in the areas of life insurance, general insurance, and superannuation, as well as other less traditional areas of actuarial practice. The two units consider the process of actuarial and financial management including: product design, pricing, marketing, monitoring of experience, reserving, financing, solvency, surplus, and enterprise risk management. The commercial environment and professionalism are discussed. Students gaining a credit or higher in this unit will satisfy part of the requirements for exemption from Part IIA of the professional exams of the Institute of Actuaries of Australia.

A solid understanding of the development and application of actuarial principles and practices is a requirement for any advanced study in the actuarial studies area. This unit provides students with essential understanding of the actuarial principles and practices that develop the concepts and skills necessary for advanced research in actuarial studies.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

Discuss and apply an Actuarial Control Cycle in a variety of practical commercial situations

Apply the tests of professionalism

Analyse and assess a variety of professional practices to actuarial management decisions in contemporary financial institutions and recommend responses that considers an ethical and professional responsibility stance

Apply relevant approaches and techniques to the valuation of liabilities

Measure and report emerging profits and/or costs

Measure, report, and manage solvency

Monitor and assess experience; understand how the management of the business should be responsive to the experience

Develop research skills relevant to actuarial research topics

Provide written and oral presentations, which may be either individual or group work

## General Assessment Information

Details of assessment tasks will be provided on iLearn. Please check your announcements and discussion forum regularly (at least twice a week) for announcements about assessment tasks.

It is the responsibility of students to view their marks for each within session assessment on iLearn within 20 working days of posting. If there are any discrepancies, students must contact the unit convenor immediately. Failure to do so will mean that queries received after the release of final results regarding assessment marks (not including the final exam mark) will not be addressed.

Assessment criteria for all assessment tasks will be provided on the unit iLearn site.

The Macquarie University units Actuarial Control Cycle 1, Actuarial Control Cycle 2, and Investment Management are accredited by the Actuaries Institute.

The Actuaries Institute sends external examiners to review the performance of borderline students and to verify that appropriate exemption standards have been maintained.

It is the responsibility of the student to apply to Macquarie University to recommend them to the Actuaries Institute for professional exemptions. For information about this process please refer to [http://www.businessandconomics.mq.edu.au/current\\_students/undergraduate/how\\_do\\_i/exemptions\\_for\\_professional\\_examinations](http://www.businessandconomics.mq.edu.au/current_students/undergraduate/how_do_i/exemptions_for_professional_examinations)

## Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Assessed Coursework</u>	10%	No	Varies - see description
<u>Research Project</u>	12%	No	9am Thursday 12 September
<u>Presentation</u>	8%	No	1,2 or 3 October
<u>Final Examination</u>	70%	No	University Exam Timetable

### Assessed Coursework

Due: **Varies - see description**

Weighting: **10%**

Assessed Coursework includes Textbook Chapter Tasks (4%), Discussion Forum Contributions (3%), and Pop-up Quizzes (3%).

#### (a) Textbook Chapter Tasks (4%)

Description

Each textbook chapter task requires you to read a chapter of the textbook or a related reading and provide a one-page answer to a question based on the chapter's topic. They are due 9am (Sydney time) on Tuesday mornings (see the Unit Schedule). The first chapter task will be due on Tuesday 6 August 2019 (Week 2). Only three of the six textbook chapter tasks will be marked and graded (and we don't specify which ones in advance).

Further details will be provided on the teaching website.

Submission

Textbook chapter tasks are submitted via the teaching website, and marks and feedback will be returned via the teaching website.

Extensions/penalties

No extensions will be granted. Students who have not submitted the task prior to the deadline will be awarded a mark of 0 for the task, except for cases in which an application for Special Consideration is made and approved.

#### (b) Discussion Forum Postings (3%)

Students should contribute to the discussion forum by posting answers to discussion questions. Students must make at least 3 postings during the term. Students will earn 1 mark for each posting which satisfactorily engages with the topic (Postings which do not reflect much thought, such as "I agree with Tom" will not earn marks). They are due 11:59pm (Sydney time) on Sunday (see the Unit Schedule). The first discussion forum post will be due on Sunday 18 August 2019 (end of Week 3). Further information about this assessment task will be provided

via iLearn.

#### Submission

Discussion contributions are submitted via the teaching website, and marks and feedback will be returned via the teaching website.

#### Extensions / penalties

No extensions will be granted. Students who have not submitted the task prior to the deadline will be awarded a mark of 0 for the task, except for cases in which an application for Special Consideration is made and approved.

### **(c) Class quizzes (3%)**

#### Description

There will be four random quizzes held during class times. All four quizzes will be marked and a grade will be awarded based on the best three of these four quizzes. The timing of the quizzes will NOT be notified in advance.

#### Submission

Quizzes will be submitted during class time, and marks and feedback will be returned via the teaching website.

#### Extensions / penalties

No extensions will be granted. Students who do not submit the task (or are not in classes to complete the task) will be awarded a mark of 0 for that quiz. An application for Special Consideration can only be made and approved where the student has been unable to attend classes that lead to fewer than three of the four quizzes being submitted.

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- Apply relevant approaches and techniques to the valuation of liabilities
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- Measure, report, and manage solvency
- Monitor and assess experience; understand how the management of the business should be responsive to the experience
- Provide written and oral presentations, which may be either individual or group work

## Research Project

Due: **9am Thursday 12 September**

Weighting: **12%**

### Description

A written research report. It will be due 9am Thursday 12 September (Sydney time). Details will be provided in classes/teaching website.

### Submission

Submission is via the teaching website, and marks and feedback will be returned via the teaching website.

### Extension

No extensions will be granted.

### Penalties

There will be a deduction of 10% of the total available marks made from the total awarded mark for each 24 hour period or part thereof that the submission is late (for example, 25 hours late in submission: 20% penalty). This penalty does not apply for cases in which an application for Special Consideration is made and approved. No submission will be accepted after solutions have been posted.

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## Presentation

Due: **1,2 or 3 October**

Weighting: **8%**

## Description

The presentation is an oral presentation to the class. Students may do an individual presentation, or may work in groups (maximum 3 people per group). Each student will be assessed with individual marks contributing to 8% of total assessment.

Details will be provided on the teaching website.

## Submission

Presentations will be given in lecture classes. In order to facilitate scheduling, students will have to tell the unit administrator whether they wish to make an individual presentation, or work in a group via iLearn survey. The schedule of presentation times will be posted on iLearn after students have registered.

## Extension

No extensions will be granted.

## Penalties

Students who do not complete the presentation on the scheduled date will be awarded a mark of 0 for the task, except for cases in which an application for Special Consideration is made and approved.

On successful completion you will be able to:

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## Final Examination

Due: **University Exam Timetable**

Weighting: **70%**

## Description

The final examination is a three-hour (plus 10 minute reading time) written examination.

Examination conditions:

Normal University examination rules apply.

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-storage/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.

You are permitted ONE A4 page of paper containing reference material printed on both sides. The material may be handwritten or typed. The page will not be returned to you at the end of the final examination. No other 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

Date and location of Examination

The Examination will be conducted during the University examination period. The examination timetable will be published on the University website later in the session. The exam timetable will 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.

Extension

No extensions will be granted. The only exception to sitting the examination at the designated time is due to documented illness or unavoidable disruption. In these circumstances you may apply for Special Consideration - details are given in the Policies and Procedures section of this outline. If a supplementary examination is granted as a result of this process, the examination will be scheduled after the conclusion of the official examination period, and you must be available to sit the examination at the designated time.

On successful completion you will be able to:

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- Apply relevant approaches and techniques to the valuation of liabilities
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## Delivery and Resources

### Classes

The Actuarial Control Cycle 2 is a co-taught unit, available to ACST403, ACST732 and ACST832 students. Lectures are offered in three modes – campus classes (North Ryde), city classes (Sydney CBD) and distance education (students can be located anywhere).

Please refer to the University timetable at <https://timetables.mq.edu.au/> to find the times and locations of lectures for the campus classes.

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.

### Downloadable lecture recordings

The University audio-visual team usually makes recordings of on-campus lectures. These will be available via iLearn (use the Echo360 tab on the right hand side of the home page). Since the classes in this unit are not traditional lectures but contain periods of group discussion, the recordings will contain some stretches of background noise which you will need to fast forward through.

### Teaching staff

Maggie Lee is the unit convenor and will be taking four weeks of classes including supervising presentations. Maggie can be contacted via Dialogue on the website, or during her consultation hours.

Bruce Edwards will be conducting other classes and supervision of presentations. Bruce is an industry practitioner with a wide range of knowledge across many areas in which actuaries practise. Outside of classes, the forum for interaction with Bruce will be the website Discussion forums.

Hong Xie is the teaching administrator, and can deal with any administrative queries related to the unit. Hong can be contacted via Dialogue on the website.

### Required and Recommended Texts and/or Materials

#### Textbook

Required texts : 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 Actuaries Institute, at:

<http://www.actuaries.asn.au/knowledge-bank/book-shop?id=8>

Copies of the textbook are available in the Special Reserve section of the library.

### Learning Guide

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

Additional readings will be posted on iLearn.

### **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**

Course material is available on the online learning management system (iLearn).

The teaching website is integral to this course unit. Passive involvement in this unit greatly reduces the likelihood of achieving the exemption standard of understanding. Interaction with other students and with teachers is very important, and the website is the forum for that interaction.

You will need to be accessing the website regularly to see announcements, read postings and stay informed - at least every couple of days. This is your responsibility and we cannot make any allowances for students who miss important information due to not checking the website regularly.

The website entry page is at: <http://ilearn.mq.edu.au>

### **Assumed knowledge**

We assume that you have acquired the knowledge and skills included in the syllabi for the Part I (Core technical) subjects and Actuarial Control Cycle I.

### **Teaching and Learning Activities**

The unit is taught as set out in the Classes section. The Unit Schedule sets out the assessment and the topics covered in each week of the session

### **Teaching and Learning Strategy**

You should prepare for each lecture by reading the relevant chapter of the textbook, the Learning Guide, and any other readings posted on iLearn. We encourage all students to actively participate in class discussions and group work.

### **Exemptions**

The Macquarie University units ACST402/731/831/831 External (Control Cycle 1), ACST403/732/832/832 External (Control Cycle 2) and ACST404/771/871/871 External together count for exemption from the Actuaries Institute 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 a Standardised Numerical Grade (SNG) of at least 60 is achieved in all three units, and the average SNG is at least 65. For students who have completed part of Part II at a different university, each case is considered individually based on the exemption requirements at those universities.

It is the responsibility of the student to apply to Macquarie University to recommend them to the Actuaries Institute for professional exemptions. For information about this process and links to relevant forms, see:

[http://www.businessandconomics.mq.edu.au/current\\_students/undergraduate/how\\_do\\_i/exemptions\\_for\\_professional\\_examinations](http://www.businessandconomics.mq.edu.au/current_students/undergraduate/how_do_i/exemptions_for_professional_examinations)

## Unit Schedule

Week	Week beginning	Topic	Lecturer	UAM Chapter	Assessment task	Notes
1	29-Jul	Valuation of Liabilities	BE	12		
2	05-Aug	Measuring Profits	BE	16	TCT1	
3	12-Aug	Professionalism	ML	3	TCT2, Discussion contribution 1	
4	19-Aug	Data analytics/Big Data	ML			
5	26-Aug	Solvency	ML	15	TCT3	
6	02-Sep	Managing an Insolvent Insurer  Regal / Occidental Case study	BE	15	TCT4	
7	09-Sep	Stress Testing	BE		Discussion contribution 2, Research report	
Break	16-Sep					
Break	23-Sep					
8	30-Sep	Class Presentations	BE, ML, SG		Presentation	
9	07-Oct	Public Holiday October 7  Monitoring Experience 1	BE	17	TCT5	
10	14-Oct	Monitoring Experience 2	ML	17		

11	21-Oct	Responding to Experience 1	BE	18	TCT6, Discussion contribution 3
12	28-Oct	Responding to Experience 2	BE	18	
13	04-Nov	Revision	BE		

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Undergraduate students seeking more policy resources can visit the [Student Policy Gateway \(https://students.mq.edu.au/support/study/student-policy-gateway\)](https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

## Results

Results published on platform other than [eStudent](#), (eg. iLearn, Coursera etc.) or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](https://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## Supplementary exams

Information regarding supplementary exams, including dates, is available at:  
[http://www.businessandconomics.mq.edu.au/current\\_students/undergraduate/how\\_do\\_i/disruption\\_to\\_studies](http://www.businessandconomics.mq.edu.au/current_students/undergraduate/how_do_i/disruption_to_studies)

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)
- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

If you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@mq.edu.au)

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

## Learning outcomes

- Discuss and apply an Actuarial Control Cycle in a variety of practical commercial situations
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- Apply relevant approaches and techniques to the valuation of liabilities
- Measure and report emerging profits and/or costs
- Measure, report, and manage solvency
- Monitor and assess experience; understand how the management of the business should be responsive to the experience
- Develop research skills relevant to actuarial research topics
- Provide written and oral presentations, which may be either individual or group work

## Assessment tasks

- Assessed Coursework
- Research Project
- Presentation
- Final Examination

## PG - Critical, Analytical and Integrative Thinking

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

## Learning outcomes

- Discuss and apply an Actuarial Control Cycle in a variety of practical commercial situations
- Apply the tests of professionalism
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## **Assessment tasks**

- Assessed Coursework
- Research Project
- Presentation
- Final Examination

## **PG - Research and Problem Solving Capability**

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

## **Learning outcomes**

- Discuss and apply an Actuarial Control Cycle in a variety of practical commercial situations
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- Provide written and oral presentations, which may be either individual or group work

## **Assessment tasks**

- Assessed Coursework
- Research Project

- Presentation
- Final Examination

## PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

### Learning outcomes

- Discuss and apply an Actuarial Control Cycle in a variety of practical commercial situations
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### Assessment tasks

- Assessed Coursework
- Research Project
- Presentation
- Final Examination

## Changes from Previous Offering

The learning objectives, class format and text are all the same as in the last offering. The Learning Guides, readings, lecture slides and lecture recordings are updated each year. The individual assessments are new each year. There may be a change in the order in which topics are covered since the last offering.



## Research

### Research and Practice

This unit uses research in several ways:

- The unit uses research by Macquarie University researchers (e.g. current and former Macquarie staff members are editors and authors of the textbook 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.