



# ACST4003

## Actuarial Control Cycle 2

Session 2, In person-scheduled-weekday, North Ryde 2022

*Department of Actuarial Studies and Business Analytics*

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## General Information

Unit convenor and teaching staff

Unit Convenor

Maggie Lee

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

Lecturer

Bruce Edwards

[bruce.edwards@mq.edu.au](mailto:bruce.edwards@mq.edu.au)

Credit points

10

Prerequisites

ACST402 or ACST4002

Corequisites

Co-badged status

Unit description

This unit, in conjunction with ACST4002 Actuarial Control Cycle 1, 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 and other less traditional areas of actuarial practice. 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. Students gaining a Credit average across ACST4002 (or ACST402) and ACST4003 (or ACST403) (minimum mark of 60 on both units) will satisfy the requirements for exemption from the Actuarial Control Cycle subject of the Actuary program of the Actuaries Institute.

## 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:

**ULO1:** Show an understanding of how models are used to solve client problems

**ULO2:** Recognise the importance of capital.

**ULO3:** Apply relevant approaches and techniques to the valuation of liabilities.

**ULO4:** Apply appropriate techniques to the pricing of products and contracts.

**ULO5:** Demonstrate an understanding on the principles of measuring, reporting and managing solvency; measuring and reporting emerging profits and/or costs; monitoring and assessing experience; and responding to emerging experience.

## General Assessment Information

### Late Assessment Submission Penalty (written assessments)

Unless a Special Consideration request has been submitted and approved, a 5% penalty (of the total possible mark) will be applied each day a written assessment is not submitted, up until the 7th day (including weekends). After the 7th day, a grade of '0' will be awarded even if the assessment is submitted. Submission time for all written assessments is set at 11.55pm. A 1-hour grace period is provided to students who experience a technical concern.

For any late submissions of time-sensitive tasks, such as scheduled tests/exams, performance assessments/presentations, and/or scheduled practical assessments/labs, students need to submit an application for [Special Consideration](#).

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Assessed Coursework</a>	10%	No	Various - See iLearn for details
<a href="#">Presentation</a>	8%	No	Week 7 - See iLearn for details
<a href="#">Case Study</a>	12%	No	Week 8 - See iLearn for details
<a href="#">Final Exam</a>	70%	No	University Examination Period

### Assessed Coursework

Assessment Type [1](#): Problem set

Indicative Time on Task [2](#): 10 hours

Due: **Various - See iLearn for details**

Weighting: **10%**

A range of tasks due throughout the session based on textbook chapters, iLearn discussion and class quizzes.

On successful completion you will be able to:

- Show an understanding of how models are used to solve client problems
- Recognise the importance of capital.
- Apply relevant approaches and techniques to the valuation of liabilities.
- Apply appropriate techniques to the pricing of products and contracts.
- Demonstrate an understanding on the principles of measuring, reporting and managing solvency; measuring and reporting emerging profits and/or costs; monitoring and assessing experience; and responding to emerging experience.

## Presentation

Assessment Type <sup>1</sup>: Presentation

Indicative Time on Task <sup>2</sup>: 2 hours

Due: **Week 7 - See iLearn for details**

Weighting: **8%**

The presentation is an oral presentation to the class based on a given task. Each student will have 5 minutes for the presentation.

On successful completion you will be able to:

- Show an understanding of how models are used to solve client problems
- Recognise the importance of capital.
- Apply relevant approaches and techniques to the valuation of liabilities.
- Apply appropriate techniques to the pricing of products and contracts.
- Demonstrate an understanding on the principles of measuring, reporting and managing solvency; measuring and reporting emerging profits and/or costs; monitoring and assessing experience; and responding to emerging experience.

## Case Study

Assessment Type <sup>1</sup>: Case study/analysis

Indicative Time on Task <sup>2</sup>: 12 hours

Due: **Week 8 - See iLearn for details**

Weighting: **12%**

An individual, written, case study report (word limit of up to 5000 words).

On successful completion you will be able to:

- Show an understanding of how models are used to solve client problems
- Recognise the importance of capital.
- Apply relevant approaches and techniques to the valuation of liabilities.
- Apply appropriate techniques to the pricing of products and contracts.
- Demonstrate an understanding on the principles of measuring, reporting and managing solvency; measuring and reporting emerging profits and/or costs; monitoring and assessing experience; and responding to emerging experience.

## Final Exam

Assessment Type <sup>1</sup>: Examination

Indicative Time on Task <sup>2</sup>: 28 hours

Due: **University Examination Period**

Weighting: **70%**

The final examination will be closed book, a three-hour written paper with ten minutes reading time, to be held during the University Examination period.

On successful completion you will be able to:

- Show an understanding of how models are used to solve client problems
- Recognise the importance of capital.
- Apply relevant approaches and techniques to the valuation of liabilities.
- Apply appropriate techniques to the pricing of products and contracts.
- Demonstrate an understanding on the principles of measuring, reporting and managing solvency; measuring and reporting emerging profits and/or costs; monitoring and assessing experience; and responding to emerging experience.

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<sup>1</sup> If you need help with your assignment, please contact:

- the academic teaching staff in your unit for guidance in understanding or completing this type of assessment
- the [Writing Centre](#) for academic skills support.

<sup>2</sup> Indicative time-on-task is an estimate of the time required for completion of the assessment task and is subject to individual variation

## Delivery and Resources

### Classes

ACST4003 is offered via classes on campus (Macquarie University). Students share lecture classes and a common teaching website with the units ACST7032 and ACST8032, which are also offered via classes in the Sydney CBD and via distance education throughout the world.

### Style of 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 "micropresentations", 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

In all weeks, standard recordings of campus lectures using the University's lecture recording facility (ECHO360 or zoom) will be available. The recordings capture audio and screenshot. 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. The recordings will either be provided via the ECHO360 link which is located on the right hand side of the webpage or via a zoom link.

### Timetable

The timetable for classes can be found on the Macquarie University website at: [Timetable 2022](#)

Alterations to the class times or locations will be advised in class and on the teaching website.

### Teaching staff

Maggie Lee is the unit convenor and will be taking four weeks of classes. 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 practice. 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.

### Assumed knowledge

We assume from the start of the Actuarial Control Cycle that you have acquired the knowledge and skills in subjects from the Foundation Program (Part 1s) of the Actuaries Institute education

program.

## **Required and recommended texts and materials**

### **Textbook**

There is one textbook for this unit, referred to here and elsewhere as UAM: Bellis, C., Lyon, R., Klugman, S and 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>

You should buy the book immediately, if you haven't already, as assessment tasks based on the book are due at the beginning of the second week of classes. Other useful articles will be set out at the beginning of each Learning Guide, and made available on the teaching website.

### **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, .pdf documents, and word-processing software to produce reports.

### **Teaching Website**

Course material is available on the online learning management system (iLearn). The teaching website is integral to this 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>

### **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.

### **Exemptions**

The Macquarie University units ACST4002/7031/8031 (Control Cycle 1) and ACST4003/7032/8032 (Control Cycle 2) together will satisfy the requirements for exemption from the Actuarial Control Cycle subject of the Actuary program of the Actuaries Institute. You will be recommended for exemption if you attain grades of Credit or better in these two units. If you attain a Pass in one 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 both units, and the average SNG is at least 65. For students who have completed part of Actuarial Control Cycle 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 please contact Hong Xie via iLearn.

## Unit Schedule

Week	Week beginning	Topic	Lecturer	UAM Chapter	Assessment task
1	25-Jul	Valuation of Liabilities	BE	12	
2	01-Aug	Measuring Profits	BE	16	TCT1
3	08-Aug	Regulation and Ethics	ML	7,3 (Parts)	TCT2
4	15-Aug	Big Data/Data Analytics	ML		
5	22-Aug	Solvency	ML	15	TCT3
6	29-Aug	Managing an Insolvent Insurer Regal / Occidental Case study	BE		TCT4
7	05-Sep	Presentation week	ML and BE		Presentation
Break	12-Sep				
Break	19-Sep				
8	26-Sep	Stress Testing	BE		Case Study
9	03-Oct	Monitoring Experience 1	BE	17	TCT5
10	10-Oct	Monitoring Experience 2	ML	17	
11	17-Oct	Responding to Experience 1	BE	18	TCT6
12	24-Oct	Responding to Experience 2	BE	18	
13	31-Oct	Revision	BE		

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://policies.mq.edu.au\)](https://policies.mq.edu.au). 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](#)
- [Assessment Procedure](#)
- [Complaints Resolution Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#)

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

To find other policies relating to Teaching and Learning, visit [Policy Central](https://policies.mq.edu.au) (<https://policies.mq.edu.au>) and use the [search tool](#).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/admin/other-resources/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)

## Academic Integrity

At Macquarie, we believe [academic integrity](#) – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free [online writing and maths support](#), [academic skills development](#) and [wellbeing consultations](#).

## Student Support

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

## The Writing Centre

[The Writing Centre](#) provides resources to develop your English language proficiency, academic writing, and communication skills.

- [Workshops](#)
- [Chat with a WriteWISE peer writing leader](#)
- [Access StudyWISE](#)
- [Upload an assignment to Studiosity](#)

- [Complete the Academic Integrity Module](#)

The Library provides online and face to face support to help you find and use relevant information resources.

- [Subject and Research Guides](#)
- [Ask a Librarian](#)

## Student Services and Support

Macquarie University offers a range of [Student Support Services](#) including:

- [IT Support](#)
- [Accessibility and disability support](#) with study
- Mental health [support](#)
- [Safety support](#) to respond to bullying, harassment, sexual harassment and sexual assault
- [Social support including information about finances, tenancy and legal issues](#)

## Student Enquiries

Got a question? Ask us via [AskMQ](#), or contact [Service Connect](#).

## 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.