



ACST859

Contingent Payments 1

S1 Day 2018

Archive (Pre-2019) - Dept of Applied Finance and Actuarial Studies

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Disclaimer

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General Information

Unit convenor and teaching staff

Lecturer

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Contact via Email

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Refer to iLearn

Credit points

4

Prerequisites

Corequisites

ACST851 and (STAT806 or STAT810 or (ACST601 and ACST604))

Co-badged status

Unit description

This unit covers the analysis of cash flows dependent on uncertain events of mortality. Single decrement survival models will be used to evaluate the expected present values of payments under life insurance and annuity contracts, and calculate the premiums of such contracts. The concepts of pricing and reserving for future contingent liabilities are considered, and the methods of calculating required reserves will be discussed.

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:

Understand simple survival models and related properties, including allowance for select and ultimate mortality rates.

Be able to calculate expected present values and variances of benefits for various life insurance contracts.

Be able to efficiently calculate sustainable premiums rates for various life insurance contracts, including allowance for operating expenses and variable benefits.

Be able to efficiently calculate policy values for various life insurance contracts, including

allowance for operating expenses and variable benefits, and understand their use in assessing whether the insurance portfolio is sustainable.

Be able to analyse the profit arising from life insurance contracts.

General Assessment Information

Extensions and penalties on coursework assessment tasks

- Tasks 10% or less – 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.
- Tasks above 10% - No extensions will be granted. 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.

Open-book final examination

- The final examination will be open-book in the sense that students can bring in any materials written or printed on paper with any size and number of pages.

Gradebook

- 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.

Supplementary exams

- Information regarding supplementary exams, including dates, is available at:
http://www.businessandconomics.mq.edu.au/current_students/undergraduate/how_do_i/special_consideration

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Quiz</u>	10%	No	20 Mar 2018
<u>Midterm test</u>	30%	No	7 May 2018
<u>Final exam</u>	60%	No	Examination Period

Quiz

Due: **20 Mar 2018**

Weighting: **10%**

Non-invigilated quiz with multiple-choice questions

On successful completion you will be able to:

- Understand simple survival models and related properties, including allowance for select and ultimate mortality rates.

Midterm test

Due: **7 May 2018**

Weighting: **30%**

Take-home test with a combination of multiple-choice and problem-solving questions.

On successful completion you will be able to:

- Be able to calculate expected present values and variances of benefits for various life insurance contracts.
- Be able to efficiently calculate sustainable premiums rates for various life insurance contracts, including allowance for operating expenses and variable benefits.

Final exam

Due: **Examination Period**

Weighting: **60%**

Open-book final examination with problem-solving questions (duration: 3 hours plus 10 minutes reading)

On successful completion you will be able to:

- Be able to calculate expected present values and variances of benefits for various life insurance contracts.
- Be able to efficiently calculate sustainable premiums rates for various life insurance contracts, including allowance for operating expenses and variable benefits.
- Be able to efficiently calculate policy values for various life insurance contracts, including allowance for operating expenses and variable benefits, and understand their use in assessing whether the insurance portfolio is sustainable.
- Be able to analyse the profit arising from life insurance contracts.

Delivery and Resources

Classes

- This unit is taught through 3 hours of lectures and 2 hours of tutorials per week.
- The timetable for classes can be found on the University web site at:
<http://www.timetables.mq.edu.au/>
- Tutorials start in Week 1.

Unit Web Page

- The web page for this unit can be found at: <http://ilearn.mq.edu.au>

Technology Used and required

- You will need access to the internet to obtain course information and download teaching materials from the unit website.
- It is your responsibility to check the unit website regularly to make sure that you are up-to-date with the information for the unit.

Required and Recommended Texts and/or Materials

- Lecture Notes are the required materials and will be posted on the website before the lectures.
- The main additional reading materials are the ActEd CT5 notes. This will also be used as background reading for ACST355/860.

Unit Schedule

Week 1: Review of probability; Expected present value; Introduction to survival models

Week 2: Life assurance contracts

Week 3: Life annuity contracts

Week 4: The Life table; Select mortality

Week 5: Evaluation of life insurance contracts

Week 6: Net premiums and reserves

Week 7: Prospective and retrospective policy values; Policies with variable benefits

Week 8: Midterm test

Week 9: Policies with variable benefits; With-profit policies

Week 10: With-profit policies; Gross premium

Week 11: Gross premiums and reserves

Week 12: Profit and loss in life insurance

Week 13: Revision

Note: This is only a tentative schedule. Small departures are expected on the basis of week to week progress.

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 shown in *iLearn*, 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.

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) 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

IT Help

For help with University computer systems and technology, visit 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

- Understand simple survival models and related properties, including allowance for select and ultimate mortality rates.
- Be able to calculate expected present values and variances of benefits for various life insurance contracts.
- Be able to efficiently calculate sustainable premiums rates for various life insurance contracts, including allowance for operating expenses and variable benefits.
- Be able to efficiently calculate policy values for various life insurance contracts, including allowance for operating expenses and variable benefits, and understand their use in assessing whether the insurance portfolio is sustainable.
- Be able to analyse the profit arising from life insurance contracts.

Assessment tasks

- Quiz
- Midterm test
- Final exam

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

- Be able to efficiently calculate policy values for various life insurance contracts, including allowance for operating expenses and variable benefits, and understand their use in assessing whether the insurance portfolio is sustainable.
- Be able to analyse the profit arising from life insurance contracts.

Assessment tasks

- Midterm test
- Final exam

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

- Be able to calculate expected present values and variances of benefits for various life insurance contracts.
- Be able to efficiently calculate sustainable premiums rates for various life insurance contracts, including allowance for operating expenses and variable benefits.
- Be able to efficiently calculate policy values for various life insurance contracts, including allowance for operating expenses and variable benefits, and understand their use in assessing whether the insurance portfolio is sustainable.

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- Midterm test
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