



# ACST8028

## Options, Futures and Derivatives

Session 2, Special circumstance 2020

*Department of Actuarial Studies and Business Analytics*

### Contents

---

<a href="#">General Information</a>	2
<a href="#">Learning Outcomes</a>	2
<a href="#">General Assessment Information</a>	3
<a href="#">Assessment Tasks</a>	3
<a href="#">Delivery and Resources</a>	5
<a href="#">Policies and Procedures</a>	6

#### 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.

#### Notice

As part of [Phase 3 of our return to campus plan](#), most units will now run tutorials, seminars and other small group learning activities on campus for the second half-year, while keeping an online version available for those students unable to return or those who choose to continue their studies online.

To check the availability of face-to-face and online activities for your unit, please go to [timetable viewer](#). To check detailed information on unit assessments visit your unit's iLearn space or consult your unit convenor.

## General Information

Unit convenor and teaching staff

Timothy Kyng

[timothy.kyng@mq.edu.au](mailto:timothy.kyng@mq.edu.au)

Angela Chow

[angela.chow@mq.edu.au](mailto:angela.chow@mq.edu.au)

Credit points

10

Prerequisites

(ACST603 or ACST6003 or AFIN6012 or AFIN613 or AFIN6013) or (admission to MActPrac)

Corequisites

Co-badged status

Unit description

This unit aims to provide students with a knowledge and understanding of the principles and techniques underlying the theory and practice of derivative Markets. You will learn about different valuation/modelling techniques and will need to understand the usefulness and shortcomings of these techniques when applied in practice. It primarily aims to give you the tools for quantitative analysis of transactions and securities including valuation and risk management for capital projects and securities. This includes computer-based numerical implementation using spreadsheet software. This unit enables students to gain an understanding of the theoretical and practical skills necessary to understand financial derivatives.

## 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:** Demonstrate knowledge and understanding of the main features and uses of the standard derivative securities, the concepts of replication and the law of one price and how it relates to pricing for derivative securities.

**ULO2:** Understand the risk neutral discounted expectation approach to derivative pricing

and apply it to deriving analytic formulae for some of the standard derivative securities and simpler exotic securities.

**ULO3:** Develop expertise in using excel spreadsheet software to apply numerical methods for the valuation of derivative contracts and financial decision making.

**ULO4:** Apply the knowledge of derivative contracts and the theory of derivative valuation to various hypothetical financial scenarios including hedging, speculation, valuation of securities, valuation of incentives and financial decision making.

**ULO5:** Explain the concepts covered in the course in a clear and concise manner and be able to communicate it to others effectively.

## General Assessment Information

GradeBook: Assignment and class quiz test marks are available on 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." Feedback Prior to the Census Date Self-assessment exercise question(s) will be released in Week 3 for feedback prior to the census date. Its answer will be also provided before the census date in Week 4. Assessment criteria for all assessment tasks will be provided on the unit iLearn site.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Online quiz</a>	20%	No	Fridays 7pm-830pm weeks 3, 5, 7, 9 & 11
<a href="#">Assignment</a>	20%	No	Sunday 18/10/2020 1155pm
<a href="#">Final Exam</a>	60%	No	University Exam Period

### Online quiz

Assessment Type <sup>1</sup>: Quiz/Test

Indicative Time on Task <sup>2</sup>: 10 hours

Due: **Fridays 7pm-830pm weeks 3, 5, 7, 9 & 11**

Weighting: **20%**

5 online quizzes, each worth 4 marks each will be conducted.

On successful completion you will be able to:

- Demonstrate knowledge and understanding of the main features and uses of the standard derivative securities, the concepts of replication and the law of one price and how it relates to pricing for derivative securities.
- Understand the risk neutral discounted expectation approach to derivative pricing and apply it to deriving analytic formulae for some of the standard derivative securities and simpler exotic securities.
- Apply the knowledge of derivative contracts and the theory of derivative valuation to various hypothetical financial scenarios including hedging, speculation, valuation of securities, valuation of incentives and financial decision making.

## Assignment

Assessment Type <sup>1</sup>: Quantitative analysis task

Indicative Time on Task <sup>2</sup>: 20 hours

Due: **Sunday 18/10/2020 1155pm**

Weighting: **20%**

The assignment is individual work: Essay type responses and Excel spreadsheet solutions are required.

On successful completion you will be able to:

- Demonstrate knowledge and understanding of the main features and uses of the standard derivative securities, the concepts of replication and the law of one price and how it relates to pricing for derivative securities.
- Understand the risk neutral discounted expectation approach to derivative pricing and apply it to deriving analytic formulae for some of the standard derivative securities and simpler exotic securities.
- Develop expertise in using excel spreadsheet software to apply numerical methods for the valuation of derivative contracts and financial decision making.
- Apply the knowledge of derivative contracts and the theory of derivative valuation to various hypothetical financial scenarios including hedging, speculation, valuation of securities, valuation of incentives and financial decision making.
- Explain the concepts covered in the course in a clear and concise manner and be able to communicate it to others effectively.

## Final Exam

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

Indicative Time on Task <sup>2</sup>: 24 hours

Due: **University Exam Period**

Weighting: **60%**

The final examination will be open book and on-line, a two-hour and thirty minute written paper with ten minutes reading time.

On successful completion you will be able to:

- Demonstrate knowledge and understanding of the main features and uses of the standard derivative securities, the concepts of replication and the law of one price and how it relates to pricing for derivative securities.
- Understand the risk neutral discounted expectation approach to derivative pricing and apply it to deriving analytic formulae for some of the standard derivative securities and simpler exotic securities.
- Apply the knowledge of derivative contracts and the theory of derivative valuation to various hypothetical financial scenarios including hedging, speculation, valuation of securities, valuation of incentives and financial decision making.
- Explain the concepts covered in the course in a clear and concise manner and be able to communicate it to others effectively.

---

<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: A 2-hour pre-recorded lecture will be held each week. A 1-hour interactive / synchronous tutorial / computer laboratory session will be held each week. A 1-hour interactive / synchronous consultation session will be arranged each week with the timing to be advised following consultation with students. All lecture and tutorial exercises and solutions will be available on iLearn.

Required and Recommended Texts and/or Materials **Textbooks:** There are no prescribed textbooks. Lecture notes will be provided. However we strongly recommend students acquire a copy of the book Options Futures and Other Derivatives (9th Edition) by John Hull & Solutions Manual to Options Futures and Other Derivatives (9th Edition) by John Hull. The book is available as follows:

**Print Option** 15% Discount (If students purchase directly from Pearson they will not be charged any postage) - <<https://www.pearson.com.au/9781292212890>>

**eBook** - Buy it (ongoing access) \$54 - <<https://www.pearson.com.au/9781787644274>>

### **Reference Books:**

Beninga Principles of Finance with Excel, Oxford (ISBN 978 0 19 975547 9) This book may be used to by students to learn about using excel for the various financial calculations involved in the course, during the tutorial / computer lab sessions.

**Technology Used and Required** • Students will require access to the internet to download lecture slides and tutorials • The assignment, quizzes and most tutorial exercises will require the use of word processing and / or spreadsheet programs. • In most weeks we will be using excel spreadsheets for the various financial calculations needed. Our classes are held in a computer laboratory and all students will have access to a computer with the required software installed on it. • Students will be instructed in how to use excel for the purposes of the unit

**Teaching and Learning Activities** • The unit is taught via lectures, tutorial exercises and the use of spreadsheet software for implementing models and calculations for the purpose of financial decision making • Each lecture is self-contained and structured according to the summary provided in the “weekly curriculum” to be advised on iLearn. Students are expected to read the relevant material prior to the lecture, so that they are familiar with the material to be covered. This will greatly enhance your learning experience. • Dealing with advanced material in our subject area requires a range of generic skills. This unit aims at developing such skills. The lectures and in particular the assignments and tutorial exercises are tailored to enhance critical analysis, problem-solving and creative thinking, comprehension, computing and writing skills. • You should take the time to work on the problem sets, since they will tend to be similar in nature to the problems you see on the test and exam. Solutions will be provided for the assigned selected questions. • We cover many examples of financial valuation and decision making problems and how to solve these using spreadsheets. Our approach is one of learning by example and by practicing using excel to solve financial decision making problems.

## **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.*)

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](http://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central) (<http://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](http://ask.mq.edu.au) or if you are a Global MBA student contact [globalmba.support@mq.edu.au](mailto:globalmba.support@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](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to help you improve your marks and take control of your study.

- [Getting help with your assignment](#)
- [Workshops](#)
- [StudyWise](#)
- [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

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.