



AFIN3029

Derivative Instruments

Session 2, Special circumstance 2020

Department of Applied Finance

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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.

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

Unit Convenor

Ryle Perera

ryle.perera@mq.edu.au

Administration

Kenneth Wong

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Credit points

10

Prerequisites

20cp at 2000 level including (AFIN252 or AFIN270 or AFIN2070 or STAT272 or STAT2372)

Corequisites

Co-badged status

Unit description

This unit explores the characteristics and pricing of derivatives. The importance of the principles of hedging and arbitrage in derivative pricing, is considered. Derivatives investigated include forwards, futures, options and various structured products. In particular, the unit covers non-standard securities and numerical methods.

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: Examine the concepts of option pricing theory and the role of derivatives.

ULO2: Apply financial derivatives such as forward/futures and options to solve quantitative problems.

ULO3: Develop skills to price options and other derivatives.

ULO4: Examine the principles of hedging, arbitrage theory and structured products.

General Assessment Information

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

It is the responsibility of students to view their marks for each within-session-assessment on iLearn within 20 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 tasks (not including the final exam mark) will not be addressed.

Late submissions and extensions

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.

Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Online Quiz</u>	5%	No	Week 3
<u>Assignment</u>	35%	No	Week 9
<u>Final Examination</u>	60%	No	University Examination Period

Online Quiz

Assessment Type ¹: Quiz/Test

Indicative Time on Task ²: 1 hours

Due: **Week 3**

Weighting: **5%**

The online quiz will consist of 10-15 questions and will be available on iLearn. Please use the quiz result as an indicator of whether you are progressing satisfactorily in the unit.

On successful completion you will be able to:

- Examine the concepts of option pricing theory and the role of derivatives.

Assignment

Assessment Type ¹: Quantitative analysis task

Indicative Time on Task ²: 20 hours

Due: **Week 9**

Weighting: **35%**

The assignment will consist of 4-5 questions with short answer and quantitative questions.

On successful completion you will be able to:

- Examine the concepts of option pricing theory and the role of derivatives.
- Develop skills to price options and other derivatives.
- Examine the principles of hedging, arbitrage theory and structured products.

Final Examination

Assessment Type ¹: Examination

Indicative Time on Task ²: 30 hours

Due: **University Examination Period**

Weighting: **60%**

An online two hour open book final exam will be held during the University Examination Period.

On successful completion you will be able to:

- Examine the concepts of option pricing theory and the role of derivatives.
- Apply financial derivatives such as forward/futures and options to solve quantitative problems.
- Develop skills to price options and other derivatives.
- Examine the principles of hedging, arbitrage theory and structured products.

¹ 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.

² 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

Learning and Teaching Activities	<p>The content for each week will comprise of a lecture recording and a set of tutorial questions (Problem Sets).</p> <p><u>Lectures</u></p> <p>A lecture recording will be uploaded each week. Lecture notes will be available on iLearn.</p> <p><u>Tutorials</u></p> <p>Students will need to register to either an on-campus tutorial or an online (Zoom) tutorial. Tutorials are considered compulsory but no marks are allocated. Tutorials will be available for most, but not all weeks of the semester. In weeks where there aren't any live (on-campus or online) tutorials, a recording will be provided to cover the relevant material.</p> <p>The tutorial schedule will be made available on iLearn.</p> <p>Tutorial enrolment or change of tutorial can be made through <i>eStudent</i> in the first two weeks of the semester. <u>No tutorial changes are allowed after Week 2</u>. Students should attend their allocated tutorial, but exceptions may occur on a one-off basis. That is, where circumstances prevent you from attending your own tutorial in a given week, you may attend an alternative tutorial if room available.</p> <p>Students are expected to complete the 'Tutorial Questions' as a self-directed study activity before attending a tutorial. Additional learning support will be available in tutor consultation times.</p>
Required Text:	<p>The required textbook is 'Fundamentals of Futures and Options Markets', John C. Hull, Sirimon Treepongkaruna, Richard Heaney, David Pitt and David Colwell, Pearson, 2014</p> <p>This is available for purchase online from www.booktopia.com.au/coop and a copy will be available in the closed reserve section of the Macquarie Library.</p>
Unit Web Page:	<p>The web page for this unit can be found at https://ilearn.mq.edu.au/</p> <p>It is the responsibility of students to visit the unit regularly. Course material is available on the learning management system (iLearn).</p> <p>Lecture notes, tutorial solutions, unit announcements, and other reference materials will be posed to this site throughout the session.</p>

Unit Schedule

Lecture Week	Lecture Topic
1	Introduction to Derivatives and Mechanics of Futures Market
2	Hedging Strategies using Futures
3	Interest rates
4	Determination of Forward and Futures Prices

5	Swaps and Ethics
6	Mechanics of Option Markets and Properties of Stock Options
7	Trading Strategies Involving Options
	BREAK
8	Introduction to Binomial Trees
9	ASSIGNMENT
10	Valuing Stock Options: The Black Scholes Model
11	Options on Stock Indices and Currencies and Futures Options
12	Greek Letters
13	Revision

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 or if you are a Global MBA student contact 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) 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

If you are a Global MBA student contact 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/.

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.

Changes since First Published

Date	Description
27/07/2020	No change
22/07/2020	Changed assignment to Week 9 and added in information on Learning and Teaching Activities.