



# ECFS867

## Financial Instruments

AFC Term 3 City 2019

*Department of Applied Finance*

### Contents

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<a href="#"><u>General Information</u></a>	2
<a href="#"><u>Learning Outcomes</u></a>	2
<a href="#"><u>General Assessment Information</u></a>	3
<a href="#"><u>Assessment Tasks</u></a>	3
<a href="#"><u>Delivery and Resources</u></a>	6
<a href="#"><u>Unit Schedule</u></a>	8
<a href="#"><u>Learning and Teaching Activities</u></a>	11
<a href="#"><u>Policies and Procedures</u></a>	11
<a href="#"><u>Graduate Capabilities</u></a>	13
<a href="#"><u>Changes from Previous Offering</u></a>	15
<a href="#"><u>Important Notice</u></a>	15

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## General Information

Unit convenor and teaching staff

Unit Lecturer

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Contact via Email

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Credit points

4

Prerequisites

(Admission to MAppFin or MAppFin(Adv) or GradDipAppFin) and (AFCP801 or ECFS865)

Corequisites

Co-badged status

Unit description

This unit covers the structure, pricing and usage of various financial instruments, including spot, forward, swaps and option contracts for equity, debt, foreign exchange and commodity markets. This unit is concerned with understanding how these financial instruments work, how they are used by end users for speculation and risk management, how they are priced and valued, and how market makers manage their risks when they trade these financial instruments.

## 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:

Explain and assess the characteristics and uses of various financial instruments such as forwards, futures, swaps, and options using different communication styles for different audiences.

Analyse financial risks and develop appropriate hedging strategies to manage those risks.

Explain and assess the key concepts and models used to price and value financial instruments.

Construct replicating portfolios for financial instruments and evaluate the importance of the replicating portfolio concept.

Demonstrate the ability to price and value financial instruments.

Conduct independent research to specialised issues in applied finance.

## General Assessment Information

To pass this unit the student needs to (1) Achieve an aggregate mark of 50 or more, and; (2) Pass the Final Exam.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Online Quizzes</a>	20%	No	Refer to iLearn
<a href="#">Assignment</a>	30%	No	Refer to iLearn
<a href="#">Final Examination</a>	50%	Yes	Refer to Timetable

### Online Quizzes

Due: **Refer to iLearn**

Weighting: **20%**

#### Summary of Assessment Task

**Individual / Group:** Individual.

**Format:** There will be two online quizzes throughout the term. Each quiz will be worth 10%. The quizzes are designed to apply your knowledge throughout the term and to provide you with feedback on your performance.

**Due Dates:** See iLearn for due dates.

**Submission Method:** Online via iLearn.

**Duration:** Each quiz will be for 90 minutes.

**Quiz Conditions:** Open book.

#### Extension Requests:

- You are expected to make yourself available for assessment during the relevant quiz window.
- Students who do not submit this task by the due date and time receive a result of zero. This penalty does not apply when an application for Special Consideration has been

made and approved.

- Students who do not attempt the quiz receive a mark of zero. This penalty does not apply in cases where an application for Special Consideration has been made and approved.
- Note: Applications for Special Consideration must be made within 5 (five) business days of the due date and time.
- Refer to MAFC Program Rules at <https://mafcstudents.mq.edu.au/> for information on the University's [Special Consideration Policy](#).

On successful completion you will be able to:

- Explain and assess the characteristics and uses of various financial instruments such as forwards, futures, swaps, and options using different communication styles for different audiences.
- Analyse financial risks and develop appropriate hedging strategies to manage those risks.
- Construct replicating portfolios for financial instruments and evaluate the importance of the replicating portfolio concept.
- Demonstrate the ability to price and value financial instruments.

## Assignment

Due: **Refer to iLearn**

Weighting: **30%**

### Summary of Assessment Task

**Individual / Group:** Individual.

**Due Date:** Refer to the unit's iLearn site.

**Submission Method:** Online via the unit's iLearn site.

**Duration:** Refer to Assignment Coversheet.

### Extension Requests:

- 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 incurs a 20% penalty). This penalty does not apply for cases in which an application for Special Consideration is made and approved.
- Late submissions will be accepted up to 96 hours after the due date and time.
- Note: Applications for Special Consideration must be made within 5 (five) business days

of the due date and time.

- Refer to MAFC Program Rules at <https://mafcestudents.mq.edu.au/> for information on the University's [Special Consideration Policy](#).

**Other Information:** Assignment questions and data will be placed on the unit's iLearn site.

On successful completion you will be able to:

- Explain and assess the characteristics and uses of various financial instruments such as forwards, futures, swaps, and options using different communication styles for different audiences.
- Analyse financial risks and develop appropriate hedging strategies to manage those risks.
- Conduct independent research to specialised issues in applied finance.

## Final Examination

Due: **Refer to Timetable**

Weighting: **50%**

**This is a hurdle assessment task (see [assessment policy](#) for more information on hurdle assessment tasks)**

### Summary of Assessment Task

**Individual / Group:** Individual.

**Due Date:** Refer to Timetable.

Different Class Groups have different deadlines. Students should find the timetable and dates relevant to their group at <https://www.mq.edu.au/about/about-the-university/faculties-and-departments/business/study-with-us/macquarie-applied-finance-centre/timetables>.

**Submission Method:** As per MAFC Program Rules at <https://mafcestudents.mq.edu.au/>.

**Duration:** 3 hours plus 10 minutes reading time.

### Examination Conditions:

- All examinations are closed book. However, permitted materials and aids are:
  - A study sheet, prepared by the student (one double-sided A4 page), to be advised by the lecturer prior to the Exam.
  - Calculators. Permitted calculators are noted under 'Calculators' below.
- Exam times and locations are noted in the unit timetable at <https://www.mq.edu.au/about/about-the-university/faculties-and-departments/business/study-with-us/macquarie-applied-finance-centre/timetables>.
- Refer to MAFC Program Rules at <https://mafcestudents.mq.edu.au/>.

### Extension Requests:

- You are expected to present yourself for examination at the time and place designated in the relevant MAFC Timetable at <https://www.mq.edu.au/about/about-the-university/faculties-and-departments/business/study-with-us/macquarie-applied-finance-centre/timetables>.
- Deferral of an examination is not permitted unless an application for Special Consideration is made and approved.
- Students who do not attend receive a mark of zero. This penalty does not apply in cases where an application for Special Consideration has been made and approved.
- Note: Applications for Special Consideration must be made within 5 (five) business days of the due date and time.
- Refer to MAFC Program Rules at <https://mafstudents.mq.edu.au/> for information on the University's [Special Consideration Policy](#) or non-attendance at an examination.

On successful completion you will be able to:

- Explain and assess the characteristics and uses of various financial instruments such as forwards, futures, swaps, and options using different communication styles for different audiences.
- Analyse financial risks and develop appropriate hedging strategies to manage those risks.
- Explain and assess the key concepts and models used to price and value financial instruments.
- Construct replicating portfolios for financial instruments and evaluate the importance of the replicating portfolio concept.
- Demonstrate the ability to price and value financial instruments.

## Delivery and Resources

### CLASSES

**Face-to-Face Teaching:** Generally 36 hours.

**Timetable:** Detailed timetable for classes are on the Centre's website at <https://www.mq.edu.au/about/about-the-university/faculties-and-departments/business/study-with-us/macquarie-applied-finance-centre/timetables>

### **Consultation Times:**

Students who wish to contact any of the teaching staff may do so through:

- The unit's iLearn site, in relation to general queries (so that all students may benefit); or

- Individual consultation with the lecturer by email in the first instance, if necessary.

## **REQUIRED AND RECOMMENDED TEXTS AND/OR MATERIALS**

**Text:** Notes will refer to the McDonald, Robert L. Derivatives MARKETS (3rd edition). Pearson Education/Prentice Hall, Upper Saddle River, New Jersey 2013. A lower cost version is available, Pearson New International Edition: ISBN 9781292021256.

### **Additional Readings:**

- Additional readings are included in iLearn.
- These readings are examinable.

**Lecture Notes:** Available in printed form and electronically via iLearn.

**Study Problems:** Students are required to work systematically through suggested problem sets. These problems will not be collected but they will help you prepare for the exams. Answers to the problems will be posted on the unit's iLearn site.

**Pre-unit Materials:** Information papers on statistics, regression, accounting and other material may be found at <http://mafcstudents.mq.edu.au/new-to-mafc/pre-course-materials/>. Students should work through this material prior to commencing the degree. The material will remain a useful reference as students progress through the program.

### **Useful References:**

- Bodie, Kane and Marcus, Investments, McGraw Hill, 10th edition, 2013.
- Hull, Fundamentals of Futures and Options Markets, Pearson Education/Prentice Hall, 8th edition 2013.
- McDonald, Fundamentals of Derivatives Markets, Prentice-Hall, 2009.

### **Calculators:**

- A financial calculator that can handle time value of money calculations, logs and power functions is required.
- The Hewlett Packard calculator hp17bII+ is recommended.
- In examinations, hand held calculators are permitted. Mobile phones and computers are not permitted.

### **Assumed Access:**

- Access to a computer with word processing and spreadsheet capability is assumed, as is general student computer literacy. In particular, students should be comfortable to open a blank spreadsheet and code formulae into cells in order to make that spreadsheet do something useful. Students who find this daunting will struggle with the case studies.
- Also assumed is access to a Web browser (for example, Safari, Internet Explorer or

Firefox) and email software and a student's own connection to an internet service provider.

## **TECHNOLOGY USED AND REQUIRED**

### **Unit iLearn Site:**

- Found by logging on to iLearn [ilearn.mq.edu.au](http://ilearn.mq.edu.au), then clicking on ***ECFS867 Financial Instruments***.
- This is where you will find forums, downloadable resources and links to important pages.
- The forum allows you to communicate with other students and lecturer(s) and may provide supplementary material.
- You are requested to post your questions on the forums at least 24 hours prior to the assignment submission date or the examination date. Questions posted after that time may not be answered. **Please try to not leave your questions to the last few days.**

### **Important Notice:**

- It is important that you familiarise yourself with the unit's iLearn site.
- Students should check the unit's iLearn site regularly (minimum twice a week and prior to all lectures) and look for updates and distribution of materials (including case studies) related to the unit or assessments and, if relevant, participate in forum discussions.

## **Unit Schedule**

### **PART 1**

#### **1. INTRODUCTION TO FINANCIAL INSTRUMENTS (1 ½ SESSIONS)**

##### **Topics:**

- What is a financial instrument?
- An overview of financial markets
- Buying and short selling financial instruments
- The building block financial instruments

##### **Readings:**

- McDonald Chapter 1, 2, 3.2

#### **2. FINANCIAL RISK MANAGEMENT (1 ½ SESSIONS)**

##### **Topics:**



- Hedging strategies using forwards and options
- Hedging strategies using futures
- Why do firms hedge?

**Readings:**

- McDonald Chapter 4
- Hull, *Fundamentals of Futures and Options Markets*, pages 47-61
- McDonald, *Fundamentals of Derivatives Markets*, pages 114-119
- Stulz, *Rethinking Risk Management*
- Sundaram and Das, *Derivatives: Principles and Practice*, pages 42-45

### **3. FINANCIAL AND COMMODITY FORWARDS AND FUTURES (2 SESSIONS)**

**Topics:**

- A framework for pricing forwards
- Futures contracts
- Currency contracts
- Commodity contracts

**Readings:**

- McDonald Chapter 5.1-5.6
- McDonald, *Fundamentals of Derivatives Markets*, pages 164-181
- Sundaram and Das, *Derivatives: Principles and Practice*, pages 46-53

### **4. OPTION PRICING 1: OPTION RELATIONSHIPS AND THE BINOMIAL OPTION PRICING MODEL (1 SESSION)**

**Topics:**

- Put-call parity
- Properties of option prices
- Pricing options using the binomial model

**Readings:**

- McDonald Chapter 9, 10
- Chance, *Essays in Derivatives*, Essay 16
- Chance, *Essays in Derivatives*, Essay 31

## PART 2

### **5. OPTION PRICING 2: BLACK-SCHOLES OPTION PRICING MODEL (2 SESSIONS)**

#### **Topics:**

- Pricing options using the Black-Scholes model
- Option Greeks
- Implied volatility

#### **Readings:**

- McDonald Chapter 12

### **6. INTEREST RATE FORWARDS AND FUTURES (2 SESSIONS)**

#### **Topics:**

- Bonds
- Interest rate sensitivity
- Forward rate agreements and short term interest rate futures
- Bond futures
- Repurchase agreements

#### **Readings:**

- McDonald Chapter 5.7, 7
- Whaley, *Derivatives: Markets, Valuation and Risk management*, pages 666-669

### **7. SWAPS (2 SESSIONS)**

#### **Topics:**

- Introduction to swaps
- Interest rate swaps
- Currency swaps
- Total rate of return swaps
- Swaptions

#### **Readings:**

- McDonald Chapter 8

- Sundaram and Das, *Derivatives: Principles and Practice*, pages 589-593

## Learning and Teaching Activities

### Strategy

The Master of Applied Finance degree adopts a deep teaching and learning strategy, in which students acquire and retain knowledge and also are able to make sense of the issues and concepts and apply them in the “real world”. The degree relies heavily on student engagement and participation by: (a) Continuous learning throughout the term. This is encouraged through a combination of students undertaking prescribed reading throughout the units and/or completion of practice problems, case studies, assignments, class presentations etc and interaction via forums in the unit’s iLearn site; and (b) Assessments, which enable the student to demonstrate his/her understanding of the learning objectives achieved through the continuous learning.

### Student Participation

Students participate in this unit by: (a) Attending lectures and participating in class discussion; (b) Before each class, completing the recommended readings of notes and text, and working systematically through suggested problem sets; (c) Interacting on the unit’s iLearn site; and (d) Completing all assessment tasks and exams. On average, the unit will require students to complete, for every hour of class time, approximately 3 hours private study.

## 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 \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/p\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/p)

[olicy-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)

Students should also consult the MAFC Program Rules found at [https://mafcstudents.mq.edu.a](https://mafcstudents.mq.edu.au/)  
[u/](#).

## Student Support

Macquarie University provides a range of support services for students. For details, visit [http://stu](http://students.mq.edu.au/support/)  
[dents.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 enquiry service (MAFC-specific)

For all student enquiries, please contact [studentsupport@mafc.mq.edu.au](mailto:studentsupport@mafc.mq.edu.au)

## 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.

## Learning Skills

Learning Skills ([http://www.students.mq.edu.au/support/learning\\_skills/](http://www.students.mq.edu.au/support/learning_skills/)) 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 Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](https://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 - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

#### Learning outcomes

- Analyse financial risks and develop appropriate hedging strategies to manage those risks.
- Conduct independent research to specialised issues in applied finance.

#### Assessment tasks

- Online Quizzes
- Assignment
- Final Examination

### 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

- Explain and assess the characteristics and uses of various financial instruments such as

forwards, futures, swaps, and options using different communication styles for different audiences.

- Explain and assess the key concepts and models used to price and value financial instruments.
- Construct replicating portfolios for financial instruments and evaluate the importance of the replicating portfolio concept.
- Demonstrate the ability to price and value financial instruments.

## **Assessment tasks**

- Online Quizzes
- Assignment
- 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**

- Analyse financial risks and develop appropriate hedging strategies to manage those risks.
- Demonstrate the ability to price and value financial instruments.
- Conduct independent research to specialised issues in applied finance.

## **Assessment tasks**

- Online Quizzes
- Assignment
- 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

- Explain and assess the characteristics and uses of various financial instruments such as forwards, futures, swaps, and options using different communication styles for different audiences.
- Explain and assess the key concepts and models used to price and value financial instruments.
- Construct replicating portfolios for financial instruments and evaluate the importance of the replicating portfolio concept.
- Conduct independent research to specialised issues in applied finance.

## Assessment tasks

- Online Quizzes
- Assignment
- Final Examination

## Changes from Previous Offering

The curriculum for this unit has changed and been updated. This unit now assumes you have acquired pre-requisite knowledge of derivative financial instruments from AFCP801 Portfolio Management and Valuation or equivalent. Topic 1 now includes the building block financial instruments which replaces the material on "Introduction to forwards, futures and options". There are now two topics on option pricing. Topic 4 includes the same material on option relationships and the binomial option pricing model. Topic 5 has been updated to apply Black-Scholes option pricing model to different underlying assets and also includes option Greeks and implied volatility.

Assessments have also changed. The unit now includes online quizzes instead of a mid term exam. The weighting for the assignment is now 30% and the weighting for the final examination is now 50%.

## Important Notice

This Unit Guide may be subject to change. Students will be advised, via an "Announcement" on iLearn, if the Unit Guide is changed.

The latest version is available at <https://unitguides.mq.edu.au/>.

Students should read the Unit Guide carefully at the start of term. It contains important information about the unit. If anything is unclear, please consult one of the unit lecturers.