



# ECFS868

## Financial Risk Management

AFC Term 4 City 2019

*Department of Applied Finance*

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#### **Disclaimer**

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## General Information

Unit convenor and teaching staff

Unit Convenor / Lecturer

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Contact via Email

Credit points

4

Prerequisites

(Admission to MAppFin or MAppFin(Adv) or GradDipAppFin) and (AFCP801 or (ECFS865 and ECFS867))

Corequisites

Co-badged status

Unit description

Financial Risk Management (FRM) is based on an enterprise risk management framework designed to increase the likelihood that an organisation will achieve its objectives. Unlike traditional, purely defensive approaches to risk, FRM's philosophy focuses on how effective risk management adds value to the organisation. We consider methods for identifying, assessing and treating a variety of risks, with special focus on market, credit, funding liquidity and operational risks. The unit encompasses both quantitative skills and broader human and organisational issues. We encourage students to question the assumptions behind the models, to think about behavioural biases, to identify ethical issues, to consider incentives, and to think creatively of risk management solutions. The lectures deliver theoretical and industry relevance by using a case study methodology. Lectures are complemented by online learning activities designed to promote student interaction, engagement, and understanding throughout the Unit. Assessable pre-course activities must be completed prior to the first class.

## 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:

Apply a risk management framework, having regard to the business context, including

the identification of appropriate risk management solutions.

Use, interpret and critique quantitative methods for risk assessment.

Identify and respond effectively to misconduct risks using an ethical framework.

Conduct independent research that communicates effectively.

## 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.

**Assessable pre-course activities are to be completed. Assessable pre-course activities (taking 4-8 hours) MUST be completed prior to the first class. Go to Topic 1 and complete all the Before Class Activities. Non-completion will result in zero marks for these assessments and, more importantly, reduce the quality of your learning experience.**

## Assessment Tasks

Name	Weighting	Hurdle	Due
<u>Assignment</u>	30%	No	Refer to iLearn
<u>Participation</u>	10%	No	In iLearn
<u>Online Quizzes</u>	20%	No	In iLearn
<u>Final Exam</u>	40%	Yes	Refer to Timetable

### Assignment

Due: **Refer to iLearn**

Weighting: **30%**

#### Summary of Assessment Task

**Individual / Group:** Individual.

**Due Date:** Refer to iLearn.

**Submission Method:** Via Turnitin on iLearn. Students are required to use the cover sheet provided.

#### 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://mafcstudents.mq.edu.au/> for information on the University's [Special Consideration Policy](#).

On successful completion you will be able to:

- Apply a risk management framework, having regard to the business context, including the identification of appropriate risk management solutions.
- Use, interpret and critique quantitative methods for risk assessment.
- Conduct independent research that communicates effectively.

## Participation

Due: **In iLearn**

Weighting: **10%**

### Summary of Assessment Task

**Individual / Group:** Individual.

**Timing/Duration:** Assessable online discussion forums and class discussions will occur throughout the unit, with some assessment completed prior to the first class i.e. the 'Before Class' activities in relation to Topic 1. Students will be notified of closing dates for assessable online discussion forums in class and via the News forum. Generally, students will have a window of at least one week to make a contribution.

**Grading Method:** Participation judged on quality and frequency. Good questions are highly valued.

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

### Extension Requests:

- 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://mafcstudents.mq.edu.au/> for information on the University's [Special Consideration Policy](#).

On successful completion you will be able to:

- Apply a risk management framework, having regard to the business context, including the identification of appropriate risk management solutions.

- Identify and respond effectively to misconduct risks using an ethical framework.

## Online Quizzes

Due: **In iLearn**

Weighting: **20%**

### Summary of Assessment Task

**Individual / Group:** Individual.

**Timing/Duration:** Seven online quizzes will be scheduled throughout the unit with the first two quizzes to be completed before the first class (see 'Before Class' activities in relation to Topic 1). Students can complete the quiz any time before the closing date/time and the duration is 30-60 minutes.

**Submission Method:** Via iLearn.

**Examination 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:

- Apply a risk management framework, having regard to the business context, including the identification of appropriate risk management solutions.
- Use, interpret and critique quantitative methods for risk assessment.

## Final Exam

Due: **Refer to Timetable**

Weighting: **40%**

**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 at <https://www.mq.edu.au/about/about-the-university/faculties-and-departments/business/study-with-us/macquarie-applied-finance-centre/timetables>.

**Timing:** Refer to Timetable 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://mafcstudents.mq.edu.au/>.

**Duration:** 2 hours plus 10 minutes reading time.

### **Examination Conditions:**

- All examinations are closed book. However, permitted materials and aids are:
  - A formula sheet to be provided at the exam
  - A calculator (any, provided it has no communications capacity)
- 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://mafcstudents.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://mafcstudents.mq.edu.au/>.
- 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://mafcstudents.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:

- Apply a risk management framework, having regard to the business context, including the identification of appropriate risk management solutions.
- Use, interpret and critique quantitative methods for risk assessment.
- Identify and respond effectively to misconduct risks using an ethical framework.

## Delivery and Resources

### CLASSES

**Face-to-Face Teaching:** Generally 30 hours.

**Online Activities:** Under the 'flipped classroom' model, some learning activities will take place independently and online (using iLearn).

**Timetable:** Detailed timetable for classes are available 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 forum in relation to general queries (so that all students may benefit).

### REQUIRED AND RECOMMENDED TEXTS AND/OR MATERIALS

**Text:**

- Crouhy, Galai and Marks Essentials of Risk Management (2nd edition). McGraw-Hill Education.
- Students should buy this text. It provides an up-to-date exposition of relevant material. The lecture notes reference it extensively.

**Additional Readings:**

- Additional readings are available on the unit's iLearn site.
- Essential Readings are examinable but Extension Readings are not. If in doubt, students should assume that a reading is examinable.

**Lecture Notes:** Available electronically via iLearn.

**Useful References:**

- Hull, John C., Risk Management and Financial Institutions (5th edition), Wiley Finance.

**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, any calculator is permitted provided it does not have communication capacity.
- No mobile phones or computers are permitted in examinations.

**Laptop Computers:**

- Some classes (Topics 3 and 6) involve in-class computer exercises. Students are strongly encouraged to bring (fully charged) laptops to those classes.

**Assumed Knowledge:** Mathematics, Statistics and Economics content.

- Finance has a high level of numerate content. Consequently this unit is, in parts, mathematical and statistical. As an indication of the level of statistics, students should find the following problem easy to solve: If an asset has expected return of 10% p.a. and standard deviation of 15% p.a., what is the probability that returns over the next year will be less than 0%?
- Finance is a branch of Economics. This unit assumes knowledge of market structures (monopoly vs perfect competition), price elasticity of demand etc.
- AFCP812 Quantitative and Economic Analysis (gateway unit for MAF students) covers both quantitative techniques and microeconomics. If you wish to brush up your skills you may request enrolment into this unit on a non-award basis by sending an email to [studentsupport@mafc.mq.edu.au](mailto:studentsupport@mafc.mq.edu.au)
- A useful reference for quantitative matters is Berenson, Levine, Szabat, O'Brien, Jayne and Watson Basic Business Statistics, 5<sup>th</sup> edition.
- A useful reference for microeconomic matters is Frost, L. and J. Taylor Microeconomics: Principles and Practice. Cengage Learning.
- Free information on statistics and regression is available here: <http://mafcstudents.mq.edu.au/new-to-mafc/pre-course-materials/>

**Assumed Access:** Access to a computer with word processing and spreadsheet capability is assumed, as is general student computer literacy.

## **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 **ECFS868 Financial Risk Management**.
- 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:**



- It is important that you familiarise yourself with the unit's iLearn site.
- All students should check iLearn 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

### 1. A RISK MANAGEMENT FRAMEWORK

**References:** Shortreed 'ERM Frameworks', Chapter 7 in Fraser and Simkins (eds) Enterprise Risk Management Kolb Series in Finance, Wiley 2010.

**Topics:**

- Review of crucial risk concepts (including quantitative methods)
- Defining risk and risk management
- The Enterprise Risk Management (ERM) Framework
- The bank perspective
- The corporate perspective
- Exposure types (transaction, translation, economic)
- Handling exposure uncertainty
- Case Study: BHP Billiton

**Pre-Class:** Statistics Review, ERM Frameworks, Introductions, Bank Scandals.

### 2. RISK AND THE BALANCE SHEET

**References:** Crouhy, Galai and Marks Chapters 3, 8 and 17.

**Topics:**

- Asset and liability mismatch (gap analysis)
- Earnings variability, product repricing issues
- Funding liquidity risk (liquidity coverage ratio, net stable funding ratio)
- Early warning indicators and risk management for funding/liquidity risk
- Role of the Asset and Liability Committee
- Economic vs Regulatory Capital
- Risk-adjusted Return on Capital (RAROC)
- Bank regulatory frameworks
- Case Study: Lehman Brothers

### 3. ANALYSING MARKET RISK

**References:** Crouhy, Galai and Marks Chapter 7.

**Topics:**

- Market risk in the corporate setting
- Monte Carlo simulation
- Analysing risk in trading/investment portfolios
- Some features of real-world data (violations of Normality)
- Value-at-risk and Expected Shortfall
- Regulatory trends in market risk
- Using risk measures to manage market risk
- Grappling with model risk

#### **4. GOVERNANCE, ETHICS AND RISK**

**References:** Crouhy, Galai and Marks Chapter 4.

**Topics:**

- Why governance?
- Corporate governance overview
- Corporate governance and risk management
- Risk governance in banks
- Risk culture
- Designing the risk management framework
- Remuneration and Performance Measurement
- Performance based remuneration
- Equity based remuneration
- Ethical dilemmas for risk managers
- Case Study: Barclays

**Pre-Class:** Readings, videos, online quiz and assessable forums.

#### **5. CREDIT RISK**

**References:** Crouhy, Galai and Marks Chapters 9, 10.

**Topics:**

- Retail vs Commercial vs Corporate Credit Context
- Key elements of credit risk (probability of default, loss given default, exposure at default)
- Methods of credit risk management
- Regulatory trends in credit risk
- Structural approach to credit analysis
- Reduced form methods for credit analysis (hazard rate modelling)
- Credit Rating Agencies
- Principles of credit model selection

- Counterparty credit risk (introduction)
- Credit Default Swaps (introduction)

## 6. OPERATIONAL RISK

**References:** Crouhy, Galai and Marks Chapter 14.

### Topics:

- Definition, scope and nature of operational risk (including long tail)
- Assessing operational risk with simulation methods and structured workshops
- Regulatory trends in operational risk
- Key Risk Indicators (KRIs) for operational risk
- Risk mitigation and treatment options

## Learning and Teaching Activities

### Strategy

Financial Risk Management has adopted the 'flipped classroom' methodology where students take greater responsibility for their own learning outside of the classroom. Students come to class better prepared and this enables class time to be used more effectively to explore complex issues and cases. There are more opportunities for student-to-student interaction, helping students to build the professional networks that are invaluable for career advancement. We expect that this learning and teaching method will encourage deeper and more effective learning. The unit 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, online activities, case studies, assignments, class discussions, etc and interaction via forums; 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 pre-class activities, reading notes and other prescribed readings; (c) After each class, working systematically through suggested problem sets and completing post-class on-line activities; (d) Interacting in forums; and (e) Completing all assessment tasks and exams. On average, the unit will require students to complete, for every hour of class time, approximately 4 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](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)

Students should also consult the MAFC Program Rules at <https://mafcstudents.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 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.

## 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.

## 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

- Apply a risk management framework, having regard to the business context, including the identification of appropriate risk management solutions.
- Use, interpret and critique quantitative methods for risk assessment.

#### Assessment tasks

- Assignment
- Participation
- Online Quizzes
- 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 outcome**

- Conduct independent research that communicates effectively.

### **Assessment task**

- Assignment

## **PG - Engaged and Responsible, Active and Ethical Citizens**

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

### **Learning outcome**

- Identify and respond effectively to misconduct risks using an ethical framework.

### **Assessment tasks**

- Participation
- Final Exam

## **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.