



# ACST201

## Financial Modelling

S2 Day 2019

*Department of Actuarial Studies and Business Analytics*

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## General Information

Unit convenor and teaching staff

Unit Convenor

Colin Zhang

[colin.zhang@mq.edu.au](mailto:colin.zhang@mq.edu.au)

Contact via [colin.zhang@mq.edu.au](mailto:colin.zhang@mq.edu.au)

E4A 227

Refer to iLearn

Credit points

3

Prerequisites

(15cp at 100 level or above) including (ACST101 and (STAT150 or STAT170 or STAT171))

Corequisites

Co-badged status

Unit description

This unit explores some basic concepts of finance, in particular: price; yield; the relationship between price and yield; interest rate risk; reinvestment risk; duration and its uses; volatility; the contingent payments approach; arbitrage pricing theory; pricing forwards; futures and options. To achieve understanding, this unit uses financial mathematics (the techniques learned in ACST101 are developed further here) to analyse transactions involving commonly used financial instruments in the context of the markets in which they are traded. At the same time, students develop skills in solving problems; in explaining financial ideas in simple language; in constructing spreadsheet models; and in working as part of a team. A range of assessment tasks are provided, some to generate feedback on how well the understanding and skills are developing, and others to determine the standard of understanding and skills attained.

## 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:

- Demonstrate an understanding of the basic concepts and principles of financial analysis.
- Design Excel spreadsheets to solve basic problems in financial analysis.

Appraise the work of others in the field of financial analysis.

Construct a solution to a problem in financial analysis as part of a team.

## General Assessment Information

### Extensions

No extensions will be granted. Students who have not submitted the task prior to the deadline will be awarded a mark of zero for the task, except for cases in which an application for special consideration is made and approved.

### 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

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

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#">Take-home Quiz</a>	20%	No	20/8/19 and 15/10/19
<a href="#">Spreadsheet Project Task</a>	14%	No	Various
<a href="#">Class Test</a>	6%	No	Various
<a href="#">Final Examination</a>	60%	No	Exam period

### Take-home Quiz

Due: **20/8/19 and 15/10/19**

Weighting: **20%**

You will use iLearn to submit your solutions (in a PDF file) to two take-home quizzes. For each take-home quiz, you will be given **48 hours** to submit your solution. Question will be released on iLearn two days before the deadline.

You will use iLearn's peer assessment tool to mark the work of your classmates (due 30/8/19 and 25/10/19).

Please use the first take-home quiz as an indicator of whether you are progressing satisfactorily in the unit. If you are having difficulties, please see the Unit Convenor and consider withdrawing before the census date on Friday of Week 04.

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.

On successful completion you will be able to:

- Demonstrate an understanding of the basic concepts and principles of financial analysis.
- Appraise the work of others in the field of financial analysis.

## Spreadsheet Project Task

Due: **Various**

Weighting: **14%**

You will use iLearn to submit Excel spreadsheets you used to solve a variety of problems.

There are four project tasks.

Task 1 is an **individual** task which is due on 3/9/19. You will be given **48 hours** to complete it. Your Excel files must be submitted electronically via iLearn.

Task 2 is an **individual** task which is due on 1/10/19. You will be given **48 hours** to complete it. Your Excel files must be submitted electronically via iLearn.

Task 3 is a **group** task. Task 3 is due on 8/10/19. You will be assigned to a group to work on this Spreadsheet Project tasks. Your Excel files must be submitted electronically via iLearn. You will use iLearn's assignment tool to report on the successful location of all group members (due 20/9/19).

Task 4 is an **individual** task You will use iLearn's peer assessment tool to mark the work of your classmates (due 21/10/19).

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.

On successful completion you will be able to:

- Demonstrate an understanding of the basic concepts and principles of financial analysis.
- Design Excel spreadsheets to solve basic problems in financial analysis.
- Appraise the work of others in the field of financial analysis.
- Construct a solution to a problem in financial analysis as part of a team.

## Class Test

Due: **Various**

Weighting: **6%**

There are two 10-minute class tests.

The first test will be held in week 7 tutorials. Students must attend the tutorial in which they have

registered. No changes to tutorials may be made.

The second test will be held randomly in tutorials between week 8 and week 13. Students must attend the tutorial in which they have registered. No changes to tutorials may be made. The second test will be undertaken in a random fashion. Questions will be similar to those for that week's tutorial.

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.

On successful completion you will be able to:

- Demonstrate an understanding of the basic concepts and principles of financial analysis.

## Final Examination

Due: **Exam period**

Weighting: **60%**

A three-hour final examination for this unit will be held during the University Examination period.

You are permitted ONE A4 page of paper containing reference material printed on both sides. The material may be handwritten or typed.

The page will not be returned to you at the end of the final examination.

On successful completion you will be able to:

- Demonstrate an understanding of the basic concepts and principles of financial analysis.
- Design Excel spreadsheets to solve basic problems in financial analysis.

## Delivery and Resources

### Reference books

You do NOT have to buy a printed textbook. You may find these books useful as additional references for some topics in ACST201:

- Knox, D M, Zima, P & Brown, R L (1999) *Mathematics of Finance* (Second edition), Irwin/McGraw-Hill
- Sherris, M (1996) *Money & Capital Markets* (Second Edition), Allen & Unwin (available in library only)
- Viney C (2011) *Financial Market Essentials*, McGraw-Hill
- Valentine, T, Ford, G & Copp, R (2006) *Financial Markets & Institutions in Australia*, Prentice Hall

The recommended texts are available in the reserve section of Macquarie University Library.

For those wishing useful reference material on using Microsoft Excel, you may wish to buy a SIMnet online account <http://mq.simnetonline.com>.

## Technology Used and Required

### Calculators

You may use a calculator in the class tests and at the final exam provided that it is portable, silent and battery operated, but you must show clearly the steps involved in every calculation. In the final exam you may NOT use any calculators that have a text-retrieval capacity, whether or not they have a full alphabet on the keyboard. Calculators may be checked at the commencement of the final exam, and the make/model may be recorded.

### Software

Many of the problems you will encounter in this unit can be solved easily with the spreadsheet program, Excel. You can use this spreadsheet program to verify your solutions to many of the problems you are solving. You will need to use Excel to do the Spreadsheet quizzes and the Group Spreadsheet Project. In addition, students in ACST201 will be given access to the financial industry data platform, FactSet. This can be accessed through a web browser. You will use the data from FactSet to complete a number of the assessment tasks in the unit.

### Take-home quizzes

You need to electronically submit your solutions (using iLearn) to the class tests as PDF files. Some possibilities to produce these files are: scan your handwritten solutions to a PDF file; use WORD (or similar software) to type out your solutions and save your work as a PDF file. For each class test you can only submit one PDF file; it must contain all the pages of your solution (so make sure, if your scanner produces separate PDF pages, that you can combine them into one file).

## Unit Schedule

1	Simple interest and short-term financial instruments, compound interest and bonds
2–3	Short-term financial instruments and bond prices
4	Bond prices, bond yields and zero coupon bonds
5	Re-investment risk and TRCY
6	Horizon analysis
7	Horizon analysis, bond duration
	<b>Semester break</b>
8	Bond duration

9-10	Contingent payments, forward contracts
11	Forward contracts
12	Option pricing
13	Revision

## Learning and Teaching Activities

### Learning & Teaching Activities

A class timetable can be found at <http://timetables.mq.edu.au>

## 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 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)

## Supplementary Exams

Information regarding supplementary exams, including dates, is available at:

[http://www.businessandconomics.mq.edu.au/current\\_students/undergraduate/how\\_do\\_i/disruption\\_to\\_studies](http://www.businessandconomics.mq.edu.au/current_students/undergraduate/how_do_i/disruption_to_studies)

## 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 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

### Creative and Innovative

Our graduates will also be capable of creative thinking and of creating knowledge. They will be



imaginative and open to experience and capable of innovation at work and in the community. We want them to be engaged in applying their critical, creative thinking.

This graduate capability is supported by:

### **Learning outcomes**

- Design Excel spreadsheets to solve basic problems in financial analysis.
- Appraise the work of others in the field of financial analysis.
- Construct a solution to a problem in financial analysis as part of a team.

### **Assessment tasks**

- Take-home Quiz
- Spreadsheet Project Task

## **Discipline Specific Knowledge and Skills**

Our graduates will take with them the intellectual development, depth and breadth of knowledge, scholarly understanding, and specific subject content in their chosen fields to make them competent and confident in their subject or profession. They will be able to demonstrate, where relevant, professional technical competence and meet professional standards. They will be able to articulate the structure of knowledge of their discipline, be able to adapt discipline-specific knowledge to novel situations, and be able to contribute from their discipline to inter-disciplinary solutions to problems.

This graduate capability is supported by:

### **Learning outcomes**

- Demonstrate an understanding of the basic concepts and principles of financial analysis.
- Appraise the work of others in the field of financial analysis.
- Construct a solution to a problem in financial analysis as part of a team.

### **Assessment tasks**

- Take-home Quiz
- Spreadsheet Project Task
- Class Test
- Final Examination

## **Critical, Analytical and Integrative Thinking**

We want our graduates to be capable of reasoning, questioning and analysing, and to integrate and synthesise learning and knowledge from a range of sources and environments; to be able to critique constraints, assumptions and limitations; to be able to think independently and systemically in relation to scholarly activity, in the workplace, and in the world. We want them to have a level of scientific and information technology literacy.

This graduate capability is supported by:

## Learning outcomes

- Demonstrate an understanding of the basic concepts and principles of financial analysis.
- Design Excel spreadsheets to solve basic problems in financial analysis.
- Appraise the work of others in the field of financial analysis.
- Construct a solution to a problem in financial analysis as part of a team.

## Assessment tasks

- Take-home Quiz
- Spreadsheet Project Task
- Class Test
- Final Examination

## Problem Solving and Research Capability

Our graduates should be capable of researching; of analysing, and interpreting and assessing data and information in various forms; of drawing connections across fields of knowledge; and they should be able to relate their knowledge to complex situations at work or in the world, in order to diagnose and solve problems. We want them to have the confidence to take the initiative in doing so, within an awareness of their own limitations.

This graduate capability is supported by:

## Learning outcomes

- Demonstrate an understanding of the basic concepts and principles of financial analysis.
- Design Excel spreadsheets to solve basic problems in financial analysis.
- Appraise the work of others in the field of financial analysis.
- Construct a solution to a problem in financial analysis as part of a team.

## Assessment tasks

- Take-home Quiz
- Spreadsheet Project Task
- Class Test
- Final Examination

## Research and Practice

This unit uses research by Macquarie University researchers and external sources (references will be given in the lectures, tutorials and assignment).