ACST8029

Capital Budgeting and Financial Modelling

Session 1, In person-scheduled-weekday, North Ryde 2025

Department of Actuarial Studies and Business Analytics

Contents

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General Information

Unit convenor and teaching staff
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Credit points
10

Prerequisites
ACST6003 or admission to MActPrac

Corequisites

Co-badged status

Unit description
This unit covers established methods for the valuation and appraisal of investment projects and related financial decisions. It also covers the new 'real options approach' to investment appraisal, including the application of exotic options pricing formulae to real options using Microsoft Excel to build financial models, and introducing students to Visual Basic/Excel macros for financial modelling.

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: Understand current established methods for the valuation and appraisal of investment projects, their advantages and disadvantages and the development of financial models for this purpose.

ULO2: Build the financial models and perform the calculations to implement these methods using microsoft excel.

ULO3: Demonstrate an introductory understanding of the "real options approach" to investment appraisal.

ULO4: Document a financial decision making problem and its solution using spreadsheet software and communicate the results to interested stakeholders.

Assessment Tasks

Name	Weighting	Hurdle	Due
Skills development: Building financial models (2)	25%	No	Week 5
Skills development: Building financial models (1)	25%	No	Week 10
Formal and observed learning: Exam	50%	No	Formal Exam Period

Skills development: Building financial models (2)

Assessment Type [1]: Quantitative analysis task
Indicative Time on Task [2]: 25 hours
Due: **Week 5**
Weighting: **25%**

The purpose of this assessment is to assess the skills and knowledge required to produce business evaluation for an organisation.   You will build financial models and perform calculations to implement the models using Excel.   **Skills in focus:** - Data Literacy - Digital Literacy [Excel] **Deliverable:** Written submission Individual assessment

On successful completion you will be able to:

- Build the financial models and perform the calculations to implement these methods using microsoft excel.
- Demonstrate an introductory understanding of the "real options approach" to investment appraisal.
- Document a financial decision making problem and its solution using spreadsheet software and communicate the results to interested stakeholders.

Skills development: Building financial models (1)

Assessment Type [1]: Quantitative analysis task
Indicative Time on Task [2]: 25 hours
Due: **Week 10**
Weighting: **25%**

The purpose of this assessment is to assess the skills and knowledge required to produce business evaluation for an organisation.   You will build financial models and perform calculations to implement the models using Excel.   **Skills in focus**: - Data Literacy - Digital Literacy [Excel]

Deliverable: Written submission Individual assessment

On successful completion you will be able to:
- Understand current established methods for the valuation and appraisal of investment projects, their advantages and disadvantages and the development of financial models for this purpose.
- Build the financial models and perform the calculations to implement these methods using microsoft excel.
- Document a financial decision making problem and its solution using spreadsheet software and communicate the results to interested stakeholders.

Formal and observed learning: Exam

Assessment Type [1]: Examination
Indicative Time on Task [2]: 31 hours
Due: **Formal Exam Period**
Weighting: **50%**

The purpose of this assessment is for you to demonstrate the expertise they have gained in Capital Budgeting and Financial Modelling. You will participate in a 2-hour exam held during the University Examination period. Important information about the exam will be made available on the unit iLearn page. You should also review the MQ Exams website for general tips.

Deliverable: Formal exam Individual assessment

On successful completion you will be able to:
- Understand current established methods for the valuation and appraisal of investment projects, their advantages and disadvantages and the development of financial models for this purpose.
- Build the financial models and perform the calculations to implement these methods using microsoft excel.
- Demonstrate an introductory understanding of the "real options approach" to investment appraisal.

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[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

Classes:

- A 3-hour lecture / tutorial will be held each week.
- All lecture and tutorial exercises and solutions will be available on iLearn.

Textbooks:

There is no specific required text for this unit. Detailed lecture materials are provided. However the following books are useful references:

- Capital budgeting: Financial appraisals of investment projects by Dayananda et al (ISBN 0 521 52098 3).
- Financial Modeling by Simon Beninga (ISBN 0 262 02482 9)

Technology Used and Required

You will be required to use the teaching website, Excel and Word.

Unit Web Page

Course material is available on the learning management system (iLearn). To access the teaching website, go to http://ilearn.mq.edu.au and login using your usual login and password

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" section below. Students are expected to read the relevant lecture notes 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.
- 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 practising using excel to solve financial decision making problems.

Unit Schedule

Week	Lecture	Topics
1	1	Introduction to excel, introductory financial mathematics & functions. Translating mathematical formulae into excel code. Application to pricing bonds and bills. Excel implementation.
2	2	Further topics in financial mathematics. Amortizing loans, annuities, leases & bonds. Excel implementation.
3	3	Introduction to capital budgeting. Project cashflows and methods for their estimation.
4	4	Elementary methods of forecasting. Matrix algebra and applications. Implementation in excel.
5	5	Project appraisal using NPV, IRR, ARR, PP and other methods. Excel implementation

Week	Lecture	Topics
6	6	Methods for estimating model parameters, Sensitivity and breakeven analysis. Case Studies
7	7	mid semester exam
8	8	Introduction to options and valuation via the Black Scholes model.
9	9	Binomial option pricing methods and implementation in excel.
10	10	Monte Carlo simulation modelling and financial applications.
11	11	The "real options approach" to valuation of projects.
12	12	Case Studies
13	13	Case Studies and revision

Policies and Procedures

Macquarie University policies and procedures are accessible from Policy Central (https://policies.mq.edu.au). 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
- Assessment Procedure
- Complaints Resolution Procedure for Students and Members of the Public
- Special Consideration Policy

Students seeking more policy resources can visit Student Policies (https://students.mq.edu.au/support/study/policies). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

To find other policies relating to Teaching and Learning, visit Policy Central (https://policies.mq.edu.au) and use the search tool.

Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: https://students.mq.edu.au/admin/other-resources/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 connect.mq.edu.au or if you are a Global MBA student contact globalmba.support@mq.edu.au

Academic Integrity

At Macquarie, we believe academic integrity – honesty, respect, trust, responsibility, fairness and courage – is at the core of learning, teaching and research. We recognise that meeting the expectations required to complete your assessments can be challenging. So, we offer you a range of resources and services to help you reach your potential, including free online writing and maths support, academic skills development and wellbeing consultations.

Student Support

Macquarie University provides a range of support services for students. For details, visit http://students.mq.edu.au/support/

The Writing Centre

The Writing Centre provides resources to develop your English language proficiency, academic writing, and communication skills.

- Workshops
- Chat with a WriteWISE peer writing leader
- Access StudyWISE
- Upload an assignment to Studiosity
- Complete the 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

Macquarie University offers a range of Student Support Services including:

- IT Support
- Accessibility and disability support with study
- Mental health support
- Safety support to respond to bullying, harassment, sexual harassment and sexual assault
- Social support including information about finances, tenancy and legal issues
- Student Advocacy provides independent advice on MQ policies, procedures, and processes

Student Enquiries

Got a question? Ask us via the Service Connect Portal, or contact Service Connect.

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.

Unit information based on version 2025.04 of the Handbook