



# ACST101

## Techniques and Elements of Finance

MQC1 Day 2015

*Dept of Applied Finance and Actuarial Studies*

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#### Disclaimer

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## General Information

Unit convenor and teaching staff

Moderator

Timothy Kyng

Unit Convenor

Wei Cui

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Credit points

3

Prerequisites

Corequisites

Co-badged status

Unit description

This unit provides an introduction to the pricing of financial instruments and the functions of the Australian financial system. Students apply mathematical concepts in valuing a range of financial assets including loans, bonds, shares and investments. They also increase their financial literacy by learning about financial institutions, financial markets, risks and regulation. Spreadsheet skills are introduced throughout the unit. A background of HSC Mathematics or equivalent numerical competency is assumed. Students who have not studied the necessary mathematics are advised to complete Mathematics 123 (MATH123) before enrolling in ACST101. The concepts developed in this unit are required in subsequent actuarial studies and finance units. The unit also provides a practical introduction to finance for students not planning to continue with study in the area.

## 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:

1. Understand the concepts of present value and future value and apply to problems involving single payments.
2. Apply the concepts of present value and future value to problems involving annuities.
3. Use the concepts from 1. and 2. to price mortgage loans, bonds and debentures and

other financial instruments.

4. Describe the functions of the Australian financial system and the financial institutions, financial instruments and financial markets which form part of it.

## Assessment Tasks

Name	Weighting	Due
<u>Weekly Quizzes</u>	20%	week 2 to week 12
<u>Class Tests</u>	20%	Week 5 and Week 9
<u>Final Examination</u>	60%	University Examination Period

### Weekly Quizzes

Due: **week 2 to week 12**

Weighting: **20%**

#### Submission

For each of the 11 weekly online quizzes, students use iLearn to obtain the questions, enter the answers and view the solutions. Before students can access Quiz 1 due in Week 3 they must score **100% in the Unit Requirements Quiz** and at least **80% in both the Maths Revision Quiz and the Practice Quiz**.

#### Extension

No extensions will be granted. Students who have not submitted a quiz prior to the deadline will be awarded a mark of 0 for the quiz, except for cases in which an application for special consideration is made and approved.

#### What is required to complete the unit satisfactorily

A satisfactory attempt by the due date is required for at least 8 quizzes. A definition of satisfactory is given in the Unit Requirements Quiz.

#### Calculation of Overall Quiz mark

The marks for all 11 quizzes are used to calculate the final assessment mark out of 20 based on quizzes. Quiz 1 and Quiz 2 count for 1 mark each and Quizzes 3 to 11 count for 2 marks each.

On successful completion you will be able to:

- 1. Understand the concepts of present value and future value and apply to problems involving single payments.
- 2. Apply the concepts of present value and future value to problems involving annuities.
- 3. Use the concepts from 1. and 2. to price mortgage loans, bonds and debentures and other financial instruments.

- 4. Describe the functions of the Australian financial system and the financial institutions, financial instruments and financial markets which form part of it.

## Class Tests

Due: **Week 5 and Week 9**

Weighting: **20%**

### **Date of Class Tests Class**

Class Test 1 will be held in the first hour of the two hour lecture in Week 5.

Students must attend at the lecture time for which they are enrolled.

Class Test 2 will be held in the first hour of the two hour lecture in Week 9.

### **Extension**

No extensions will be granted. Students who do not sit for the test will be awarded a mark of 0 for the test, except for cases in which an application for special consideration is made and approved.

### **Topics Tested Class**

Tests will be based on the following lecture topics from the Unit Schedule:

Test 1

Techniques: Weeks 1, 2, 3

Elements: Weeks 2, 3

Test 2

Techniques: Weeks 4, 5, 6

Elements: Weeks 4, 6, 7

Full details of the Class Tests will be given on iLearn. The 2 Class Tests each count 10% of the final assessment. A list of basic formulae available on iLearn will be supplied to students.

On successful completion you will be able to:

- 1. Understand the concepts of present value and future value and apply to problems involving single payments.
- 2. Apply the concepts of present value and future value to problems involving annuities.
- 3. Use the concepts from 1. and 2. to price mortgage loans, bonds and debentures and other financial instruments.
- 4. Describe the functions of the Australian financial system and the financial institutions, financial instruments and financial markets which form part of it.

## Final Examination

Due: **University Examination Period**

Weighting: **60%**

### Examination conditions

The closed book final examination will contain questions from all techniques and all elements lectures. It will be a three hour written paper with 10 minutes reading time. Part A will consist of 45 multiple choice questions on both techniques and elements. Part B will contain 3 questions requiring the application of the techniques section to practical problems.

### What is required to complete the unit satisfactorily

To be eligible for a passing grade in this unit, a pass is required in the final examination as well as all other assessments in this unit.

On successful completion you will be able to:

- 1. Understand the concepts of present value and future value and apply to problems involving single payments.
- 2. Apply the concepts of present value and future value to problems involving annuities.
- 3. Use the concepts from 1. and 2. to price mortgage loans, bonds and debentures and other financial instruments.
- 4. Describe the functions of the Australian financial system and the financial institutions, financial instruments and financial markets which form part of it.

## Delivery and Resources

### Learning and Teaching Activities

There are 3 hours of face-to-face teaching per week consisting of one 2 hour lecture and one 1 hour tutorial. Class time can be found at MQC Student Portal:<http://student.mqc.edu.au>

### Lectures

The Elements lecture is held in the first hour of the 2 hour class. The Techniques lecture is held in the second hour of the 2 hour class. The lecture notes for both techniques lectures and elements lectures are available from ACST101 iLearn. A copy should be brought to each lecture.

### Tutorials

Tutorials which are held weekly commence in the second week of the semester. To prepare for each weekly tutorial, print a copy of the Tutorial Exercises from iLearn and attempt the first few questions eg for the Week 2 tutorial you should attempt Q1 to Q4 of the Tutorial Exercises on Week 1. Check on eStudent for the location of your tutorial. Some tutorial rooms may have been changed since you enrolled. You must attend your allocated tutorial.

### Required and Recommended Texts and/or Materials

Refer to the booklist for this unit. Although this unit usually prescribe two textbooks, focus should be placed more on the materials delivered in Lectures. Namely the lecture notes and tutorial questions.

## **Technology Used and Required**

### **Calculators**

Calculators will be allowed in the class tests and the final examination but a clear indication of the steps involved in every calculation must be shown. Non-programmable calculators with no text-retrieval capacity are allowed. Calculators that have a full alphabet on the keyboard are not allowed. Graphics calculators are not allowed. You will need a calculator which has  $xy$  or  $^x$ ,  $1/x$  and  $\log$  or  $\ln$  functions, and a memory.

### **Unit Web Page**

Course material is available on learning management system (iLearn). The web page for this unit can be found at <http://ilearn.mq.edu.au> The following are available on the website:

1. Lecture notes and Revision Exercises for "Techniques".
2. Lecture notes and internet exercises for "Elements".
3. Tutorial Exercises and solutions.
4. Quizzes.
5. Class Test solutions for the past two semesters and the current semester.
6. Final Examination papers and solutions.

## **Teaching and Learning Strategy**

This unit is taught via lectures and tutorials. Tutorial exercises will be provided for each tutorial so that you can practise applying the results developed in lectures. Weekly online quizzes will encourage you to revise the material regularly. Understanding of concepts is required rather than memorisation of formulae. It is essential that you work steadily and consistently over the whole semester. Each topic builds on the previous one. It is extremely difficult to catch up if you fall behind.

### **Support Class**

For information on the support classes, please refer to iLearn. Attendance is NOT compulsory however it is strongly encouraged that students utilise these classes to ask questions in relation to the unit material.

### **What has changed?**

There hasn't been any major change to the teaching material in this unit since Session 1 of 2014.

## Unit Schedule

Week	Elements and Class Tests	Techniques
1	Unit Overview	Simple interest & simple discount
2	Element Overview	Compound interest 1
3	Banks	Compound interest 2
4	RBA, Bank regulation	Annuities 1
5	Class test 1	Annuities 2
6	Non-bank institutions 1	Annuities 3
7	Non-bank institutions 2	Mortgage loans
8	Corporate finances and instruments	Flat rate loans, NPV, IRR
9	Class test 2	Bonds & debentures
10	Government finances and instruments	Tax on bonds
11	Derivatives	Varying annuities
12	Techniques revision	Sinking funds and capitalised cost
13	Elements revision	Techniques revision

## Learning and Teaching Activities

### Lectures

The first hour is elements and the second hour is techniques

### Tutorials

Tutorials will revise concepts presented in lectures. Students are given exercises which should be attempted before the tutorial.

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central](#). Students should be aware of the following policies in particular with regard to Learning and Teaching:

Academic Honesty Policy [http://mq.edu.au/policy/docs/academic\\_honesty/policy.html](http://mq.edu.au/policy/docs/academic_honesty/policy.html)

Assessment Policy <http://mq.edu.au/policy/docs/assessment/policy.html>

Grading Policy <http://mq.edu.au/policy/docs/grading/policy.html>

Grade Appeal Policy <http://mq.edu.au/policy/docs/gradeappeal/policy.html>

Grievance Management Policy [http://mq.edu.au/policy/docs/grievance\\_management/policy.html](http://mq.edu.au/policy/docs/grievance_management/policy.html)

Disruption to Studies Policy [http://www.mq.edu.au/policy/docs/disruption\\_studies/policy.html](http://www.mq.edu.au/policy/docs/disruption_studies/policy.html) *The Disruption to Studies Policy is effective from March 3 2014 and replaces the Special Consideration Policy.*

In addition, a number of other policies can be found in the [Learning and Teaching Category](#) of 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/support/student\\_conduct/](https://students.mq.edu.au/support/student_conduct/)

## Results

Results shown in *iLearn*, 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).

## 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)

## IT Help

For help with University computer systems and technology, visit <http://informatics.mq.edu.au/help/>.

When using the University's IT, you must adhere to the [Acceptable Use 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

- 2. Apply the concepts of present value and future value to problems involving annuities.
- 3. Use the concepts from 1. and 2. to price mortgage loans, bonds and debentures and other financial instruments.

#### Assessment tasks

- Weekly Quizzes
- Class Tests
- Final Examination

#### Learning and teaching activities

- The first hour is elements and the second hour is techniques
- Tutorials will revise concepts presented in lectures. Students are given exercises which should be attempted before the tutorial.

### Capable of Professional and Personal Judgement and Initiative

We want our graduates to have emotional intelligence and sound interpersonal skills and to demonstrate discernment and common sense in their professional and personal judgement. They will exercise initiative as needed. They will be capable of risk assessment, and be able to handle ambiguity and complexity, enabling them to be adaptable in diverse and changing environments.

This graduate capability is supported by:

#### Learning outcomes

- 1. Understand the concepts of present value and future value and apply to problems involving single payments.
- 2. Apply the concepts of present value and future value to problems involving annuities.
- 3. Use the concepts from 1. and 2. to price mortgage loans, bonds and debentures and other financial instruments.

## Assessment tasks

- Weekly Quizzes
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- Final Examination

## Learning and teaching activities

- The first hour is elements and the second hour is techniques
- Tutorials will revise concepts presented in lectures. Students are given exercises which should be attempted before the tutorial.

## Commitment to Continuous Learning

Our graduates will have enquiring minds and a literate curiosity which will lead them to pursue knowledge for its own sake. They will continue to pursue learning in their careers and as they participate in the world. They will be capable of reflecting on their experiences and relationships with others and the environment, learning from them, and growing - personally, professionally and socially.

This graduate capability is supported by:

## Learning outcomes

- 2. Apply the concepts of present value and future value to problems involving annuities.
- 3. Use the concepts from 1. and 2. to price mortgage loans, bonds and debentures and other financial instruments.
- 4. Describe the functions of the Australian financial system and the financial institutions, financial instruments and financial markets which form part of it.

## Assessment tasks

- Weekly Quizzes
- Class Tests
- Final Examination

## Learning and teaching activities

- The first hour is elements and the second hour is techniques
- Tutorials will revise concepts presented in lectures. Students are given exercises which should be attempted before the tutorial.

## 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**

- 1. Understand the concepts of present value and future value and apply to problems involving single payments.
- 2. Apply the concepts of present value and future value to problems involving annuities.
- 3. Use the concepts from 1. and 2. to price mortgage loans, bonds and debentures and other financial instruments.

## **Assessment tasks**

- Weekly Quizzes
- Class Tests
- Final Examination

## **Learning and teaching activities**

- The first hour is elements and the second hour is techniques
- Tutorials will revise concepts presented in lectures. Students are given exercises which should be attempted before the tutorial.

## **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**

- 1. Understand the concepts of present value and future value and apply to problems involving single payments.
- 2. Apply the concepts of present value and future value to problems involving annuities.
- 3. Use the concepts from 1. and 2. to price mortgage loans, bonds and debentures and other financial instruments.

## **Assessment tasks**

- Weekly Quizzes

- Class Tests
- Final Examination

## **Learning and teaching activities**

- The first hour is elements and the second hour is techniques
- Tutorials will revise concepts presented in lectures. Students are given exercises which should be attempted before the tutorial.

## **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**

- 1. Understand the concepts of present value and future value and apply to problems involving single payments.
- 2. Apply the concepts of present value and future value to problems involving annuities.
- 3. Use the concepts from 1. and 2. to price mortgage loans, bonds and debentures and other financial instruments.

## **Assessment tasks**

- Weekly Quizzes
- Class Tests
- Final Examination

## **Learning and teaching activities**

- The first hour is elements and the second hour is techniques
- Tutorials will revise concepts presented in lectures. Students are given exercises which should be attempted before the tutorial.

## **Effective Communication**

We want to develop in our students the ability to communicate and convey their views in forms effective with different audiences. We want our graduates to take with them the capability to read, listen, question, gather and evaluate information resources in a variety of formats, assess, write clearly, speak effectively, and to use visual communication and communication technologies as appropriate.

This graduate capability is supported by:

## Learning outcome

- 4. Describe the functions of the Australian financial system and the financial institutions, financial instruments and financial markets which form part of it.

## Assessment tasks

- Weekly Quizzes
- Class Tests
- Final Examination

## Learning and teaching activities

- The first hour is elements and the second hour is techniques
- Tutorials will revise concepts presented in lectures. Students are given exercises which should be attempted before the tutorial.

## Engaged and Ethical Local and Global citizens

As local citizens our graduates will be aware of indigenous perspectives and of the nation's historical context. They will be engaged with the challenges of contemporary society and with knowledge and ideas. We want our graduates to have respect for diversity, to be open-minded, sensitive to others and inclusive, and to be open to other cultures and perspectives: they should have a level of cultural literacy. Our graduates should be aware of disadvantage and social justice, and be willing to participate to help create a wiser and better society.

This graduate capability is supported by:

## Learning outcome

- 4. Describe the functions of the Australian financial system and the financial institutions, financial instruments and financial markets which form part of it.

## Assessment tasks

- Weekly Quizzes
- Class Tests
- Final Examination

## Learning and teaching activities

- The first hour is elements and the second hour is techniques
- Tutorials will revise concepts presented in lectures. Students are given exercises which should be attempted before the tutorial.

## Socially and Environmentally Active and Responsible

We want our graduates to be aware of and have respect for self and others; to be able to work

with others as a leader and a team player; to have a sense of connectedness with others and country; and to have a sense of mutual obligation. Our graduates should be informed and active participants in moving society towards sustainability.

This graduate capability is supported by:

## **Learning outcome**

- 4. Describe the functions of the Australian financial system and the financial institutions, financial instruments and financial markets which form part of it.

## **Assessment tasks**

- Weekly Quizzes
- Class Tests
- Final Examination

## **Learning and teaching activities**

- The first hour is elements and the second hour is techniques
- Tutorials will revise concepts presented in lectures. Students are given exercises which should be attempted before the tutorial.