ACTL20002
Financial Mathematics II

SUBJECT GUIDE

Semester 2, 2013

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Subject Outline

Introduction
This is a 12.5 point subject, with two lecture hours and one tutorial hour per week. We will cover extensive course material and you are advised that you must keep up-to-date with work. In particular, you should complete tutorial questions on a weekly basis and make a genuine attempt at all parts of the assessment.

Subject Aims
The overall aim of this subject is to provide a thorough grounding in the theory and concepts of compound interest, and to develop a proficiency in the application of these concepts in a variety of practical situations when the timing and amounts of cash flows are known.

Prerequisites
Please refer to the 2013 Course & Subject Handbook.

Learning Outcomes

Subject Objectives
On successful completion of this subject you should be able to:
- Perform compound interest calculations relating to financial assets, including the calculation of price and yield with and without allowance for default;
- Calculate rates of return on investment portfolios using methods employed by actuaries;
- Calculate duration and convexity of cash flow and demonstrate an understanding of the principles and limitations of immunisation;
- Show an understanding of spot rates, forward rates and the term structure of interest rates;
- Analyse compound interest problems at a more advanced level than in ACTL20001 Financial Mathematics I;
- Show an understanding of simple stochastic models for investment returns;
- Show an understanding of the application of simple time series models for investment returns;
- Apply pre-requisite mathematical and statistical concepts to the solution of problems on the above topics
Generic Skills

In this subject you will have the opportunity to develop important generic skills. These include the high level of development in written communication; problem solving; application of theory to practice; synthesis of data and other information; use of computer software.

Contact Details

Lecturer Contact Details

Zhuo Jin:

Email: zjin@unimelb.edu.au
Room: 318, FBE Building
Phone: 8344 4655
Consultation Hours: 11:00am-12:00pm Tuesday & 9:45am-10:45am Thursday

Tutors

Andrew Bird, Jing Fang, Peter Raymond

Email Protocol

While academic staff endeavor to address queries received via email, it is more appropriate to resolve substantive questions face-to-face during normal consultation hours. With this in mind, we encourage all students to familiarize themselves with the consultation hours offered by the lecturer in this subject.

Please note that we are only able to respond to student emails coming from a University email address. Please do not use personal email addresses such as Yahoo, Hotmail or even business email addresses. Emails from non-University email addresses may be filtered by the University’s spam filter, which means that we may not receive your email. All correspondence relating to this subject will only be sent to your University email address. Note that you must first activate your University email address before you can send or receive emails at that address. You can activate your email account at this link: http://accounts.unimelb.edu.au/.
Lectures and Tutorials

Lecture Times

L1/01  Tuesday  10:00am - 11:00am  Th: Redmond Barry-Medley Theatre
L2/01  Thursday  12:00pm - 1:00pm  Th: Redmond Barry-Latham Theatre

Tutorial commence in week 1 of semester

Enrolling in Tutorials Using Alloc8

Alloc8 is the University’s online tutorial allocation system. You must enrol in a tutorial for this subject using Alloc8 as soon as possible. Late enrolment into tutorials is handled by the Economics & Commerce Undergraduate Student Centre. More information about Alloc8, including cut-off dates and a link to the login page, can be found on the Faculty’s website:

http://www.ecom.unimelb.edu.au/students/undergrad/alloc.html

Assessment

Assessment Overview

Your assessment for this subject comprises the following:

<table>
<thead>
<tr>
<th>Assessment Task</th>
<th>Due</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment 1</td>
<td>To be advised</td>
<td>10%</td>
</tr>
<tr>
<td>Mid-semester exam</td>
<td>Week 7, subject to confirmation, in lieu of a lecture</td>
<td>10%</td>
</tr>
<tr>
<td>Assignment 2</td>
<td>To be advised</td>
<td>10%</td>
</tr>
<tr>
<td>End-of-semester exam</td>
<td>Assessment period</td>
<td>70%</td>
</tr>
</tbody>
</table>

Assignment 1 & 2

- Questions for each assignment will be available in the LMS under “Assessments” at least two weeks before the corresponding due date. There is also a coversheet for each assignment.
- Type up all your answers (and student number and name) and print them out. Neat handwriting is also acceptable. Your pages should be single sided and
stapled together. You should also staple the cover sheet to the front of your submission.

**Mid-semester exam**

- This is a closed-book exam. The total time allowed is 50 minutes including 5 minutes reading time.

- This exam contributes 10% to the assessment in this subject.

- Electronic calculators may be used. However, calculators that can be programmed to store or retrieve text or formulae are not permitted. Also, calculators that have been tampered with since manufacture are prohibited. In addition to the above restriction, the calculator must also appear on the following list:
  
  - Casio FX82 (with or without any suffix)
  - Casio FX83 (with or without any suffix)
  - Casio FX85 (with or without any suffix)
  - Sharp EL531 (with or without any suffix)
  - Texas Instruments BA II Plus (with or without any suffix)
  - Texas Instruments TI-30 (with or without any suffix)

  It is the responsibility of the student to ensure any calculator they use complies with University requirements.

  These restrictions of calculators also apply to the end-of-semester examination.

**End-of-semester exam**

- This is a two-hour closed-book exam. The reading time is 15 minutes. This exam contributes 70% to the assessment in this subject.

- Electronic calculators may be used subject to the same restrictions that apply to the mid-term examination described above.

- Satisfactory completion of this subject requires a pass in the end of semester examination.

**Using the Assignment Tool**

The Assignment Tool allows you to submit your assignment to your lecturer online from home or from any of the student labs on campus.
During the course of the semester, you may be asked to submit assignment(s) in electronic format into the Assignment Tool. You can access the Assignment Tool by clicking on Assignment Tool in the navigation menu from the LMS page for this subject.

However, it is more likely, in this subject, that you will be asked to submit your assignment in hard copy (instead of submitting electronically) at the Commerce Students’ Centre. Your lecturer will let you know which submission method to use before each assignment period commences. When submitting an assignment in hard copy, you must first print out an assignment cover sheet via the Assignment Tool, then complete the cover sheet and attach it to your assignment before you hand it into the Commerce Students’ Centre.

Further instructions on using the Assignment Tool can be found here:
http://tlu.ecom.unimelb.edu.au/students/elearning/assignment_tool.html

Plagiarism and Collusion

Presenting material from other sources without full acknowledgement (referred to as plagiarism) is heavily penalised. Penalties for plagiarism can include a mark of zero for the piece of assessment or a fail grade for the subject.

Plagiarism is the presentation by a student of an assignment identified as his or her own work even though it has been copied in whole or in part from another student’s work, or from any other source (e.g. published books, web-based materials or periodicals), without due acknowledgement in the text.

Collusion is the presentation by a student of an assignment as his or her own work when it is, in fact, the result (in whole or in part) of unauthorised collaboration with another person or persons. Both the student presenting the assignment and the student(s) willingly supplying unauthorised material are considered participants in the act of academic misconduct.


The Teaching and Learning Unit has developed a web-based ‘Academic Honesty Module’ that allows you to learn more about and test your knowledge of plagiarism and collusion. You are strongly encouraged to complete this module, which can be accessed at:

http://tlu.ecom.unimelb.edu.au/AcademicHonestyTest/index.cfm

Late Submission

Late submissions must be accompanied by a completed Request for Special Consideration form. The form must be handed to the Undergraduate Student Centre.
Late assignments, where approval for late submission has not been given, will be penalised at the rate of 10% of the total mark per day, for up to 10 days, at which time a mark of zero will be given.

**Special Consideration**

Students who have been significantly affected by illness or other serious circumstances during the semester may be eligible to apply for Special Consideration.

The following website contains detailed information relating to who can apply for Special Consideration and the process for making an application:

http://www.ecom.unimelb.edu.au/students/special/

**Group Work**

Working in groups can sometimes be more difficult than working individually. However, team-work and organisational skills associated with group work are highly valued by employers. With careful management and ongoing communication, you can have a successful and rewarding experience working in a team.

You should exchange names, phone numbers, and email addresses with your group members straight away.

If you have difficulty with a member of your group, you should contact your lecturer as soon as possible. Do not leave issues unresolved until just before or after your group assignment is due.

**All students within your group will be given the same mark unless you have raised an issue during the assignment period. Students who do not contribute to a group assignment may be allocated a lower mark or assigned a mark of zero.**

**Further Assistance**

If you need assistance during the semester, short questions can be asked during lectures and/or tutorials. For longer discussions you will need to see the lecturer-in-charge.

**Lecturer Consultations**

Please refer to page 4 for details of times and location
Specimen Exam and Practical Exercises

Weekly practical exercises and a specimen exam paper are included in the workbook. Solutions for the practical exercises will be available on the LMS approximately 10 days after the lecture to which they relate.

Teaching & Learning Unit

The Teaching and Learning Unit offers a wide range of support services to students. If you are having any difficulty in studying for this subject you could arrange a consultation with the Unit’s learning skills specialist. The learning skills specialist can review your current approaches to study and offer advice on how to adjust to the demands of tertiary study. If you are a student from a non-English speaking background there is an English as a Second Language specialist who is available to help with your written work. Both of these specialists are available for face-to-face consultations or electronically through email. Go to the Faculty office to arrange for consultations or contact the specialists electronically through the Teaching and Learning Unit web page. The web page also contains a wide variety of study skills topics and information sheets for students, and a timetable of up-coming events, including focussed workshops, designed to support Economics and Commerce students in their study.

Please visit the TLU’s website – http://tlu.ecom.unimelb.edu.au/.

Make use of the Teaching and Learning Unit. It is there to help.

Other Information

Credit for Professional Examinations

University of Melbourne students seeking exemption for corresponding examinations of the Institute of Actuaries of Australia should note that performance in assignments and the mid-semester test is not taken into account. Recommendation for exemption in Subject CT1 is based on the combined end-of-semester examination results of ACTL20001 Financial Mathematics I and ACTL20002 Financial Mathematics II. The standard required broadly corresponds to a score of 73%. Please refer to the latest Students’ Guide (which can be downloaded from the homepage of the Centre for Actuarial Studies) for more information.

Computers

Some assignment questions may require the use of Excel. Students may use personal PCs with this package installed or on-campus facilities.