FINM7041
Applied Derivatives

Course Description

This unit is designed to further students' understanding of futures and options contracts and their use in managing risk. It builds upon material covered in FINM1001/FINM7006 (Foundations of Finance) and STAT7055 (Financial Statistics). FINM7041 provides an overview of options, futures, forwards and swaps on a range of underlying assets/commodities including stocks, interest rates, foreign exchange as well as more exotic instruments. The models used for pricing these instruments will be examined as well as techniques used for risk management.

<table>
<thead>
<tr>
<th>Semester and Year</th>
<th>S2 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course URL</td>
<td><a href="http://programsandcourses.anu.edu.au/2017/course/FINM7041">http://programsandcourses.anu.edu.au/2017/course/FINM7041</a></td>
</tr>
<tr>
<td>Mode of Delivery</td>
<td>On campus – Lectures and Tutorials</td>
</tr>
<tr>
<td>Prerequisites</td>
<td>FINM7006, BUSN7008 and STAT7055</td>
</tr>
<tr>
<td>Course Convener</td>
<td>Dr. Ding Ding</td>
</tr>
<tr>
<td>Office Location</td>
<td>Room 4.17, CBE Building</td>
</tr>
<tr>
<td>Phone</td>
<td>02 6125 7286</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:ding.ding@anu.edu.au">ding.ding@anu.edu.au</a></td>
</tr>
<tr>
<td>Consultation hours</td>
<td>Wednesdays 15:00 - 17:00</td>
</tr>
<tr>
<td>Bio and research interests</td>
<td>Ding Ding earned her Ph.D., MFE, and Honours B.Sc. from the University of Toronto. In addition to being interested in finance academically, she has worked as a risk management economist and also a corporate finance consultant.</td>
</tr>
<tr>
<td>Student Administrators</td>
<td>Tracy Skinner</td>
</tr>
<tr>
<td></td>
<td>Room 4.50, CBE Building 26C</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:tracy.skinner@anu.edu.au">tracy.skinner@anu.edu.au</a></td>
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</table>


COURSE OVERVIEW

Course Learning Outcomes
On satisfying the requirements for this course, students will have the knowledge and skills to:

- Explain in detail how options, futures, forwards, and swaps can be used on a range of underlying assets/commodities;
- Understand and be able to demonstrate the appropriate use of option trading strategies;
- Demonstrate how we use derivatives for a range of assets/commodities including stocks, interest rates, foreign exchange as well as exotic instruments and weather and electricity derivatives;
- Explain in detail and be able to demonstrate various models to price forward, futures, swap and option contracts; and,
- Use these pricing models for risk management.

Research-Led Teaching
Students undertaking this course will be imparted with the necessary skills for industry based research. This will include involving students in critical analysis of industry based problems.

Technology, Software, Equipment
There is no required software for this course. Students will need a scientific non-programmable calculator.

Requisites
To enrol in this course you must have completed FINM7006, BUSN7008 and STAT7055.

Staff Feedback
Students will be given feedback in the following forms in the course: six quizzes, a mid-semester exam, and a final exam.

Student Feedback
All CBE courses are evaluated using Student Experience of Learning and Teaching (SELT) surveys, administered by Planning and Statistical Services at the ANU. These surveys are offered online, and students will be notified via email to their ANU address when surveys are available in each course. Feedback is used for course development so please take the time to respond thoughtfully. Course feedback is anonymous and provides the Colleges, University Education Committee and Academic Board with opportunities to recognise excellent teaching and to improve courses across the university. For more information on student surveys at ANU and reports on feedback provided on ANU courses, visit:

- http://unistats.anu.edu.au/surveys/selt/students/; and,
## COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Activities</th>
<th>Student Preparation</th>
<th>Assessment Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wk 1</td>
<td>Course Overview and Extended Analysis of Forwards, Futures and Options Contracts</td>
<td>Lecture 1 (Lecture Only; no workshop nor tutorial)</td>
<td>Lecture Notes 1 Hull et al Ch. 1 &amp; 2</td>
<td>No tutorial</td>
</tr>
<tr>
<td>Wk 2</td>
<td>Hedging Strategies Using Futures</td>
<td>Lecture 2 Tutorial 1</td>
<td>Lecture Notes 2 Hull et al Ch. 3 &amp; 5</td>
<td>Tutorial 1 Questions Quiz 1</td>
</tr>
<tr>
<td>Wk 3</td>
<td>Interest Rate Contracts and Swaps</td>
<td>Lecture 3 Tutorial 2</td>
<td>Lecture Notes 3 Hull et al Ch. 4 &amp; 7</td>
<td>Tutorial 2 Questions Quiz 2</td>
</tr>
<tr>
<td>Wk 4</td>
<td>Options and Options Trading Strategies</td>
<td>Lecture 4 Tutorial 3</td>
<td>Lecture Notes 4 Hull et al Ch. 9, 10 &amp; 11</td>
<td>Tutorial 3 Questions Quiz 3</td>
</tr>
<tr>
<td>Wk 5</td>
<td>Binomial Model for Pricing Options</td>
<td>Lecture 5 Tutorial 4</td>
<td>Lecture Notes 5 Hull et al Ch. 12</td>
<td>Tutorial 4 Questions Quiz 4</td>
</tr>
<tr>
<td>Wk 6</td>
<td>Black-Scholes Model for Pricing Options</td>
<td>Lecture 6 Tutorial 5</td>
<td>Lecture Notes 6 Hull et al Ch. 13</td>
<td>Tutorial 5 Questions</td>
</tr>
</tbody>
</table>

### September 5 – 15, 2017 Non-Teaching Period

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Activities</th>
<th>Student Preparation</th>
<th>Assessment Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wk 7</td>
<td>Index and Foreign Exchange Options</td>
<td>Lecture 7 Tutorial 6</td>
<td>Lecture Notes 7 Hull et al Ch. 15</td>
<td>Tutorial 6 Questions</td>
</tr>
<tr>
<td>Wk 8</td>
<td>Options on Futures Contracts</td>
<td>Lecture 8 Tutorial 7</td>
<td>Lecture Notes 8 Hull et al Ch. 16</td>
<td>Tutorial 7 Questions</td>
</tr>
<tr>
<td>Wk 9</td>
<td>The Greek Letters</td>
<td>Lecture 9 Tutorial 8</td>
<td>Lecture Notes 9 Hull et al Ch. 17</td>
<td>Tutorial 8 Questions</td>
</tr>
<tr>
<td>Wk 10</td>
<td>Exotic Options and other Non-standard Products</td>
<td>Lecture 10 Tutorial 9</td>
<td>Lecture Notes 10 Hull et al Ch. 22</td>
<td>Tutorial 9 Questions Quiz 5</td>
</tr>
<tr>
<td>Wk 11</td>
<td>Credit, Weather, Energy and Insurance Derivatives and Derivatives Mishaps and What We Can Learn From Them</td>
<td>Lecture 11 Tutorial 10</td>
<td>Lecture Notes 11 Hull et al Ch. 23, 24 &amp; 25</td>
<td>Tutorial 10 Questions Quiz 6</td>
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</tbody>
</table>
COURSE ASSESSMENT

Assessment Summary

<table>
<thead>
<tr>
<th>Item</th>
<th>Title</th>
<th>Value</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In-Tutorial Quizzes</td>
<td>15%</td>
<td>See Course Schedule for details</td>
</tr>
<tr>
<td>2</td>
<td>Mid-Semester Exam</td>
<td>25%</td>
<td>TBA by Central Scheduling (Week 6 or 7)</td>
</tr>
<tr>
<td>3</td>
<td>Final Examination</td>
<td>60%</td>
<td>TBA by Central Scheduling</td>
</tr>
</tbody>
</table>

Assessment Task 1: In-Tutorial Quizzes (15%)

Details of task:
- 6 quizzes held within tutorials on the weeks specified in the Course Schedule. (Unless otherwise stated by the lecturer).
- The quizzes will be 10 - 15 minutes in duration, at the end of the tutorial.
- Students MUST sit the quiz in the tutorial they are enrolled in; otherwise, the quiz will not count.
- A missed quiz is given a mark of 0. No exceptions are allowed.
- Students’ best 5 marks will count towards 15% of their overall course grade.
- The content for the quizzes will be limited to the material taught in the week prior to the scheduled quiz.
- A number of quizzes will be of a difficulty similar to exam questions to give students practice at attempting exam type questions under examination conditions.
- The estimated return date is 1 week after the quiz is held.

Assessment Task 2: Mid-Semester Exam (25%)

Details of task:
The 2-hour mid-semester examination will be based on material covered from Week 1 up to and including the week before the week of the exam. It is worth 25% of the overall course grade. The exam is closed-book, cumulative, and comprehensive; it will include a mixture of theoretical and numerical questions. The exam will be scheduled for either Week 6 or 7 and is centrally timetabled by ANU Timetabling Division. The estimated return date is 2 weeks after the mid-semester exam.

Mid-semester exams are redeemable and optional for this course. No deferred mid-semester examinations will be offered, instead the weighting will be moved to the final exam.

Assessment Task 3: Final Examination (60%)

Details of task:
The final examination will be based on all the material covered throughout the duration of the semester. The final examination is worth 60% of the overall course grade. The exam will include a mixture of theoretical and numerical questions. Students will be provided with further details regarding the exam as it approaches.

Extensions and Penalties
Quizzes and the mid-semester exam are not redeemable. Alternate sittings of the quiz and mid-semester exams are not possible for any reason. Missed assessments will receive a mark of zero.

Scaling
Your final mark for the course will be based on the raw marks allocated for each assignment or examination. However, your final mark may not be the same number as produced by that formula, as marks may be scaled. Any scaling applied will preserve the rank order of raw
marks (i.e. if your raw mark exceeds that of another student, then your scaled mark will exceed or equal the scaled mark of that student), and may be either up or down.

**READING LISTS**

**Prescribed Texts and Reference Materials**


Students are required to read Pages 105-126 of the CFA Standards of Practice Handbook, Standard IV: Duties to Employers. This content will be discussed in Lecture 12. This document can be found at:


**COMMUNICATION**

**Email**

If necessary, the lecturer for this course will contact students on their official ANU student email address. Information about your enrolment and fees from the Registrar and Student Services’ office will also be sent to this email address.

Students can contact the lecturer via email (ding.ding@anu.edu.au). I will reply to legitimate email inquiries from students within two working days. If you do not receive a reply within this period, resubmit your question(s). Please note that emails in the last 24 hours before an examination will NOT be answered.

Each email message must include in the “subject” the course number (FINM7041S1) and a concise and clear statement of purpose — otherwise it will be deleted, along with spam messages. In each email, please include your full name and your student number in your message.

Where a question cannot be answered easily or briefly with a reply email, I will indicate to the student that s/he should see me during the announced consultation hours. For example, explanation of concepts or the like will not be answered via email under any circumstance. I strongly encourage you to ask questions during class or consultation hours such that confusion could be best avoided.

**Announcements**

Students are expected to check the Wattle site for announcements about this course, e.g. changes to timetables or notifications of cancellations. Notifications of emergency cancellations of lectures or tutorials will be posted on the door of the relevant room.

**Course URLs**

More information about this course may be found on:

- the College of Business and Economics website ([http://cbe.anu.edu/courses](http://cbe.anu.edu/courses)) and
- Wattle ([https://wattle.anu.edu.au](https://wattle.anu.edu.au)), the University’s online learning environment. Log on to Wattle using your student number and your ISIS password.
Enrolment in tutorials will be completed online using the CBE Electronic Teaching Assistant (ETA). To enrol, follow these instructions:

1. Go to http://eta.fec.anu.edu.au
2. You will see the Student Login page. To log into the system, enter your University ID (your student number) and password (your ISIS password) in the appropriate fields and hit the Login button.
3. Read any news items or announcements.
4. Select "Sign Up!" from the left-hand navigation bar.
5. Select your courses from the list. To select multiple courses, hold down the control key. On PCs, this is the Ctrl key; on Macs, it is the ⌘ key. Hold this key down while selecting courses with the mouse. Once courses are selected, hit the SUBMIT button.
6. A confirmation of class enrolments will be displayed. In addition, an email confirmation of class enrolments will be sent to your student account.
7. For security purposes, please ensure that you click the LOGOUT link on the confirmation page, or close the browser window when you have finished your selections.
8. If you experience any difficulties, please contact the School Office (see page 1 for contact details).
9. Students will have until (time TBA in class) to finalise their enrolment in tutorials. After this time, students will be unable to change their tutorial enrolment.

POLICIES

The University offers a number of support services for students. Information on these is available online from http://students.anu.edu.au/studentlife/

ANU has educational policies, procedures and guidelines, which are designed to ensure that staff and students are aware of the University’s academic standards, and implement them. You can find the University’s education policies and an explanatory glossary at: http://policies.anu.edu.au/

Students are expected to have read the Student Academic Integrity Policy before the commencement of their course.

Other key policies include:

- Student Assessment (Coursework)
- Student Surveys and Evaluations

Required Resources

Commonwealth supported students and domestic full-fee paying students generally must be able to complete the requirements of their program of study without the imposition of fees that are additional to the student contribution amount or tuition fees.

Provided that its payment is in accordance with the Act, a fee is of a kind that is into any one or more of the following categories:

(a) It is a charge for a good or service that is not essential to the course of study.
(b) It is a charge for an alternative form, or alternative forms, of access to a good or service that is an essential component of the course of study but is otherwise made readily available at no additional fee by the higher education provider.
(c) It is a charge for an essential good or service that the student has the choice of acquiring from a supplier other than the higher education provider and is for:
   (i) equipment or items which become the physical property of the student and are not consumed during the course of study; or
   (ii) food, transport and accommodation costs associated with the provision of field trips that form part of the course of study.
(d) It is a fine or a penalty provided it is imposed principally as a disincentive and not in order to raise revenue or cover administrative costs.

**Examination material or equipment**
A non-programmable calculator and an approved paper-based dictionary may be allowed in the exams.