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>S1 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>Thursdays 8am-10am</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>Patty Penm</td>
</tr>
<tr>
<td></td>
<td>Room 4.48, CBE Building 26C</td>
</tr>
<tr>
<td></td>
<td><a href="mailto:patricia.penm@anu.edu.au">patricia.penm@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.

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 <em>et al</em> Ch. 1 &amp; 2</td>
<td></td>
</tr>
<tr>
<td>Wk 2</td>
<td>Hedging Strategies Using Futures</td>
<td>Lecture 2 Tutorial 1</td>
<td>Lecture Notes 2 Hull <em>et al</em> Ch. 3 &amp; 5</td>
<td>Tutorial 1 Questions</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 <em>et al</em> Ch. 4 &amp; 7</td>
<td>Tutorial 2 Questions Quiz 1</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 <em>et al</em> Ch. 9, 10 &amp; 11</td>
<td>Tutorial 3 Questions</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 <em>et al</em> Ch. 12</td>
<td>Tutorial 4 Questions Quiz 2</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 <em>et al</em> Ch. 13</td>
<td>Tutorial 5 Questions Quiz 3</td>
</tr>
</tbody>
</table>

### April 3 – 14, 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 <em>et al</em> 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 <em>et al</em> Ch. 16</td>
<td>Tutorial 7 Questions Assignment Due on Friday</td>
</tr>
<tr>
<td>Wk 9</td>
<td>The Greek Letters</td>
<td>Lecture 9 Tutorial 8</td>
<td>Lecture Notes 9 Hull <em>et al</em> Ch. 17</td>
<td>Tutorial 8 Questions Quiz 4</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 <em>et al</em> 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 <em>et al</em> Ch. 23, 24 &amp; 25</td>
<td>Tutorial 10 Questions Quiz 6</td>
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</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>Assignment</td>
<td>25%</td>
<td>1pm, Friday of Week 8</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.
- The quizzes will be 10 - 15 minutes in duration, at the end of the tutorial.
- Students are required to prepare worked solutions to tutorial questions, bring these solutions to tutorials, and be prepared to participate in tutorial discussions.
- Students will be required to sit 6 in-tutorial quizzes throughout the semester.
- Students MUST sit the quiz in the tutorial they are enrolled in; otherwise, the quiz will not count.
- These quizzes will be run according to the Course Schedule (unless otherwise stated by the lecturer).
- The content for the quizzes will be limited to the required material for the tutorial in which it is held.
- Students' best 5 marks will count towards 15% of their overall course grade.
- 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: Assignment (25%)
Details of task:
- This assignment accounts for 25% of students' final grade for FINM7041.
- The assignment is to be undertaken in groups of 5 students enrolled in FINM7041 only.
- Students enrolled are to complete all questions for the assignment.
- Each assignment should include the coversheet located in the assignment folder on Wattle.
- All questions regarding the assignment must be directed to the lecturer, as all tutors have been told not to answer questions. This will ensure fairness as all students will receive the same advice when asking questions.
- The assignment is due at 1pm on the Friday of Week 8.
- Only one printed copy per group of the assignment is to be submitted in the assignment boxes outside the RSFAS School Office. In addition, an electronic copy of your assignment (again, one submission per group) should also be filed via the Turnitin folder on the course Wattle site by the deadline.
- The assignments will be returned at the end of Week 11, 3 weeks after submission.
- Further details on the assignment will be provided during the lecture in Week 3.
- **PLEASE NOTE**: Late submission of assignments will NOT be accepted. If a group submits its assignment after the listed due date for either the paper or the electronic submission, the entire group will receive a mark of zero for the assignment.

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
This course does not accept late submission of assessment tasks. If a student (or group) submits assessment after the due date, it will result in a score of zero for the assessment task.

Students applying for extensions will be considered on a case by case basis. Decisions on the extension will be made within 5 working days of the application for an extension, with students to be notified within 3 working days of that decision being made.

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:
- Programs and Courses (http://programsandcourses.anu.edu.au/2017/Catalogue)
- the College of Business and Economics website (http://cbe.anu.edu/courses) and
- Wattle (https://wattle.anu.edu.au), the University’s online learning environment. Log on to Wattle using your student number and your ISIS password.

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**TUTORIAL AND/OR SEMINAR REGISTRATION**
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.

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**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