Course Syllabus – Winter 2011

AREc 444/544
COMMODITY FUTURES AND OPTIONS MARKETS
(4 Credits)

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Phone and e-mail are the best way to contact the instructor.

Class Time W, Th 8:00-9:50 am
Class Location Stag 132
Office Hours By appointment

Course Structure The course will provide an overview of the basic concepts needed
to use commodity futures and options markets to successfully
manage price risk. To address the increasingly global economy in
which commodity transaction occur, the course also includes
financial futures such as interest rates and currencies. Specific
topics covered include contract standardization, speculation and
hedging, opening and closing of positions, and basis, i.e. the
relationship between cash and futures markets, input-output
hedges, and spreads. The students will also gain hands on
experience through a trading simulation.

Lecture attendance is optional but strongly encouraged. Students
who don't do the homework or don't attend class regularly will
likely do poorly on the tests, and obviously cannot contribute to the
class discussion.

This is an upper level course, but freshmen, sophomores, juniors,
and graduate students are welcome to register as long as they have
an interest in the subject. Yet, because it is an upper level course,
students are expected to display a great deal of independence and
maturity. If questions emerge, the first step towards finding the
needed information should involve the library (and/or the internet),
the second the instructor. Students are expected to come prepared
to office hours and sufficiently early (i.e. not an hour before
assignments are due).

Learning Outcomes At the end of this class students will be able to 1) use commodity
futures and options markets to manage price risk and 2) have
acquired the conceptual groundwork to continue learning on their own about other and more advanced derivative instruments such as swaps etc.

3) Aside from the mechanics of commodity futures and options markets, students will develop their economic intuition by a) thinking through how markets work, b) analyzing price movements, c) simulated trading, and d) building and assessing more complex trading strategies such as input/output hedges.

Graduate students: In addition, graduate students will develop in-depth expertise beyond the material covered in lecture about a specific commodity markets topic of their interest. The topic must be agreed upon and approved by the instructor. The graduate project will result in a written paper (max. 20 pages single spaced, graded based on content, clarity, and professional writing).

Prerequisites

There are no formal prerequisites for the course, yet students should have an intuitive understanding of fundamental microeconomic concepts.

Grading

The final grade for the course consists of 1,000 points allocated as:

A. Homework (200 points total). Several homework problems will be given during the 10 weeks of classes. Homework assignments will be due at the beginning of class in the week following the lecture the homework was assigned. Homework will be given a zero grade if not turned in when due and graded on a pass/fail basis. I want the homework to be a stress free, positive, and enjoyable learning experience for the students. As long as all problems posed are solved you will receive a pass (independently of whether the solution is ultimately correct). The homework will provide experience in using the futures market to manage price risk.

B. Trading Simulation (50 points). Throughout the term, students will participate in a trading simulation. Two short half-page write-ups are required: the first, of the intended trading strategy and the underlying rationale (due at the beginning of lecture 5) and the second, of the actual trading strategy carried out with an explanation of any strategy adjustments made (due at the beginning of lecture 20).

C. Participation (50 points). Class participation will be graded based on the student’s contribution to in-class discussions. The
assessment will integrate frequency, quality, and professionalism of the arguments made.

D. Exams (700 points). Two announced exams, one midterm (350 points) and one final (350 points), will be given. The tests will be true/false and multiple choice and cover material discussed in class and techniques learned by doing the homework. The final exam is comprehensive.

F. Graduate students enrolling in the course will also be expected to complete a special project. The point system listed above will be modified to allow this additional requirement to account for 20% of the final grade.

Grading Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
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<tbody>
<tr>
<td>A</td>
<td>93.0+</td>
</tr>
<tr>
<td>A-</td>
<td>90.0 – 92.9</td>
</tr>
<tr>
<td>B+</td>
<td>87.0 – 89.9</td>
</tr>
<tr>
<td>B</td>
<td>83.0 – 86.9</td>
</tr>
<tr>
<td>B-</td>
<td>80.0 – 82.9</td>
</tr>
<tr>
<td>C+</td>
<td>77.0 – 79.9</td>
</tr>
<tr>
<td>C</td>
<td>73.0 – 76.9</td>
</tr>
<tr>
<td>C-</td>
<td>70.0 – 72.9</td>
</tr>
<tr>
<td>D+</td>
<td>67.0 – 69.9</td>
</tr>
<tr>
<td>D</td>
<td>63.0 – 66.9</td>
</tr>
<tr>
<td>D-</td>
<td>60.0 – 62.9</td>
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<tr>
<td>F</td>
<td>below 60.0</td>
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I consider myself a fair grader, but I do not believe in grade inflation. You do get the grade you earn. I do not curve.

Course Material


Notes handed out in class

Part of the course is a trading simulation, which will provide valuable trading experience. The provider charges a fee of 15,-US$ per sign-up for this simulation. The trading simulation is conducted online via the internet, and more information can be found by visiting the following website: http://tradesim.agecon.uiuc.edu/ Also, the instructor will provide an explanation and introduction to this trading simulation in class.

Students with Disabilities
Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

**Expectations for Student Conduct**

Expectations for student conduct, cheating policies, etc. can be found at [http://oregonstate.edu/admin/stucon/achon.htm](http://oregonstate.edu/admin/stucon/achon.htm)

If you cheat on exams, you will receive an F. I will not negotiate. Example: In another course, a student had his class notes open on the floor. He assured me that he had not looked at them since he started the exam but merely forgot to close them. Needless to say, he failed the course. I have no tolerance for cheating, and I do not hesitate to punish those who do.

**Course Outline**

The first few lectures will introduce the basic concepts of futures markets with subsequent lectures building upon these fundamental concepts and introducing various applications. In this course it is very important that students do not fall behind but continuously stay on top of the material. Once behind, it is extremely difficult to catch up. The best strategy is to not lag the class.

The schedule below outlines the course, small adjustments may be necessary to take into account students’ learning progress as well as current events. Any adjustments will be announced in class, so please make sure you attend, or if you cannot, to get the information from other students. This is your responsibility.

<table>
<thead>
<tr>
<th>Date</th>
<th>Content</th>
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| Jan 6 | Lecture 1  
Course introduction, syllabus, commodity markets, standardization, futures contracts |
| Jan 7 | Lecture 2  
Contract specification, futures price quotes, hedging, volume, open interest; Entering and exiting futures positions, hedging examples, importance of speculators, margins |
|       | Homework 1 due before lecture 3                                                               |
| Jan 13 | Lecture 3  
Margins, order types, introduction of trading simulation; Functioning of futures exchanges, importance of clearinghouse, basis |
| Jan 14 | Lecture 4  
Cost of carry relationship, spreads; Rolling hedges |
|       | Trading Strategy report, Homework 2 due before lecture 5                                       |
| Jan 20 | Lecture 5  
Currency futures; Equity index futures |
| Jan 21 | Lecture 6  
Optimal hedge ratio, cross hedging, hedging effectiveness;                                    |
Reading outline for the optional textbook
(This is only a guide; the textbook covers additional topics, many of which are also covered in class, and students should consult the book’s table of content to find the corresponding sections in the book.)

**Futures Trading and Commodity Exchanges**

  Course introduction, expectations, discussion of syllabus
  Introduction to futures and options markets
  History and Evolution of global commodity futures and options markets
  \textit{Readings: chapters 1, 6, p. 103-106 & 391-398, glossary}

  Exchanges and Commodities
  Clearing of futures and options contracts
  \textit{Readings: chapter 2}

**Mechanisms of Futures Trading**

  Price Relationships, storable commodities
  \textit{Readings: chapters 3, 7}

  Pricing Currency Instruments
  Spread Relationships
  \textit{Readings: chapters 4, 9, p. 167-176 & 189-197 & 201-210}
Risk Management: Futures Markets
Definition of Hedging
Readings: chapter 4, p. 69-73
Business and Currency Risk
Dealer and Merchant Use of Futures
Readings: chapter 8
Primary Producer Use of Futures
Processor Use of Futures
Readings: chapter 8
Multiple Commodity Hedging
Optimal Hedging, Review
Readings: chapter 5, 79-81, 88-95
Use of Currency Instruments
Input-Output Hedge
Readings: chapter 10, 11, p. 211--224 & 231-233 & 253-272
Speculators, Methods, and Returns
Price Performance and Behavior
Readings: chapter 4, 6, p. 73-77, 106-122

Market Regulations
Market Regulation
Readings: chapter 14

Options on Futures
Terminology of Options and Their Mechanisms
Readings Chapter 13: p. 316 – 322
The Uses of Buying Puts and Calls
Calls, Puts, Writing Puts and Calls
Readings: Chapter 13: p. 323-351
Pricing of Options
Readings: Chapter 13: p. 352-360