

**ECON174**  
**Financial Insurance**  
SPRING 2006

**Instructor:** Kazuki Onji

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**Class Web Page:** <http://www.econ.ucsd.edu/~konji/econ174/>

**Class Time and Location:** Mon, Wed, Fri 9:00 - 9:50, Pepper Canyon Hall 109.

**Office Hours:** Tue 3:00-4:30pm or by appointment.

<b>Teaching Assistants:</b>	Name	Email	Office	Office hours
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**Description:** This is a course on financial risk management that addresses how firms and individuals can use financial instruments to insure against risk factors. The course starts out describing some of the main risk factors that corporations are faced with such as fluctuations in exchange rates, interest rates and oil prices. It then introduces financial assets such as credit, weather, energy and insurance derivatives that can be used to hedge against these types of risk. After an in-depth introduction to futures/forwards markets, the course covers the pricing of options contracts and their use in investment and financial insurance strategies.

**Prerequisites:** 1. Econ120A 2. Econ120B 3. Econ100A or Econ170A 4. Econ120C (may be taken concurrently)

**Textbook:** (required) John C. Hull, *Fundamentals of Futures and Options Markets*, 5th Edition, 2005.

(not required) *An Introduction to Derivatives*, a book written for busy practitioners, is a useful primer for our study.

**Course Readings:** The reading assignments are based on the text as outlined below. Important sections for close reading will be announced during the lectures. You are strongly encouraged to read ahead.

**Grading:** There will be problem sets, a midterm exam and a final exam. They will count toward the numerical grade as follows.

Problem sets	20%
Midterm	30%
Final	50%.

**Exams: Midterm will be on Friday May 6** (in class) You may bring a non-programmable calculator to the exams. No blue book is needed. **No make-up exams will be given.** Students who miss a midterm exam without a university accepted excuse will receive a grade of zero for the exam. Students who miss a midterm with a university accepted excuse will have the weight of the final exam increased. You must take the final examination to receive a grade in this class.

Excuses for missed exams must be pre-approved by the instructor (except when this is not possible in an emergency situation). Students who make initial contact after the exam will have to document why they could not make contact prior to the exam. In addition, any student who misses an exam due to physical illness will be required to provide documentation from a health care professional indicating why the student was physically unable to take the exam. All documentation and an additional signed written statement explaining the relevant circumstances of the absence must be provided to the instructor within two working days of the student's return to campus. Failure to comply with any of the above in the specific manner will result in a grade of zero for the exam.

**Homework Assignments:** There will be graded problem sets in addition to practice questions. For the graded problem sets, you are encouraged to work with classmates, but you must submit answers in your own words; homework will be collected **at the beginning** of the class on the due date; submission after the due date will not be accepted; submission after the class on the due date will be accepted with a penalty - homework scores will be reduced by 25 percent.

## **Course Contents:**

### **I. Introduction - Basic Concepts**

1. Sources of risk: exchange rate, interest rate and oil price volatility. Examples of hedging strategies. "Corporate Use of Derivatives for hedging" (<http://www.investopedia.com/articles/stocks/04/122204.asp>).
2. Financial derivatives: futures, options, credit, weather, energy and insurance derivatives. Hull ch.22. Case studies on Agriculture, Ice Cream, and Construction Industry by Risk Management Association ([http://www.wrma.org/wrma/index.php?option=com\\_content&task=view&id=27&Itemid=33](http://www.wrma.org/wrma/index.php?option=com_content&task=view&id=27&Itemid=33))
3. Risk pooling and risk sharing. Hedgers and Speculators. Hull ch.1.

### **II. Futures/Forward and Swap markets**

1. Mechanics of Futures and Forward Markets. Hull ch.2.
2. Hedging Strategies Using Futures. Hull ch.3
3. Pricing of Futures and Forward Contracts. Arbitrage Pricing. Hull ch.5. ch.4 pp75-80.
4. Interest rate management. Hull ch.6
5. Swaps. Hull ch.7 (pp151-162).

### **III. Options Markets**

1. Introduction to Options Markets. Hull ch.8.
2. Properties of Stock Options. Hull ch.9.
3. Trading Strategies Involving Options. Hull ch.10.
4. Pricing Stock Options I: The Binomial Model. Hull ch.11.
5. Pricing Stock Options II: Black-Scholes. Hull ch.12.
6. Risk Management with Options. Hull ch.15. pp317-339.
7. Portfolio Insurance. Hull ch.15. pp339-344.

### **IV. Measuring and Management of Risk**

1. Measuring risk. Value at Risk. Downside risk. Hull ch.18.
2. Evaluating risk: a review of some basic principles in finance. Diversifiable, systematic risk. Hedging irrelevance proposition.