Syllabus: Financial Derivatives 206/717
Wharton, University of Pennsylvania

Prof. Sophie Moinas Spring 2015

Instructor

Prof. Sophie Moinas
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Office: 2429 Steinberg Hall/Dietrich Hall
Office hours: Tuesday 4:30pm-6:00pm, Thursday 4:30pm-6:00pm
Please make an appointment if you would like to meet outside of office hours.

Teaching Assistants

There will be Teaching Assistants for the course. Their contact information and office hours will be posted. The TA office hours will take place in the TA cubicles in the Finance Department (2300 SH-DH).

Course description

There has been a dramatic growth in markets for financial derivatives in recent years. Modern managers can use financial derivatives such as futures, options, and swaps to hedge particular kinds of risk or to change the returns on their portfolios in certain ways. The purpose of this course is to provide the student with the necessary skills to value and to employ futures, options, and other related financial instruments. In order to provide a useful treatment of these topics it is necessary to stress fundamentals and to explore topics at a somewhat technical level.

Prerequisites: NONE.

The following introductory Finance and Statistics courses are recommended but not required:
FNCE 206: FNCE 100, FNCE 101, STAT 101-102
FNCE 717: FNCE 601, FNCE 602, STAT 621

Class times and locations

FNCE 206: TR 9:00-10:30pm
FNCE 717:TR 10:30-12:00pm

Exams

There are two mandatory exams. The midterm exam is on Tuesday, March 3rd in class. The final exam takes place on a date determined by the University Registrar's office (during the week starting on May 2nd).
Undergraduate students who are unable to take the exam must petition their dean's office for a makeup exam. MBA students who are unable to take the exam must petition the MBA Program Office.
Both exams are closed-book, closed-notes. For each exam you may bring a single letter-size handwritten formula sheet. You may write on both sides of this sheet.

Problem Sets

No late assignments will be accepted.
There are six problem sets. These can be tackled in groups of up to five students. Completed assignments will be graded on the following scale, √ -, √, √ +. Problem sets are due at the start of the class you attend, on the dates shown below. Problem set solutions should be clearly written and should explain your thought process. If you submit a printout from a spreadsheet, please make sure to label it carefully. You must submit a paper copy of your solution.

	Due date	Posted
Problem Set 1	Thursday, February 4	Thursday, January 28
Problem Set 2	Thursday, February 18	Thursday, February 11
Problem Set 3	Thursday, March 3	Thursday, February 25
Problem Set 4	Thursday, March 24	Thursday, March 17
Problem Set 5	Thursday, April 7	Thursday, March 31
Problem Set 6	Thursday, April 26	Thursday, April 14

I will post the grade for each problem set on Canvas. Please make sure you check your grade and report any errors as soon as possible and at the latest within two weeks of the problem set's due date. I will not accept any inquiries afterwards.

The solution to each problem set will be posted after your answers have been turned in (see table with deadlines). Your graded answers will be returned to a _le cabinet in the Finance Department. I will not discuss the solutions to problem sets in class, but I encourage you to come the TAs' or my office hours if you have any questions.

Books
The book for this class is:
Derivatives Markets (3nd edition), by Robert L McDonald.
Copies of the book are available at the campus bookstore.

As an additional reference, I also recommend
Options, Futures and Other Derivatives (8th edition), by John C Hull.

Exams will be based only on material covered in class and in the accompanying problem sets.

Lecture notes etc.

This is a paper free class. I will distribute all readings and lecture notes electronically via Canvas. I will always make sure to post my lecture notes on Canvas prior to class. If you wish to take notes directly on these lecture notes, please make sure to print out a set before class. I will not distribute paper copies in class. There is no bulkpack for this class.
I will also use Canvas to post the problem sets and the problem set solutions.

Course requirements

Your final grade will be based on your performance on the problem sets and the two exams. I will base your overall grade on one of the two weighting schemes below; for each individual student, I will use the weighting scheme that is more favorable for him/her.

	Weighting 1	Weighting 2
Problem sets	20%	20%
Midterm exam	40%	25%
Final exam	40%	55%

Review sessions

There will be a review session before each of the two exams. Time and location TBA.

Classroom behavior

Laptops may be used for note-taking only. Surfing the web is very distracting for students around you.
Turn your cell phone off. Please inform me in advance if you are expecting an important phone call. If not, DO NOT LEAVE THE CLASSROOM TO TAKE A PHONE CALL!

Academic integrity

May I remind you that your work and conduct will be held accountable under the University of Pennsylvania's Code of Academic Integrity. Violations of this Code will be met with swift and certain punishment to the full extent of the regulation. You can find a copy of the code at:
http://provost.upenn.edu/policies/pennbook/2013/02/13/code-of-academic-integrity

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Tentative Course outline

1. Introduction
2. Risk management using derivatives
3. Forward Contracts on Financial Assets
4. Futures Contracts on Financial Assets
5. Forward Rate Agreement and currency futures
6. Treasury Bond Futures and Repurchase Agreements
7. Forward and futures contracts on commodities
8. Swaps
9. Hedging and pricing European options in the binomial option pricing model
10. Hedging and pricing European and American options in the multi-period binomial model
11. Black, Merton, Scholes Formula(s) and Applications
12. Delta-Hedging and the Greeks
13. The market maker’s perspective, Financial Engineering and Security Design
14. Additional topic as time permits: speculation
15. Regulation and conclusion