

COURSE SYLLABUS

Instructor	Farid AitSahlia
Text:	John C. Hull, “Fundamentals of Futures and Options Markets,” <i>Eighth Edition</i> , Prentice Hall. This text is recommended. You may use an earlier version (see note below.)
Course Packet	Lecture notes (power point slides) and articles will be posted on Canvas
Software	Software will be provided, should it be needed. Computer spreadsheets (Excel) discussed in class will be made available on the class web site.
Contact Information	Office: STZ 310 Phone: (352) 392-5058 E-mail: farid.aitsahlia@warrington.ufl.edu Office Hours: By appointment
Classroom/Time	Hough Hall Room 140/ T R, Periods 9 and 10

Course Description

The course will deal with (a) the structure and operation of derivative markets (options, forward contracts, futures, swaps and other derivatives), (b) the valuation of derivatives, (c) the hedging of derivatives, and (d) applications of derivatives in the areas of risk management, portfolio insurance, and financial engineering. The models that will be studied include the Black-Scholes model, binomial trees, and Monte-Carlo simulation. Specific topics include simple no-arbitrage pricing relations for futures/forward contracts and the put-call parity relationship; delta, gamma, and vega hedging; implied standard deviation and its statistical properties; portfolio insurance and dynamic replication strategies.

By its very nature a course like this involves some advanced mathematics and statistics. However, in this course the math will be kept to the minimum that is required (the higher level math will be relegated to Appendices and will be optional). The goals are to (a) understand the characteristics of various derivatives, (b) take a look at the “black box” so as to understand the pros and cons of various models that are widely used, and (c) gain some experience in applying these instruments and models for valuation, risk management and financial engineering. On Wall Street, individuals who are skilled at analyzing derivatives are in great demand and command very high salaries.

NOTE: You can easily follow the course with an earlier version of the book (either the 6th or 7th) as I will not cover everything from the text. The latest version contains material related to recent events, particularly those involved in the financial crisis of 2008. I will however discuss them in class and thus you need not have the most recent version of the textbook. Some end-of-chapter exercises change from one edition to the next but I will post the assignments as they are listed in the 8th edition.

FIN 6537- Sec. 1086 - Derivative Securities (Fall 2016)

Class Format

This course will use both the lecture and the case method of instruction. The lectures, supplemented by notes, examples and assignments are intended to familiarize students with the basic concepts, quantitative techniques, pricing, and institutional details necessary for making decisions involving derivatives. Careful quantitative analysis is essential, but not sufficient, for decision making in a multi-faceted and changing business environment. This is where the cases come in. They not only require the application of basic concepts and quantitative skills, but also require consideration of the competitive environment, the myriad of alternative securities that may be available to the decision-maker, and other management and marketing issues. The cases will be used to illustrate the application of derivatives for portfolio insurance and financial engineering.

Pre-requisites

The core-course in finance and preferably an investment course

Students should have a good knowledge of basic finance concepts, including risk, return, arbitrage, efficient markets, and the time value of money. In addition, a course in basic statistics and probability theory would be useful. The course will involve a significant amount of numerical calculation and modeling using a computer; therefore, fluency in the use of a spreadsheet package such as EXCEL is essential. Knowledge of calculus is not required, but this would be helpful.

Assessment and Course Grade

Course grade will be calculated using the following points

Class Participation and Attendance	100	Includes non-graded problems and attendance
Quizzes/Assignments	300	Individual
Group assignment	200	Group
Final Exam	400	During last week of Mod 1 or last day of class
Total Points	1000	

FIN 6537- Sec. 1086 - Derivative Securities (Fall 2016)

Final course grades will be based on the following numeric scale indicating the number of total points needed to achieve each letter grade

Minimum Points	Course Grade
920	A
880	A-
840	B+
800	B
760	B-
720	C+
680	C
640	C-
600	D+
560	D
<500	D- to F

Note UF grading policy and GPA

A = 4.0; A- = 3.67; B+ = 3.33; B = 3.0; B- = 2.67; C+ = 2.33; C = 2.0, C- = 1.67; D+ = 1.67; D = 1.0; D- = 0.67

Assignments

The assignments will consist of several end-of-chapter problems (problem sets) and a group-based computer implementation (computer assignments will involve option valuation using EXCEL and/or an alternative software, which will be provided, if needed.) These assignments should be treated as equivalent to take-home exams. The reports for these should be typed. **Late reports will not be accepted.**

Group work

Students will be required to work in groups of four or five, in order to complete a computer assignment that makes use of market data. You should expect to present your result during a class presentation at the end of the term. Punctuality will be noted and will be part of your class participation grade. Please let me know in advance if you have to miss class for good reason.

Final Exam

The final exam will be closed book, but you will be allowed to bring one 8.5in by 11in sheet with formulas and other useful information. You can use both sides. The exam will consist of numerical and qualitative conceptual questions. The questions will be very similar to the problems discussed in class, assignments submitted, and the sample final exam. The final exam will be held on the regular scheduled day. There will be no make-up exam.

Class Participation and Attendance

For each class, students should read the assigned chapters and also attempt the problem(s) that are given. Working in groups to solve the assigned problems is encouraged. It is highly recommended that students ask questions and actively participate in the class. Class participation as well as attendance will be used for the class participation grade.

Preparations for the First Week of Class

Read Chapter 1 and come prepared to discuss Questions 1.1-1.23. Not all the questions will be discussed, but individuals will be called on to give their answers. Work in groups to solve the problems.

Note Regarding In-Class Distractions

Out of respect for fellow students, it is requested that all cell-phones, pagers, beepers, alarms, etc. be switched off or silenced before the beginning of each class. Also, you should not use your computer unless we are working on a problem or project that requires the use of the computer. You should bring your lap top to class.

FIN 6537- Sec. 1086 - Derivative Securities (Fall 2016)

Tentative Outline

The schedule given below is only tentative, and may be changed based on the progress of the class.

Lecture Number	Topic	Lecture Note	Text (Ch.)	Assignments
1	Course Outline Introduction	Outline LN 1	1	
2	Mechanics of Futures Markets	LN 2	2	
3	Hedging Strategies Using Futures	LN 3	3	Handout assignment 1 (Individual)
4	Forward and Futures Pricing	LN 4	5	
5	Mechanics of Options Markets	LN 5	9	Assignment 1 is due
6	Properties of options & Trading strategies involving options	LN 6 & 7	10 & 11	
7 & 8	Introduction to Binomial Trees	LN 8	12	
	Valuing Stock Options: The Black-Scholes Model	LN 9	14	
9	“Greeks” and portfolio Insurance	LN 10	17	Group Assignment Handed Out
10	Volatility Smiles	LN 11 LN 11A	19	
11	Credit Derivatives	LN 12	23	
12	Special Topics <ul style="list-style-type: none"> • ESO • Real Options • Financial Engineering 			Group assignment due
13	Review for the final exam			
14	FINAL EXAM	Scheduled Date TBA *** NO make-up exam ****		

The following is from the University of Florida Code of Student Conduct:

The academic community of students and faculty at the University of Florida strives to develop, sustain and protect an environment of honesty, trust and respect. Students are expected to pursue knowledge with integrity. Exhibiting honesty in academic pursuits and reporting violations of the Academic Honesty Guidelines will encourage others to act with integrity. Violations of the Academic Honesty Guidelines shall result in judicial action and a student being subject to the sanctions in paragraph XI of the Student Conduct Code. The conduct set forth hereinafter constitutes a violation of the Academic Honesty Guidelines (University of Florida Rule 6C1-4.017).

Cheating

The improper taking or tendering of any information or material which shall be used to determine academic credit. Taking of information includes, but is not limited to, copying graded homework assignments from another student; working together with another individual(s) on a take-home test or homework when not specifically permitted by the teacher; looking or attempting to look at another student's paper during an examination; looking or attempting to look at text or notes during an examination when not permitted. The tendering of information includes, but is not limited to, giving of your work to another student to be used or copied; giving someone answers to exam questions either when the exam is being given or after taking an exam; giving or selling a term paper or other written materials to another student; sharing information on a graded assignment

Plagiarism

The attempt to represent the work of another as the product of one's own thought, whether the work is published or unpublished, or simply the work of a fellow student. Plagiarism includes, but is not limited to, quoting oral or written materials without citation on an exam, term paper, homework, or other written materials or oral presentations for an academic requirement; submitting a paper which was purchased from a term paper service as your own work; submitting anyone else's paper as your own work.

So that there is no confusion, here are my expectations

1. Students are strongly encouraged to work with their classmates to study, work problems and cases, and prepare for classes and exams. The goal is to maximize your understanding of the material.
2. Students are expected to include only their own work on the exams. On the weekly assignments, students are expected to hand in a individual/team assignment, but each team is expected to do its own independent work. Cheating, as defined above, will not be tolerated.
3. Students are expected to contribute fully to each and every team assignment. Therefore, it is not permissible, say, for a team to split the write-up and the report so that each member of the team only contributes to part of an assignment. Each student is expected to come to class prepared to discuss and present all of every assignment.
4. Plagiarism, as defined above, is not acceptable.

Access to Library Resources

As a student at the University of Florida, you have free access to many of the online services that usually require a subscription. However, you will either need to access these services through a Library-related computer, or go through a “Proxy Server” using your GatorLink account username and password. To access the online Business Library section of the Smathers Library, go to

<http://www.uflib.ufl.edu/cm/business/>

On the right of the top line, click on Remote Logon. This will take you to a page that allows you to connect to on-campus services using the Library Proxy Server:

<http://www.uflib.ufl.edu/ufproxy.html>

At the bottom right of the screen, fill in your GatorLink Account Username and Password, and then click Login. This will take you back to the Smathers’ Library page, but using the Proxy Server:

<http://www.uflib.ufl.edu.lp.hscl.ufl.edu/ufproxysuccess.html>

In the middle of the page you will see “Start”. Go to the dropdown menu under “Or…” and choose “Business (Online)”. This will take you back to the online Business Library, but through the Proxy Server:

<http://www.uflib.ufl.edu.lp.hscl.ufl.edu/cm/business/>

You could also click on “UF Libraries’ Home Page”, then “Libraries & Collections” under “About the Libraries”, and then “Business Reference” under “Smathers Library (East)”.

USING VPN

The UF VPN Service is designed to allow University Faculty, Staff, and Students to securely “tunnel” into campus over other networks, such as their home internet connection, and access services as if they were on campus. It is ideal for using the Business Library and UF Libraries resources from off-campus. If you are reading journal articles and searching library databases from home you’ll want to install the VPN.

Install & configure the VPN

1. Make sure you have a [Gatorlink account](#).
2. [Download the VPN software](#) for your computer’s operating system
3. Follow the instructions to install and configure the VPN
 - [Windows 98/ME/NT/2000/XP/Vista \(including firewall guide\)](#)
 - [Linux Kernel 2.2-2.6](#)
 - [Macintosh OS 10.1-10.4](#)
 - [Macintosh OS 8/9](#)
 - [Palm/PocketPC](#)

Using the VPN & Business Library resources

1. Log in to the UF VPN with your [Gatorlink account](#).
2. Go to the [Business Library Home Page](#) and use all the libraries resources (including databases and online journals) as if you were on campus