

COURSE SYLLABUS

<b>Instructor</b>	Farid AitSahlia
<b>Text:</b>	John C. Hull, “Fundamentals of Futures and Options Markets,” <i>Ninth Edition</i> , Prentice Hall. This text is recommended. You may use an earlier version (see note below.)
<b>Course Packet</b>	Lecture notes (power point slides) and articles will be posted on Canvas
<b>Software</b>	Software (Excel-based) will be posted on Canvas, should it be needed.
<b>Contact Information</b>	Office: STZ 301F Phone: (352) 392-5058 E-mail: <a href="mailto:farid.aitsahlia@warrington.ufl.edu">farid.aitsahlia@warrington.ufl.edu</a> Office Hours: By appointment
<b>Classroom/Time</b>	Hough Hall Room 240/ T R, Periods 5 and 6

**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, time permitting. 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 required. 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 7<sup>th</sup> or 8<sup>th</sup>) as I will not cover everything from the text. The latest version contains material related to recent events, particularly those associated with 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 9<sup>th</sup> edition.

# FIN 6537- Sec. 1086 - Derivative Securities (Fall 2017)

---

## **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.

## **Pre-requisites**

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 would be helpful.

## **Assignments**

The assignments will consist of several end-of-chapter problems (problem sets) that may at times involve an Excel-based software implementation. You may work in groups on these assignments and turn in a single copy for your group. You should make every effort to contribute to your group as exams will be based on your understanding fully -- and individually -- these assignments.

## **Quizzes/Final Exam**

There will be one or two quizzes, depending on how fast we progress through the material. If we manage two, the first will cover the mechanics and hedging strategies involving futures contracts, the second will cover option markets and option trading strategies.

The quizzes and 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. You should expect to answer numerical and qualitative/conceptual questions. The questions will be very similar to the problems discussed in class, and in the assignments. Once the exam date finalized, there will be no make-up exam unless you have unique and justified circumstances.

## **Assessment and Course Grade**

Course grade will be calculated using the following points

Class Participation and Attendance	100	
Quizzes/Assignments	400	Individual/Group
Final Exam	500	During last week of Mod 1 or last day of class
<b>Total Points</b>	<b>1000</b>	

## **Class Participation and Attendance**

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.

## **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 in a way that distracts you and your fellow classmates. Needless to say, laptops should be used for note-taking or for online consultations that are directly related to the course material. Egregious violations will be reflected negatively in the class participations score.

The final course grade 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

## FIN 6537- Sec. 1086 - Derivative Securities (Fall 2017)

---

### **Tentative Outline**

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

<b>Week number</b>	<b>Topic</b>
1	Course Outline Introduction  Mechanics of Futures Markets
2	Hedging Strategies Using Futures
3	Forward and Futures Pricing
4	Mechanics of Options Markets
5	Properties of options & Trading Strategies Involving Options
6	Introduction to Binomial Trees
	Valuing Stock Options: The Black-Scholes Model
7	FINAL 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 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