

**BA in Management Program**  
**Fall 2024**  
**FIN 403 – Derivative Securities**

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**Web:** SuCourse+  
**Office Hours:** By appointment

Type	Time	Days	Where
Class	12:40-14:30	M	SBS L018
	16:40-17:30	T	SBS G060

**Course Objective:**

This course serves as an introduction to derivative securities (markets, pricing and trading strategies) and their applications in finance. Forward contracts, futures, options, and swaps are the focal point of the course. While the emphasis is on the use of derivatives as risk-transferring devices, valuations of contracts are also included. In addition to hedging strategies to be created by any of the derivative securities, various trading strategies involving options are presented. A solid coverage of no-arbitrage based pricing is provided as the common underlying premise to valuing derivative securities. Cost-of-carry valuation of forwards and futures, binomial pricing of options, the Black- Scholes option pricing formula, dynamic delta-hedging, and swap pricing are introduced.

**Learning Outcomes:**

Upon successful completion of the course, the students should be able to:

1. Identify the characteristics and uses of options and apply option-based trading strategies
2. Identify and analyze the influence of the determinants of the value of options
3. Use appropriate models for the valuation of options
4. Describe the nature of futures, forwards, and swaps
5. Apply valuation methods for futures, forwards, and swaps
6. Describe how to manage interest rate and exchange risk via futures, forwards, and swaps
7. Explain financial engineering and related applications of derivatives

**Course Material:**

*Fundamentals of Futures and Option Markets*, John C. Hull, 9th edition, 2016 (Pearson)  
<http://www.homerbooks.com/urun/fundamentals-of-futures-and-options-markets>

**Course Web:**

SuCourse+ will be actively used throughout the semester. Students must check their accounts frequently to ensure that they have the most recent course materials. Slides, announcements, assignments, exam grades and other course material will be posted on SuCourse+.

**Instructional Design:**

In-class (physical) lectures will introduce students with the main concepts on derivatives. Students will have the opportunity to apply the knowledge they acquire in classes by completing the assignments. Students should read the assigned material before each lecture.

**Grading:**

Midterm (in-class)	: 40%
Final (in-class)	: 60%

**Requirements:***Exams*

The midterm exam will take place on **November 18<sup>st</sup> - Lecture Time** (see Course Schedule Below) The final exam will be scheduled by Student Resources. The exams will take place in-person on the campus. Both exams are in-class and closed book.

There are no make-up exams unless a situation arises which was not foreseeable and not under the control of the student. Requests for make-ups must be made directly to me as soon as possible and must be accompanied by relevant documentation. Final exam policy: If your excuse is accepted, you will be required to take a make-up exam two to three days after the final exam date.

*Assignments:*

There will be 7 homework assignments posted on SuCourse+. These assignments will not be collected or graded.

*Lectures & Attendance:*

Students are expected to attend lectures and participate in discussions. Your physical attendance will be tracked. However, this will be only used for reporting purposes and will not impact your grades.

### *Calculator:*

Students will need a scientific or financial calculator throughout the course. Some problems encountered in this course require arithmetic operations that are difficult or impossible to be solved by hand or with a non-scientific or non-financial calculator. A scientific or financial calculator is useful to solve these problems efficiently.

### *Objections to Grading:*

Students must write up their objections and submit them to me no later than a week after receiving their graded work. This document should clearly explain the basis of objection. Except for minor grading errors, no verbal objection is accepted.

### *Special Needs Students:*

Any student who, because of a disability, requires some special arrangements in order to meet course requirements should contact me as soon as possible to make the necessary accommodations.

### *Updates*

Changes or additions to any of the policies above, or course outline, if any, will be announced on the course website.

### **Academic Honesty:**

Learning is enhanced through cooperation and as such you are encouraged to work in groups, ask for and give help freely in all appropriate settings. At the same time, as a matter of personal integrity, you should only represent your own work as yours. Any work that is submitted to be evaluated in this class should be an original piece of writing, presenting your ideas in your own words. Everything you borrow from books, articles, or web sites (including those in the syllabus) should be properly cited. Although you are encouraged to discuss your ideas with others (including your friends in the class), it is important that you do not share your writing (slides, MS Excel files, reports, etc.) with anyone. Using ideas, text and other intellectual property developed by someone else while claiming it is your original work is *plagiarism*. Copying from others or providing answers or information, written or oral, to others is *cheating*. Unauthorized help from another person or having someone else write one's paper or assignment is *collusion*. Cheating, plagiarism and collusion are serious offenses that could result in an F grade and disciplinary action. Pay utmost attention to avoid such accusations.

### Course Schedule

<b>Week 1</b>	<b>Date:</b> September 23-24 <b>Topic:</b> Orientation & Introduction to Derivatives
<b>Week 2</b>	<b>Date:</b> September 30 – October 1 <b>Topic:</b> Mechanics of futures markets
<b>Week 3</b>	<b>Date:</b> October 7-8 <b>Topic:</b> Hedging strategies using futures ; HW 1 (tentative)
<b>Week 4</b>	<b>Date:</b> October 14-15 <b>Topic:</b> Interest rates ; HW 2 (tentative)
<b>Week 5</b>	<b>Date:</b> October 21-22 <b>Topic:</b> Determination of forward and futures prices ; HW 3 (tentative)
<b>Week 6</b>	<b>Date:</b> November 4-5 <b>Topic:</b> Swaps ; HW 4 (tentative)
<b>Week 7</b>	<b>Date:</b> November 11-12 <b>Topic:</b> Wrap up & Review or Midterm Exam
<b>Week 8</b>	<b>Date:</b> <b>November 18 (Time: 12:40-14:30)</b> <b>Topic:</b> <b>MIDTERM EXAM</b>
<b>Week 9</b>	<b>Date:</b> November 25-26 <b>Topic:</b> Mechanics of options markets & Properties of Stock Options
<b>Week 10</b>	<b>Date:</b> December 2-3 <b>Topic:</b> Trading strategies involving options ; HW 5 (tentative)
<b>Week 11</b>	<b>Date:</b> December 9-10 <b>Topic:</b> Binomial Trees ; HW 6 (tentative)
<b>Week 12</b>	<b>Date:</b> December 16-17 <b>Topic:</b> BSM Model
<b>Week 13</b>	<b>Date:</b> December 23-24 <b>Topic:</b> Greek Letters ; HW 7 (tentative)
<b>Week 14</b>	<b>Date:</b> December 30-31 <b>Topic:</b> Wrap up & Review for Final Exam