

**BA in Management Program
Fall 2021
FIN 403 – Derivative Securities**

Instructor: Yiğit Atılğan
Phone: (216) 483-9663
Web: SuCourse+
E-mail: yigit.atilgan@sabanciuniv.edu

Office: SBS 1002
Fax: (216) 483-9699
Office Hours: By appointment

Type	Time	Days	Where
Class	10:40 AM - 12:30 PM	R	FENS L045
Recitation	Asynchronous (one hour)		SuCourse+

Course Objective

This course serves as an introduction to derivative securities 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

Course slides, practice problems and their solutions, lecture recordings, and announcements will be posted on SuCourse+. The midterm and final exam grades will also be posted on SuCourse+.

Instructional Design

In-class lectures will introduce students with the main financial concepts. Students can attend these lectures either physically or online. The lectures will be held over Zoom for distant participants on the following link:

<https://sabanciuniv.zoom.us/j/9155172887>

Passcode: 939791

The video recordings for the in-class lectures will also be made available to students as soon as possible and throughout the semester. The instructor will post one asynchronous video on SuCourse+ each week for students to watch them at their own convenience. These videos will include solutions to the practice problem sets and will serve to tie any loose ends. Students will have the opportunity to apply the knowledge they acquire in the classes by working through the practice problems posted on SuCourse+ every week.

The instructor will be taking questions from in-person participants. The distant participants are asked to enter their questions to Zoom chat. The instructor will have a look at these questions at certain points during the lectures. The distant participants' voices will be muted to minimize interruptions. The distant participants are not required to turn on their cameras.

Grading

Midterm Exam: 50%

Final Exam: 50%

Requirements

Exams: The midterm exam will take place on **November 25th** between **17:40 and 19:30**. The final exam will be scheduled by Student Resources. The exams will take place in-person on the campus except for those students who cannot be on the campus due to health reasons and some exchange students. You will be required to show all your work and you will get partial credit for this. There will be multiple versions of each exam.

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.

Lectures & Attendance: Students are expected to attend the sessions either physically or digitally. Your attendance in these sessions 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, especially in the limited time frame of an exam.

Objections to Grading: Students should make their objections and communicate them to me no later than a week after receiving their grades.

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.

Pandemic Precautions

Social distancing will be observed in the physical lectures. Seating arrangements have been made to provide social distancing. Limited capacity of each room will be written at the doors. Due to limited seating capacity of classrooms, a certain rotation will be implemented, especially early in the semester. Only students whose ID number ends with an odd number can physically attend classes in the first week, and only those whose ID number ends with an even number can attend classes physically in the second week. After the second week, when the class lists are finalized with the add-drop period, the instructor will declare whether a rotation is needed for in-class attendance, and if needed how. If some students show up after the classroom's capacity is already full, those students will not be allowed in the classroom. Spaces have been arranged throughout the campus for self-study and to follow online sessions.

Both the instructor and the students must wear masks properly throughout the lecture. There will be no exception to this rule indoors and in the classrooms. In cases where a student insists not to follow this rule despite a reminder, the instructor will share the name and the ID of the student with the Faculty for necessary actions. The instructor may also cancel the lecture and deliver the amount of cancelled time asynchronously.

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 a failing grade and disciplinary action. Please pay utmost attention to avoid such accusations.

Course Schedule

Week 1	Date: September 30 Topic: Orientation / Introduction to Derivatives
Week 2	Date: October 7 Topic: Mechanics of Option Markets
Week 3	Date: October 14 Topic: Properties of Stock Options
Week 4	Date: October 21 Topic: Binomial Trees & BSM Model
Week 5	Date: November 4 Topic: Mechanics of Forward and Futures Markets
Week 6	Date: November 11 Topic: Valuation of Forward and Futures Contracts
Week 7	Date: November 18 Topic: Review for Midterm Exam
Week 8	Date: November 25 Topic: MIDTERM EXAM
Week 9	Date: December 2 Topic: Swaps
Week 10	Date: December 9 Topic: Trading Strategies Involving Options
Week 11	Date: December 14 Topic: Greek Letters
Week 12	Date: December 23 Topic: Greek Letters (continued)
Week 13	Date: December 30 Topic: Hedging Strategies Using Futures