Sungkyunkwan University Winter International Student Experience (WISE) 2026

Derivative Securities

Prof. Jong-Bom Chay, SKKU

SHORT COURSE DESCRIPTION

Derivative securities have become increasingly important in the world of finance and investments. It is now essential for all finance professionals to understand how derivatives markets work, how they can be used, and what determines their prices. Derivative securities can be a great means of managing various types of risks faced by financial managers and professional investors. However, they can also create financial catastrophes if misused. In this course, we will learn the fundamental aspects of derivative securities and then quickly introduce some interesting cases of catastrophes brought about by the mistakes of firms or professional traders. There is much to be learned from the mistakes of others, especially when the errors are so big and the personalities behind them so engaging. This course covers options, forward contracts, futures contracts, and swaps. By the end of this course you will have a good knowledge of how these contracts work, how they are used, and how they are priced. Individuals who are skilled at analyzing derivatives are in great demand in major financial centers around the world. This course will definitely enhance your career prospects.

Instructor:	Prof. Jong-Bom Chay, Ph.D., CFA
Class Time:	09:00~12:30
Classroom:	TBA [International Hall]
E-mail:	*jbchay@skku.edu*

READING MATERIALS

1. Required Textbook: John C. Hull*, Fundamentals of Futures and Options Markets* 9h Edition (2021), McGraw-Hill Education International.
2. Lecture notes will be available from *SKKU i-Campus* website.

COURSE REQUIREMENTS AND GRADING

You will be graded on the following:

(a) Exam: There will be **an open-book exam**.
(b) Homework assignment: This will be evaluated based on your attempt at the assigned homework. Your assignments will not be graded but your submission record will account for 20% of the grade.
(c) Case presentation: Students will form groups of four or five members for presentation. Each group will make a short presentation of a case related to derivatives. I will provide more detailed information in class.

Assessment:

(a) Attendance and class participation:	20%
(b) Homework assignment submitted:	20%
(c) Group presentation of a case:	20%
(d) Exam (Open-book):	40%

Homework assignments:

Problem sets will be assigned in class. They come from the end-of-the-chapter problems in our main textbook. Since the exam questions will be similar to these assignment problems, you will find your work for assignments a very rewarding experience.

Classroom Policies
I expect you to attend all classes and to participate actively in class discussion so that you get the most learning out of this course.

I will make all class-related announcements in class. This includes class cancellations, changes in assignments, exam dates, changes in topics, policies, etc. It is your responsibility to find out what you missed if you miss a class.

COURSE SCHEDULE

– WEEK I –

1. Tuesday (23 Dec)
   Introduction: Derivative securities and financial engineering (Ch. 1)
   Forward and Futures markets (Ch. 2)

2. Wednesday (24 Dec)
   Hedging strategies using futures (Ch. 3)

Thursday (25 Dec) - Holiday

3. Friday (26 Dec)
   Interest rates (Ch. 4)
   Cases

– WEEK II –

4. Monday (29 Dec)
   Determination of forward and futures prices (Ch. 5)

5. Tuesday (30 Dec)
   Swaps (Ch. 7)

6. Wednesday (31 Dec)
   Mechanics of options markets (Ch. 9)
   Properties of stock options (Ch. 10)

7. Thursday (1 Jan) - Pre-recorded Lecture
   Securitization and the credit crisis of 2007 (Ch. 8)

8. Friday (2 Jan)
   Trading strategies involving options (Ch. 11)
   Cases

– WEEK III –

9. Monday (5 Jan)
   Introduction to binomial trees (Ch. 12)
   Cases

10. Tuesday (6 Jan)

Black-Scholes-Merton option pricing model (Ch. 13)
Cases

11. Wednesday (7 Jan)

Value at Risk (Ch. 20)
Review

12. Thursday (8 Jan)

Final Exam