

NATIONAL TAIWAN UNIVERSITY
Department of International Business
Options and Futures

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Spring 2019
Tuesday 9:10-12:10
02-33664987

COURSE DESCRIPTION

The major goal of this course is to provide students comprehensive understanding of many **financial derivatives** (金融衍生性商品). A derivative instrument is a contract between two parties whose payoff depends on the values of the **underlying variables** on a specified date in the future. The prices of any commodity assets (such as gold or oil) or financial assets (such as equity shares or bonds) can be the underlying variables, and these assets are called **underlying assets** (標的物).

Four categories of derivatives will be covered in this course, including **forwards** (遠期合約), **futures** (期貨合約), **swaps** (交換合約), and **options** (選擇權). Students will learn how and where to trade these derivatives. In addition, the methods to calculate the **theoretical values** (理論價值) of these derivatives are also introduced. Moreover, the **trading and hedging strategies** (交易與避險策略) associated with these financial derivatives will be discussed.

It is strongly recommended that students who are interested in this course should already learn some basic Finance courses before, such as **Investments** (投資學), **Financial Management** (財務管理), or **Corporate Finance** (公司理財). To maintain the fluency of my lecture, I assume students are equipped with the basic knowledge in those courses, e.g., the time value of money, the simple vs. compound interest calculation, the term structure of interest rates, the present vs. future values, the fundamental classes of financial assets, etc. The last thing should be noted is that this course is designed for undergraduate students. For graduate students, if you never learned similar courses before, welcome to attend this course. However, you need to keep in mind that the content and exams in this course may be too simple to satisfy your appetite for knowledge.

TEXT AND REFERENCES

Lecture Notes: <http://homepage.ntu.edu.tw/~jryanwang/> → Course Information → Options and Futures (undergraduate level).

(The modified PowerPoint files for each week lecture are available after 9:00 p.m. every Tuesday.)

(DO NOT access CEIBA for the syllabus and lecture notes.)

Required Text: Fundamentals of Futures and Options Markets (global edition), by John C. Hull, 8th ed., 2017. (The representative bookstore of this book in Taiwan is 雙葉書局. If you intend to purchase the text book together, you can contact Mr. 鄧兆淇 via (02) 2368-4198#15.)

EXAMS AND GRADING

Midterm Exam 50% (on April 16th)

Final Exam 50% (on June 18th)

- ※ The exam dates are regulated by NTU. Please ensure that you will be available to attend these two exams before you decide to take this course.
- ※ The need of travel or leaving Taiwan before the final exam cannot be the excuse to miss the exams.
- ※ If you cannot attend the exams due to other reasons, you need to notify me in advance and show me the evidence, e.g., a medical diagnosis. Any late notification is not acceptable.
- ※ The range for each exam depends on the speed of my lecture. On average, I will teach one chapter in a three-hour lecture. The range is not accumulative for the final exam.
- ※ The format of both exams: 30% for term explanation and 70% for calculation problems. All calculation problems are collected from the quizzes and questions at the end of each chapter in the required text with minor modifications.
- ※ Students should prepare your personal calculators for the two exams. Note the calculators should at least be able to compute the exponential and natural log functions, but the calculators cannot have the memorizing function.
- ※ To maintain the fairness in the class, there are no make-up exams or other alternatives for exams. I will ignore all emails asking for any alternatives to make up your grades.
- ※ The rule of ALTERNATE SEATING is enforced. Any dishonesty in the exams will

lead to a failed result.

- ※ Grades of the midterm exam will be released on Apr. 23rd, but grades of the final exam will not be released.
- ※ I will curve your final grades such that the average of the grades in this class is comparable to other courses offered by College of Management of NTU.

RULES IN CLASS

- ※ DO NOT DISTRACT other students from listening to my lecture, e.g., do not chat with other students when I am talking.
- ※ If you have any questions during my lecture, FEEL FREE to INTERRUPT me by raising your hand.

COURSE SCHEDULE

Week	Date	Topic	Reading
1	Feb. 19	Introduction of syllabus and derivatives	Syllabus and Ch 1
2	Feb. 26	Different traders and why derivatives are used Mechanics of futures markets	Ch. 1 Ch. 2
3	Mar. 5	Mechanics of futures markets	Ch. 2
4	Mar. 12	Hedging strategies using futures	Ch. 3
5	Mar. 19	Hedging strategies using futures and Interest rates	Ch. 3 and Ch. 4
6	Mar. 26	Interest rates and Determination of forward and futures prices	Ch. 4 and Ch. 5
7	Apr. 2	Holiday (Study Day)	No lecture
8	Apr. 9	Determination of forward and futures prices	Ch. 5
9	Apr. 16	Midterm examination	
10	Apr. 23	Interest rate futures	Ch. 6
11	Apr. 30	Swaps	Ch. 7
12	May 7	Mechanics of options markets	Ch. 9
13	May 14	Properties of stock options	Ch. 10
14	May 21	Trading strategies involving options	Ch. 11
15	May 28	Introduction to binomial trees	Ch. 12
16	June 4	Valuing stock options: The Black-Scholes model	Ch. 13
17	June 11	Options on stocks indices and currencies	Ch. 15
18	June 18	Final examination	

- ※ Note that the above schedule is an estimated version, I will dynamically adjust the speed of my lecture according to the feedback of students.
- ※ Chapter 8 (the credit crisis in 2007) and Chapter 14 (employee stock options) are skipped in order to introduce more content in the limited time of this semester.

OFFICE HOURS

Tuesday 15:30-16:30 and Thursday 15:30-16:30

Room 513, Building 2, College of Management

- ※ It is not suggested to ask academic questions in emails. The face-to-face communication is the best way to make me understand your questions and give you the most accurate instruction to solve your problems.
- ※ If you have difficulties to solve the quizzes or questions at the end of each chapter, please write an email to ask the teaching assistant first.
- ※ Try to fully utilize the office hours before making an individual appointment.

TEACHING ASSISTANT

XXX XXXXXXXX@ntu.edu.tw