

ECO 4378: Financial Economics and Investment Behavior (Financial Derivatives)

Syllabus

Schedule: Tue, Thu @ 6:30-7:50 pm, Lee 241
Instructor: Mr. Jian Hu
Email: jianh@smu.edu
Office Hours: Tue, Thu @ 3:20-4:20 pm, Lee 301-O
Course Documents: All course documents will be downloadable on [Blackboard](#) system.

Prerequisites

Prerequisite: C- or better in ECO 3301, ECO 4368 or FINA 3320, and ITOM 2305 or STAT 2302, 2331 or 4340, or permission of instructor (ECO 4378 cannot be taken if student has taken FINA 4320 or 4326). It is very important for students to take ECO 4368 before taking this course since the core exam will cover both courses.

Required Textbook

“Options, Futures, and Other Derivatives”, (7th edition), by John C. Hull

Recommended Textbooks and Online Resources

1. “Derivatives Markets” by Robert L. McDonald
2. “Fundamentals of Futures and Options Markets” (6th edition) by John C. Hull
3. “Analysis of Derivatives for the CFA Program” by Don M. Chance.
4. The three most popular newspapers: *The Wall Street Journal*, *The New York Times*, and the *Financial Times*. All are available online at www.wsj.com, www.nytimes.com, and www.ft.com, respectively.

Required Financial Calculator

A [Texas Instruments BAI Plus](#) financial calculator is required. (See [Guidebook](#) for instructions).

Course Description

This course mainly covers four types of financial derivatives: forward, futures, swap and options. The course objective is to give the student a basic understanding of how these products work, how they are priced, and how financial institutions hedge their risks when they trade the products.

Student Learning Outcomes

1. Understand basic concepts of financial derivatives like options, forwards, futures and swaps.
2. Know how to apply the derivatives framework into portfolio risk management and deal with interest rate risk, exchange rate risk and market risk.
3. Be able to price most basic types of derivatives and use them to construct hedging strategies.

Grading Policy

There is a total of 100 points for the course, with the following breakdown:

Attendance and Class Participation	10%
Quizzes	10%
Assignments	10%
Three Midterms	50%
Core Exam	20%

- Attendance and Class Participation:** This course is challenging and very math-intensive, hence attendance is absolutely mandatory. An attendance sheet will be distributed during each class session. **Class rules:** 1) Come to class on time and stay to the end. If you have to leave early, let me know before the class and leave quietly. However, leaving the class early will not be taken as “attendance” for any reason. 2) No laptops booted up during my class. 3) All cell phones are to be turned off. You are not allowed to text message or to take calls in my class. 4) You are not allowed to eat in my class, but you may bring a drink.
- Quizzes:** A few of 10-minute close-book quizzes will be held in class at randomly chosen class meetings without early notice. They will be only related to material that has been covered in class recently. There is no make-up quiz for any reason. No quiz will be excused under any circumstance. The lowest quiz grade will be dropped.
- Assignments:** Assignments should be turned in at the beginning of or prior to the class time on the specific due date. Late assignments will not be accepted for any reason, but the lowest assignment grade will be dropped.
- Midterms:** There will be 3 midterms and no final exam. The lowest test grade will be dropped from your overall 50% midterm grade. This means each test counts for 25%. All midterms will not be explicitly cumulative. These exams are all closed-notes and in-class, but you will be permitted a two-sided “cheat-sheet” with notes and/or formulas.
- Core Exam:** The core exam will be administered on Thursday, November 19th. It is required and counts for 20% toward your course grade. No make-ups for the core exam will be offered for any reason. The exam aims to test your knowledge of financial economics learned from this course and the previous course ECO4368. It is therefore cumulative.

6. **Scheduled Exam Dates**

1st Midterm	September 29 th (Tuesday)
2nd Midterm	October 29 th (Thursday)
Core Exam	November 19 th (Thursday)
3rd Midterm	December 8 th (Tuesday)

Make-up Exam Policy

There is no make-up quiz for any reason. Absolutely no make-ups for midterm and core exams will be offered for any reason (including any emergency, family tragedy, etc.) If you miss one midterm, you will get zero on that test, and the zero test grade will be automatically dropped.

Tentative Course Outline

- Forward Contracts
- Call and Put Options, Put-Call Parity

3. No Arbitrage Rules for Option Prices.
4. Basic Trading Strategies Using Options
5. Option Valuation: The Binomial Model
6. Interest Rate Swaps
7. Swap Design, Comparative Advantage Argument
8. Managing Interest Rate Risk, Duration Hedging with Swaps
9. Hedging Market Risk with Stock Index Options
10. Portfolio Delta, Delta Risk Management (optional)
11. Exotic Options, Shout Option, Binary Options (optional)

Honor Code

All work undertaken and submitted in this course is governed by the University's honor code. If any student is unclear about the University's honor policy – either in general or its particular application in this course – please contact me immediately.

Disability Accommodations

Students needing academic accommodations for a disability must first contact Ms. Rebecca Marin, Coordinator, Services for Students with Disabilities (214-768-4557) to verify the disability and establish eligibility for accommodations. They should then schedule an appointment with the professor to make appropriate arrangements. (See University Policy No. 2.4.)

Religious Observance

Religiously observant students wishing to be absent on holidays that require missing class should notify their professors in writing at the beginning of the semester, and should discuss with them, in advance, acceptable ways of making up any work missed because of the absence. (See University Policy No. 1.9.)

Excused Absences for University Extracurricular Activities

Students participating in an officially sanctioned, scheduled University extracurricular activity should be given the opportunity to make up class assignments or other graded assignments missed as a result of their participation. It is the responsibility of the student to make arrangements with the instructor prior to any missed scheduled examination or other missed assignment for making up the work. (University Undergraduate Catalogue.)

Important Dates

September 9, Wednesday: Follows Monday Class Schedule.

November 10, Tuesday: Last day to drop a course.