



BU263 Risk Management and Derivatives (Online)

Instructor Information	Zhu Jie Home Institution: Shanghai University Email: zhu_jie@t.shu.edu.cn Office Hours: Determined by Instructor		
Term	June 27, 2022 - July 22, 2022	Credits	4 units
Course Delivery	The class will be delivered in online format. Other than recorded lecture videos, the instructor will arrange 2.5 hours' real-time interactions with students per week (via discussion forum, Zoom meetings, and WeChat). The workload students are expected to complete to properly pass this course is about 15 hours per week.		
Required Texts (with ISBN)	Options, Futures, and Other Derivatives, 10th Edition, John C. Hull, Pearson Press		
Prerequisite	N/A		



Course Overview

This course covers one of the most exciting and important areas in finance: derivatives. The growth in global markets for exchange-traded Options and Futures contracts on financial securities (foreign exchange, fixed income and equity securities, and stock indices) and on commodities has been accompanied by equally phenomenal and much more profitable growth in Over-the-Counter (OTC) markets for swaps, related options, credit derivatives, structured products, and by the process of securitization. Financial derivatives can be used for purpose as hedge, arbitrage or speculate. This course first introduces the fundamental concept of derivatives. Students will first learn how the derivatives market works. They then learn the trading mechanism and how to price of these derivatives based on the arbitrage argument. Applications such as risk management including derivatives will also be introduced.

Learning Outcomes

1. Students will learn the core concept in the financial derivatives market such as hedge, arbitrage, and speculation.
2. Students will exploit how to use arbitrage arguments to price derivatives
3. Students will learn to make use of utility theory and mathematical optimization models to determine optimal decisions.
4. Students will learn how to use derivatives in risk management.

Course Procedure

The subject is basically taught in lectures, exercises and assignments, and self-managed learning materials in print and electronic formats. The lectures provide the structure of the topic area, discussion of the theory and some practical examples. The exercises and assignments provide an opportunity to better understand concepts and make practical application of these theories to financial derivatives. Especially for the application of financial derivatives in hedge, arbitrage and speculation. Students are expected to at least attempt to solve these questions beforehand and actively participate in class discussions about exercises and assignments.

Lecture Materials

Course Text: Options, Futures, and Other Derivatives, 10th Edition, John C. Hull, Pearson Press

Reference Book: Fundamentals of Futures and Options Markets, 9th Edition, John C. Hull, Pearson Press



Grading Policy

Assignment 1 & 2	20%
Mid-term exam	30%
Final Exam	50%

Grading Scale is as follows

Number grade	Letter grade	GPA
90-100	A	4.0
85-89	A-	3.7
80-84	B+	3.3
75-79	B	3.0
70-74	B-	2.7
67-69	C+	2.3
65-66	C	2.0
62-64	C-	1.7
60-61	D	1.0
≤59	F (Failure)	0



Class Schedule

Date	Lecture	Readings	Online Teaching Arrangement
Day 1	Introduction	Chapter 1	Approximately 120 minutes recorded lecture video
Day 2	Mechanics of Forward and Futures Markets	Chapter 2	Approximately 120 minutes recorded lecture video
Day 3	Hedging Strategies Using Futures and Forwards	Chapter 3	Approximately 120 minutes recorded lecture video
Day 4	Hedging Examples	Chapter 3	Approximately 120 minutes recorded lecture video
Day 5	Interest Rates	Chapter 4	Approximately 120 minutes recorded lecture video
Day 6	Determination of Forward and Futures Prices	Chapter 5	Approximately 120 minutes recorded lecture video
Day 7	Forward Rates and Interest Rate Futures	Chapter 6	Approximately 120 minutes recorded lecture video
Day 8	Swaps	Chapter 7	Approximately 120 minutes recorded lecture video
Day 9	Review/Assignment due		Approximately 120 minutes online interaction
Day 10	Mid-term Exam		Online exam
Day 11	Mechanics of Options Markets	Chapter 10	Approximately 120 minutes recorded lecture video
Day 12	Properties of Stock Options	Chapter 11	Approximately 120 minutes recorded lecture video
Day 13	Trading Strategies Involving Options	Chapter 12	Approximately 120 minutes recorded lecture video
Day 14	Binomial Trees	Chapter 13	Approximately 120 minutes recorded lecture video
Day 15	Introduction to Stochastic Process	Chapter 14	Approximately 120 minutes recorded lecture video
Day 16	Wiener Processes and Ito's Lemma	Chapter 14	Approximately 120 minutes recorded lecture video
Day 17	Black-Scholes Option Formula	Chapter 15	Approximately 120 minutes recorded lecture video
Day 18	Applications of Black-Scholes Option Formula	Chapter 15	Approximately 120 minutes recorded lecture video
Day 19	Review/Assignment due		Approximately 120 minutes online interaction
Day 20	Final Exam		Online exam

Please note that online teaching arrangement is possible to be adjusted.