



Derivative Securities (Undergraduate)

International Academic Camp Course Syllabus

Fudan Campus, 2019 December

Study Term:

Winter, 09/12/2019 - 27/12/2019

Study Level:

Undergraduate

Class hours:

8:55 - 11:35

Location:

No.220 Handan Rd, Shanghai, China.

Course Description:

Financial derivatives have become extremely popular over the past several decades, as they provide a cheap and flexible way for market participants to tailor the amount of risk they choose to bear. This course introduces three main categories of derivative securities, i.e., options, forwards/futures and swaps. The objective of this course is to provide students with the intuition and the necessary skills to value and apply these basic financial derivatives under different scenarios, i.e., risk management. Specific topics that will be covered include interest rate measurement, no-arbitrage argument, and trading strategies involving options, hedging principles, Binomial trees and Black-Scholes-Merton model.

Course Goals:

On successful completion of this course you will be able to:

- Understand the properties, risk and theoretical valuation of forwards/futures, swaps and options and explain the structural similarity and differences among them;
- Understand how forwards/futures, swaps and options are traded in exchanges and/or over-the-counter markets;
- Compare relative performance of various financial instruments and investment strategies involving financial derivatives;
- Understand the assumptions of Black-Scholes-Merton model and apply it in pricing or identifying profit opportunities in financial instruments (including financial derivatives and their underlyings);
- Implement binomial model to value customized derivative contracts;
- Develop hedge/arbitrage strategies with financial derivatives under different scenarios and understand market failures caused by excessive risk-taking with financial derivatives.

Required Texts:

John C Hull. *Fundamentals of Futures and Options Markets*: Global Edition (8th edition).



Assessment:

Assessment Task	Weighting	Due Date
Two Take-home Individual Assignments:	2 x 10%	TBD
2-hour Mid-term Exam (Close-book)	40%	TBD
2-hour Final Exam (Close-book)	40%	TBD

Course Schedule:

Day	Date	Topic	Chapter	Assessments
1	09/12/2019	Introduction	1	
2	10/12/2019	Mechanics of Futures Contract	2	
3	11/12/2019	Hedging Strategies Using Futures	3	
4	12/12/2019	Interest Rates	4	Take-Home Individual Assignment due
5	13/12/2019	Determination of Forward and Future Prices	5	
SATURDAY & SUNDAY				
6	16/12/2019	Interest Rate Futures	6	
7	17/12/2019	Swaps	7	
8	18/12/2019	Middle Exam Review	N/A	2-Hours Close-book Mid-term Exam
9	19/12/2019	Mechanics of Option Markets	9	
10	20/12/2019	Properties of Stock Options	10	
SATURDAY & SUNDAY				
11	23/12/2019	Trading Strategies Involving Options	11	
12	24/12/2019	Introduction to Binomial Trees	12	Take-Home Individual Assignment due
13	25/12/2019	The Black-Sholes-Merton Model	13	
14	26/12/2019	The Greek Letters	17	
15	27/12/2019	Final Exam Review	N/A	