北京理工大学学术学分课程

BIT Academic Credit Courses Program

FIN572 - DERIVATIVES VALUATION AND RISK MANAGEMENT

Syllabus

Jun. 28 - Jul. 16, 2021

Term Duration: Jun. 28 – Jul. 16, 2021
Credit Points: 4
Level: Undergraduate
Instructor Name: TBA
Home Institution: Beijing Institute of Technology
Lecture Hour: 12:30-15:30

Course Description

The course provides an advanced insight in Finance of the design, use and pricing of derivatives in risk management. The course emphasizes on the derivatives securities and risk management, including an introductory theory and a working knowledge of futures, options, and swaps. Working knowledge components will cover the main types of derivatives contracts and valuation techniques as well as advanced quantitative analytical methods.

Course Aims

Upon successful completion of this course, students should be able to:

1. have a profound insight of the pricing and the use of financial derivatives, including options, forwards, futures and swaps in risk management;
2. acquire the necessary skills to value and employ derivatives to hedge particular kinds of risk or to change the returns on the portfolios;

3. develop the abilities to apply the theories to risk management with financial derivatives;
4. develop competencies in pricing, hedging and trading strategies.

Language of Instruction

English

Required Textbook

Options, Futures and other Derivatives: 8th. Edition
Author: John C. Hull
Publisher: Pearson
ISBN: 9780136015864

Course Hours

This course requires 48 hours of contact including 42 hours of lectures and one 6-hour field trip. Lectures are from Monday to Friday.

Prerequisite Course

Students are expected to have taken **Principles of Finance** and an introductory course of statistics for finance and business, or have solid knowledge of all topics covered in the courses mentioned above.

Course Schedule

Week	Day	Chapter	Topic	Assignment/ Notes
Week 1	Day 1	Introduction	Overview of Derivative Securities	Group Discussion: Forward, Futures and Options
	Day 2	Chapter 2, 4	Introduction to Mechanics of Futures Markets, Interest Rates and Interest Rate Futures I	Theories of the Term Structure of Interest Rates
	Day 3	Chapter3, 5	Hedging Strategies Using Futures	Forward Prices and Futures Prices
	Day 4	Chapter 6	Introduction to Mechanics of Futures Markets, Interest Rates and Interest Rate Futures II	Team Work: Interest Rates and Interest Rate Futures
	Day 5	Chapter 7, 8	General Analysis of Currency Swaps and Securitization	Valuation of Currency Swaps and Credit Risk
Week 2	Day 6	Chapter 9, 11	Basic Introduction to Trading Strategies Involving Options	Group Discussion: Trading Strategies
	Day 7	Chapter 12, 13	Binomial Option Pricing Models and Wiener processes and Ito's Lemma	Binomial Option Pricing Models
	Day 8	Chapter 14	General Analysis of The Black-Scholes-Merton Model	Group Discussion
	Day 9	Chapter 25, 27	Analysis of Multiple Stock Portfolio	Portfolio of Two Stocks
	Day 10		Field trip at fortune 500 company	Case study
Week 3	Day 11	Chapter17, 25	Futures Options, Exotic Options and Real Options	Group Discussion: Futures Options, Exotic Options and Real Options
	Day 12	Chapter 20, 26	Analysis of Numerical Procedures	Alternatives to Black-Scho1es-Mert on
	Day 13	Chapter 33, 35	Credit Derivatives and Risk, Energy and Commodity Derivatives	Pricing Weather and Insurance Derivatives
	Day 14	Guided Revision		
	Day 15	Final Exam		

Note: Due to the epidemic situation, field trip listed in above schedule is subject to change.

Grading Policy

Items	Percentage
Attendance	10%
Case study and Group Work	40%
Final Exam	50%
Total	100%

Academic Honesty

Academic honesty is not only a fundamental part of learning and teaching, but also a core value that this course embraces. Behaviors of academic dishonesty, as outlined hereinafter, are unacceptable and will be penalized:

a) Plagiarism where students present work for assessment, publication or otherwise that is not their own, without appropriate attribution or reference to the original source. Plagiarism can include:
    i) paraphrasing or copying published and unpublished work without a reference;
    ii) adopting the ideas or concepts of others, including the structure of an existing analysis without due acknowledgement by way of reference to the original work or source.
b) Collusion, where students present work as independent work when it has in fact been produced in whole or in part with others unless prior permission for joint or collaborative work has been given by the Course Coordinator. Collusion can include:
    i) a student inappropriately assisting with or accepting assistance with the production of an assessment task;
    ii) submitting work which is the same or substantially similar as another student's work for the same assessment task.
c) Cheating, where a student acts in such a way as to seek to gain unfair advantage or assist another student to do so. Cheating can include:
    i) submitting falsified, copied or improperly obtained data relating to results of practicum, field trips or other work as if they were genuine; submitting an assessment task with the intention of deceiving or misleading the instructor about the student's contribution to the work;
    ii) submitting an assessment task written or answered for the student by another person or which the student has copied from another person;
    iii) submitting the same or a substantially similar piece of work for assessment in two different courses (except in accordance with approved study and assessment schemes);
    iv) a student falsely indicating that they have been present at an activity where attendance is required;
    v) completing an assessment task outside the conditions specified for that task.
d) Cheating in Examinations means engaging in dishonest practice or breaching the rules regarding examinations, which can include:

i) communicating in any way during an examination with any person who is not an examination supervisor inside or outside the examination venue;
ii) giving or accepting assistance from any person who is not an examination supervisor whilst in the examination venue;
iii) reading, copying from or otherwise using another student's work in an examination or knowingly allowing a student to do so;
iv) possessing, referring to or having access to any material or device containing information directly or indirectly related to the subject matter under examination, other than that explicitly approved by the Course Coordinator;
v) acquiring, or attempting to acquire, possess or distribute examination materials or information without approval;
vi) permitting another person to attend an examination on a student's behalf or attending an examination on behalf of another student;

e) Other dishonest acts including but not limited to:
i) altering or falsifying any document or record for the purposes of gaining academic advantage;
ii) offering or giving money or any item or service to a University staff member or any other person to gain academic advantage for the student or another person;
iii) inventing references.