



浙江大學

FINS582

**Derivative Securities and
Risk Management**

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Derivative Securities and Risk Management

Instructor contact details

Lecturer-in-charge: Professor Xin Hong

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Office location: to be announced

Consultation Times: to be announced, and by appointment

Teaching Times and Locations

The Time and Location: TBA

Lecture sessions include lectures, as well as in-class discussions and test(s).

Units of Credit

The course is worth 6 units of credit, with total of 40 teaching hours.

Course Description

This course introduces students to financial derivatives through both theoretical and practically applicable knowledge. It will be focusing on how derivatives are used in managing financial risks. Derivative securities covered in this unit will be including options, futures, forwards and swaps. It will be looking into basic pricing principles that are largely relevant to derivatives in the financial markets for the theoretical component of the course. For practical knowledge, students will look into the different types of derivative contracts and valuation techniques used in the industry today. Students will be well equipped with both analytical and problem solving skills through interactive classes which prepare them for contemporary workplace issues. They will be able to obtain the knowledge and skills necessary for effectively resolving genuine problems in the industry,

Prerequisites

None

Learning Resources

Required textbook: Chance, D and Brooks, R. (2014). 10th Edition, Introduction to Derivatives and Risk Management, Cengage Learning.

Learning Objectives

By the end of this course you should be able to:

1. Identify the most common derivatives and apply the fundamental principles of derivatives pricing in different contexts;
2. Develop an understanding of the economic intuition underlying option pricing;
3. Outline the correct derivatives used for hedging the different types of risks;
4. Understand and evaluate the shortcomings of hedging as well as the general health of the financial markets;
5. Describe the adverse consequences of financial derivatives and how it can be exploited by unscrupulous individuals.

Course Delivery

The course will be taught in English through lectures, tutorials, group activities, student projects and presentations. In addition to these, there will also be guest speakers and optional field trips available for students who would like to enhance their learning experience. The course will be delivered within 16 sessions, with each session totaling 2.5 hours-inclusive of both a lecture/seminar and tutorial. These sessions will be running during the weekdays, Monday to Friday. The course will be at total 40 hours.

Topics and Course Schedule:

| Topic | Description | Activities |
|------------------------------------|--|---|
| Introduction to Derivatives | <ul style="list-style-type: none">• An overview of on derivatives• Origins and development• Types of derivatives | Lecture; class discussion |
| Derivative Markets | <ul style="list-style-type: none">• Introductions and revolution of derivative markets• Structure of derivative markets | Lecture; class discussion |
| Options Pricing | <ul style="list-style-type: none">• Principles of options pricing• Value of a call• Effect of time• Effect of interest rates | Lecture; class discussion; Case studies |
| Options Pricing Model | <ul style="list-style-type: none">• The Binomial model• Hedge portfolio• Overpriced call• Underpriced call | Lecture; class discussion |
| Options Pricing Model | <ul style="list-style-type: none">• Origins of The Black-Scholes-Merton Model• Assumptions of this formula• Stock price, exercise price• Standard deviation | Lecture; class discussion |
| Option Strategies | <ul style="list-style-type: none">• Key terms• Stock transactions• Call option transactions• Put option transactions• Calls and stock | Lecture; class discussion; Class quiz 1 |
| Advanced Option Strategies | <ul style="list-style-type: none">• The modified butterfly• Key criterias to consider | Lecture; class discussion |
| Principles of Pricing | <ul style="list-style-type: none">• Pricing derivative securities | Lecture; class discussion |

| | | |
|--|---|---|
| <p>Futures and Forwards</p> | <ul style="list-style-type: none"> ● Key differences ● Settlement of contracts ● Speculation and hedging | <p>Lecture; class discussion</p> |
| <p>Options on Futures</p> | <ul style="list-style-type: none"> ● Contracting ● Expiration Dates ● Strike Price ● Pricing ● Exercise and assignment | <p>Lecture; class discussion; Case studies</p> |
| <p>Futures Arbitrage Strategies</p> | <ul style="list-style-type: none"> ● Exploiting pricing inefficiencies ● Riskless profits | <p>Lecture; class discussion; Class quiz 2</p> |
| <p>Hedging</p> | <ul style="list-style-type: none"> ● Importance of hedging ● Short hedge and long hedge ● Hedging strategies | <p>Lecture; class discussion; Individual assignment submission</p> |
| <p>Swaps</p> | <ul style="list-style-type: none"> ● Interest rate swaps ● Currency Swaps ● Equity Swaps | <p>Lecture; Case studies; Final exam</p> |

Assessments:

| | | |
|-----------------------|-----|--------------------|
| Class participation | 10% | Every Day in class |
| Class Quiz 1 | 15% | 29/12/2019 |
| Class Quiz 2 | 15% | 07/01/2020 |
| Individual assignment | 20% | 09/01/2020 |
| Final Exam | 40% | 10/01/2020 |

Details on each of the assessments will be discussed during class lectures.

Class (Tutorial) participation (10%):

Active engagement in class activities and discussions are encouraged to consolidate what has been learnt in lectures. Class participation is essential towards developing a comprehensive understanding on the learning outcomes and expectations placed on students. Students are expected to participate and actively engage in all class discussions in order to ensure that they gain a more holistic learning experience. Those who are unwilling to contribute or participate in class discussions should expect relatively low class participation grade even if they are physically present in all classes.

To further enhance the learning experience, it is also important for you to engage in regular discussions with other students, in exchanging knowledge and ideas with regards to this course and its key topics. Students are expected to be present and punctual for all their classes. Lateness and causing disruption to other students is not acceptable and will not be tolerated. Doing so will lead to the deduction of class participation marks. Students are expected to be respectful towards their peers, their lecturers and all other staff members. If you are not ready to meet these basic expectations, this may not be a suitable option of study for you.

In class quiz (15% each):

Type: Quiz

Total weight: 30%

Length: A 45 minutes quiz conducted in the class.

Task: This is a closed book examination.

Details of the test will be announced and discussed in class.

Individual Assignment (20%):

Students will be completing an assignment relating to course topics. They are required to work individually to complete this task and present it to the class through a speech (optional). Details of the assignment will be announced and discussed during the class.

- 5 pages maximum in A4,
- 12 point Times New Roman font
- Single line spacing
- Late submission will attract a penalty of 10% of the total weighting of the assessment task. A 10% deduction applies for EACH late day and the assessment will not be accepted after 5 working days. Extensions will only be granted upon the basis that there is reasonable medical evidence of illness or any other extreme circumstances that the university may place under consideration. Under no circumstances will extensions be granted for work or any other commitments. A request for an extension must formally be submitted to the lecturer in writing prior to the due date, in accordance with the university's assessment policies. Medical certificates or other evidence of extreme misfortune must be submitted through a special consideration form and must contain information that justifies the extension sought.

Final examination (40%):

Type: Examination

Weight: 40%

Length: A two hours formal final examination will be scheduled by the lecture and conducted in the class.

Task: This is a closed book examination.

Students should expect a variety of differently structured questions such as multiple choice answers, short answer questions, and extended responses. Students are expected to attempt all components of the exam to their best of their abilities. Students will be provided with sample questions and a comprehensive explanation on exam instructions.

Please make sure that you are physically present in all classes, especially on examination dates. No make-up tests or examinations will be provided.

Grade Descriptors:

| | | |
|----|------------------|--------|
| HD | High Distinction | 85-100 |
| D | Distinction | 75-84 |
| Cr | Credit | 65-74 |
| P | Pass | 50-64 |
| F | Fail | 0-49 |

High Distinction 85-100

Treatment of material evidences an advanced synthesis of ideas
Demonstration of initiative, complex understanding and analysis
Work is well-written and stylistically sophisticated, including appropriate referencing, clarity, and some creativity where appropriate
All criteria addressed to a high level

Distinction 75-84

Treatment of material evidences an advanced understanding of ideas
Demonstration of initiative, complex understanding and analysis
Work is well-written and stylistically strong
All criteria addressed strongly

Credit 65-74

Treatment of material displays a good understanding of ideas
Work is well-written and stylistically sound, with a minimum of syntactical errors
All criteria addressed clearly

Pass 50-64

Treatment of material indicates a satisfactory understanding of ideas
Work is adequately written, with some syntactical errors
Most criteria addressed adequately

Fail 0-49

Treatment of ideas indicates an inadequate understanding of ideas
Written style inappropriate to task; major problems with expression
Most criteria not clearly or adequately addressed

Academic Integrity:

Students are expected to uphold the university's academic honesty principles which are an integral part of the university's core values and principles. If a student fails to observe the acceptable standards of academic honesty, they could attract penalties and even disqualification from the course in more serious circumstances. Students are responsible for knowing and observing accepted principles of research, writing and any other task which they are required to complete.

Academic dishonesty or cheating includes acts of plagiarism, misrepresentation, fabrication, failure to reference materials used properly and forgery. These may include, but are not limited to: claiming the work of others as your own, deliberately applying false and inaccurate information, copying the work of others in part or whole, allowing others in the course to copy your work in part or whole, failing to appropriately acknowledge the work of other scholars/authors through acceptable referencing standards, purchasing papers or writing papers for other students and submitting the same paper twice for the same subject.

This Academic Integrity policy applies to all undergraduates of the Zhejiang University in all programmes of study, including non-graduating students. It is to reinforce the University's commitment to maintain integrity and honesty in all academic activities of the University community.

Policy:

- The foundation of good academic work is honesty. Maintaining academic integrity upholds the standards of the University.
- The responsibility for maintaining integrity in all the activities of the academic community lies with the students as well as the faculty and the University. Everyone in this community must work together to ensure that the values of truth, trust and justice are upheld.
- Academic dishonesty affects the University's reputation and devalues the degrees offered.
- The University will impose serious penalties on students who are found to have violated this Policy. The following penalties may be imposed:
 - o Expulsion;
 - o Suspension;
 - o Zero mark/fail grade;
 - o Marking down;
 - o Re-doing/re-submitting of assignments or reports; and
 - o Verbal or written warning.