



浙江大學

**FINS982**

**Derivative Securities and Risk  
Management**

## **FINS982**

### **Derivative Securities and Risk Management**

#### Instructor Contact Details

Lecturer-in-charge: Botao Yang

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Office location: Huajiachi Campus, Zhejiang University Consultation Time: to be announced, and by appointment.

#### Teaching Times, Modes and Locations

Course Duration: 21 Dec 2025 to 09 Jan 2026

Modes: Face-to-face

Location: Huajiachi Campus, Zhejiang University via face-to-face

#### Academic Level

Postgraduate

#### Units of Credit

The course is worth 6 units of credit.

#### Credit Hours

The number of credit hours of this course equals to the credits of a standard semester-long course.

#### Contact Hours

The course contains a total of 53 contact hours, which consists of orientation, lectures, seminars, quiz, discussion, research, case study, small tests, assignments, on-site field trip(s), in-class and after-class activities, revision, and final exam.

Students will receive an official transcript which is issued by Zhejiang University when completing this course.

### Course Description:

This course extensively explores the strategic utilization of financial derivatives for risk management, encompassing options, forward contracts, futures contracts, and swaps. Notably, the global financial derivatives markets have witnessed substantial growth in recent years, marked by the rapid expansion of options and futures contracts, both in the realm of financial securities and commodities within regulated exchanges. Simultaneously, there has been a significant rise in the highly profitable Over the Counter (OTC) markets for related options, credit derivatives, swaps, structured products, and the securitization process. The course commences with a foundational introduction to derivatives, providing insight into how the derivatives market operates. It proceeds to explore the trading mechanisms and pricing of these derivatives through arbitrage reasoning. The primary focus is on risk management, encompassing the measurement and mitigation of various financial risks, including market risk, interest rate risk, credit risk, and more, facilitated by the incorporation of financial derivatives. Students are equipped with the skills to utilize forwards and futures for implementing hedging strategies, all while embracing risk management practices that incorporate options. Additionally, this unit offers an introductory perspective on derivative securities such as options, futures, and swaps, all of which are derived from fundamental securities like equities and bonds. The unit goes on to examine the unique characteristics of each derivative security and provides a comprehensive treatment of their pricing and application in investment management and risk management endeavors.

### Prerequisite:

Prior knowledge in fundamental Finance is required for taking this course.

### Learning Resources

Options, Futures and Other Derivatives, Global Edition, 11th edition, by John C. Hull, Pearson, 2021.

The Black Swan: The Impact of the Highly Improbable. 2nd Edition. Random House LLC, by Taleb, N. N., 2010

### Learning Objectives

By the end of this course, students should be able to:

- Explain the definitions and uses of a variety of derivatives, e.g., futures, options, swaps, and some exotic options.
- Develop an understanding of the economic intuition underlying option pricing.

- Outline the correct derivatives used for hedging the different types of risks.
- Understand and evaluate the shortcomings of hedging as well as the general health of the financial markets.
- Communicate financial derivatives pricing and risk management ideas in a clear and succinct manner.
- Demonstrate the ability to recognize and differentiate between the diverse categories of derivative instruments available.

Course Delivery:

- Face-to-face Lecture mode includes lectures, seminars, quiz, discussion, research, case study, small tests, assignments, on-site field trip(s), in-class and after-class activities, revision, and final exam.
- The following course will be taught in English. There will also be guest speakers and optional field trips available for students who would like to enhance their learning experience. All courses and other sessions will run during weekdays.

Topics and Course Schedule:

Topic	Activities
Introduction to Derivative Securities and Practical Examples	Week1 Lecture; Tutorial
Exploring Futures Markets and the Role of Central Counterparties	Week1 Lecture; Tutorial
Implementing Hedging Strategies with Futures Contracts	Week1 Lecture; Tutorial
Understanding the Determinants of Forward and Futures Prices	Week1 Lecture; Tutorial
Swaps and Interest Rates	Week2 Lecture; Tutorial

Mechanics of Options Markets and Their Operation	Week2 Lecture; Tutorial
Properties of Stock Options and Review	Week2 Lecture; Tutorial
Crafting Trading Strategies Involving Options	Week2 Lecture; Tutorial
Option Pricing: Binomial Trees and The Black-Scholes-Merton Model	Week3 Lecture; Tutorial
Grasping the Greek Letters and Their Significance	Week3 Lecture; Tutorial
Value at Risk and Expected Shortfall	Week3 Lecture; Tutorial
Course Review	Week3 Lecture; Tutorial
Final exam	

### Assessments:

Class participation	15%
Class works	15%
Critical review	20%
Final exam	50%

### 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 students of the Zhejiang University in all programs 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:

- ✓ Expulsion
- ✓ Suspension
- ✓ Zero mark /fail grade
- ✓ Marking down
- ✓ Re-doing/re-submitting of assignments or reports, and
- ✓ Verbal or written warning.