

## Course Syllabus (Financial Risk Management)

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| <b>Course Chinese Title:</b> 金融风险管理   |   | <b>Course Category (Compulsory/ Elective) :</b> Elective |  |
| <b>Course English Title:</b> Financial Risk Management  |   |  |  |
| <b>Total Hours/ Hours Per Week/ Credit(s):</b> 32/4/2   |   | <b>Lab Practice/ Practical Hours:</b> None               |  |
| <b>Prerequisites:</b> Financial Accounting, Investment, Security Investment   |   |  |  |
| <b>Follow-up course:</b> none   |   |  |  |
| <b>Time:</b> 10:25-12:00, Wednesday and Friday  |   | <b>Classroom:</b> R1201, Guancheng Campus                |  |
| <b>Class:</b> 2020 Economics and Finance (Financial Management Industry-University International Program,)  |   |  |  |
| <b>College:</b> School of Economics and Management  |   |  |  |
| <b>Instructor Name/ Academic Title:</b> Chunyang Huang/Lecturer   |   |  |  |
| <b>Office Hour:</b> 10:30-12:00 Thursday at Room 2302, Guanchen Campus/ <b>Online:</b> WeChat group   |   |  |  |
| <b>Course Assessment Method:</b> Open book test ( )    Close book test ( )    Report ( ✓ )    Other (✓), see Assessment and Grading table below   |   |  |  |
| <b>Required Textbook:</b> None, lecture notes and slides will be delivered before every meeting.  |   |  |  |
| <b>Supplementary Materials:</b> Financial Derivatives and Risk Management., Don. M. Chance, 中国人民大学出版社, 第十版  |   |  |  |
| <b>Course Description:</b><br>Financial markets and tools were originally developed to manage risks. As such, risk management is the cornerstone of finance subject. This course introduces the basic concepts, principles, methodologies, and techniques for financial risk management. It focuses on various financial derivatives and their applications in real world financial markets. In particular, concepts like option, future, forward, swap; risk management principles like hedging, arbitrage, insurance; models like binomial model, the Black-Scholes-Merton model; and various trading strategies based on financial derivatives will be discussed |   |  |  |
| <b>Course Learning Objectives and its supporting on the requirement for graduation:</b>   |   |  |  |
| <b>Course Learning Objectives</b>   | <b>Measurements on Requirement for Graduation</b> | <b>Requirement for Graduation</b>                        |  |
| <b>CO1:</b>   | <b>2.2</b> Familiar with the basic                | 2. Economics knowledge and skills:                       |  |

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| Understanding the key concepts, principles and methods in financial risk management                                       | principle and methodologies in financial management   | students should master the basic knowledge of economics disciplines and be familiar with the relevant policies, regulations and rules of international market, and have the ability to operate the whole process of market practices as well as the ability to engage in international trade, international investment, transnational business and management and economic theory and policy research in multinational corporations and government departments.                                    |
| CO2:<br>Analyze the observed risk management cases from the real-world financial markets with knowledge from this course. | <b>2.3</b> be able to analysis the financial management cases from real-work financial markets with clear logic | 2. Economics knowledge and skills: students should master the basic knowledge of economics disciplines and be familiar with the relevant policies, regulations and rules of international market, and have the ability to operate the whole process of market practices as well as the ability to engage in international trade, international investment, transnational business and management and economic theory and policy research in multinational corporations and government departments. |
| <b>CO3:</b><br>Apply the learned knowledge to your personal   | <b>6.3</b> be able to apply the learned knowledge to personal financial   | 6. Practical knowledge and practical ability: students should have strong sense  |

| financial risk management, and give advice to other people on their financial risk management. |                        |                |       | planing and management  |   | of autonomous learning, knowledge renewal and lifelong learning, and have practical knowledge and sustainable practical ability of their major. |   |                            |
|--|------------------------|----------------|-------|---|---|---|---|----------------------------|
| Lecturing Plan   |                        |                |       |   |   |   |   |                            |
| Week   | Topic                  | Instructor     | Hours | Contents（Key point、Difficulty、Ethical and political learning）   | Instructional Mode（Online/ Blending/ Offline） | Activities  | Assignment  | Expected Learning Outcomes |
| 1  | Overview of the course | Chunyang Huang | 2     | Contents:<br>introduction to the process of risk management<br><br>Key points: the importance of risk management<br><br>Difficulties:<br>financial risk | Offline                                       | Lecture   | Reading and discussion :<br>set 1 of materials distributed in the class | CO1<br>CO2<br>CO3          |
| 1  | Financial derivatives  | Chunyang Huang | 2     | Contents: options, futures, forwards and swaps<br><br>Key points: the characteristics of financial derivatives<br><br>Difficulties: the                 | Offline                                       | Lecture   | none  | CO1<br>CO2<br>CO3          |

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|   |                                 |                |   | relation between financial derivatives and the underlying assets   |         |         |      |                   |
| 2 | Option markets                  | Chunyang Huang | 2 | <p>Contents: markets for option</p> <p>Key points: the structure of option markets</p> <p>Difficulties: the return structure of option</p>                                 | Offline | Lecture | none | CO1<br>CO2<br>CO3 |
| 2 | Types of options                | Chunyang Huang | 2 | <p>Contents: various types of option</p> <p>Key points: the rights to option holders</p> <p>Difficulties: the difference between put and call options</p>                  | Offline | Lecture | none | CO1<br>CO2<br>CO3 |
| 3 | Principles of option pricing I  | Chunyang Huang |   | <p>Contents: principles of call option pricing</p> <p>Key points: factors affecting the value of a call option</p> <p>Difficulties: the lower bound of a European call</p> | Offline | Lecture | none | CO1<br>CO2<br>CO3 |
| 3 | Principles of option pricing II | Chunyang Huang | 2 | <p>Contents: principles of put option pricing</p> <p>Key points: factors affecting the value</p>   | Offline | Lecture | none | CO1<br>CO2<br>CO3 |


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|   |                            |                |   | of a put option<br>Difficulties: the lower bound of a European put  |         |         |  |                   |
| 4 | The Binomial Model         | Chunyang Huang | 2 | Contents: the Binomial option pricing model<br>Key points: the deduction of the binomial models<br>Difficulties: extensions of the binomial model<br><b>Ethical and Political Learnings:</b> the Binomial model should help students in understanding that everything should be done step by step | Offline | Lecture | none   | CO1<br>CO2<br>CO3 |
| 4 | The Black-Scholes Model I  | Chunyang Huang | 2 | Contents: the Black-Scholes model of option pricing<br>Key points: deduction of the Black-Scholes model<br>Difficulties: the numerical example  | Offline | Lecture | Reading and discussion : set 2 of materials distributed in the class | CO1<br>CO2<br>CO3 |
| 5 | The Black-Scholes Model II | Chunyang Huang | 2 | Contents: the Black-Scholes model of option pricing with dividend   | Offline | Lecture | none   | CO1<br>CO2<br>CO3 |

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|   |   |                   |   | Key points:<br>deduction of the<br>model<br><br>Difficulties:<br>application to an<br>American option   |         |         |      |                   |
| 5 | Basic option<br>strategies                            | Chunyang<br>Huang | 2 | Contents: trading<br>with options<br><br>Key points: option<br>trading strategies<br><br>Difficulties:<br>Synthetic puts and<br>calls strategies  | Offline | Lecture | none | CO1<br>CO2<br>CO3 |
| 6 | Forwards,<br>futures, and<br>swaps I                  | Chunyang<br>Huang | 2 | Contents: future and<br>forward markets<br><br>Key points:<br>characteristics of<br>futures and forwards<br><br>Difficulties: types of<br>futures | Offline | Lecture | none | CO1<br>CO2<br>CO3 |
| 6 | Forwards,<br>futures, and<br>swaps II                 | Chunyang<br>Huang | 2 | Contents: swaps<br>markes<br><br>Key points:<br>characteristics of<br>swaps<br><br>Difficulties: the<br>difference between<br>swaps and futures   | Offline | Lecture | none | CO1<br>CO2<br>CO3 |
| 7 | Principles of<br>pricing<br>forwards,<br>futures, and | Chunyang<br>Huang | 2 | Contents: future,<br>forwards, and swaps<br>pricing<br><br>Key points: the  | Offline | Lecture | none | CO1<br>CO2<br>CO3 |

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|   | swaps I   |                |   | <p>non-arbitraging principles</p> <p>Difficulties: future and forward pricing when the underlying asset generate cash flows</p> <p><b>Ethical and Political Learnings:</b> the non-arbitraging principles should help students in understanding the non-existence of “free lunch”</p> |         |         |      |                   |
| 7 | Principles of pricing forwards, futures, and swaps II | Chunyang Huang | 2 | <p>Contents: options on futures</p> <p>Key points: the pricing of options on futures</p> <p>Difficulties: the put-call parity</p>   | Offline | Lecture | none | CO1<br>CO2<br>CO3 |
| 8 | Forward and futures hedging                           | Chunyang Huang | 2 | <p>Contents: hedging risk with forwards and futures</p> <p>Key points: hedging combining futures, forward, and the underlying assets</p> <p>Difficulties: the hedging ratio</p> <p><b>Ethical and Political Learnings:</b> the concept of</p>   | Offline | Lecture | none | CO1<br>CO2<br>CO3 |

|        |                      |                |    |   |         |         |      |                   |
|--------|----------------------|----------------|----|---|---------|---------|------|-------------------|
|        |                      |                |    | hedging should help students in understanding the difference between hedging and gamble |         |         |      |                   |
| 8      | Review of the course | Chunyang Huang | 2  |   | Offline | Lecture | none | CO1<br>CO2<br>CO3 |
| Total: |                      |                | 32 |   |         |         |      |                   |

| Grading  |                        |  |            |                   |             |                              |
|--|------------------------|--|------------|-------------------|-------------|------------------------------|
| Course Learning Objectives   | Supported Measurements | Assessments and grading Percentage (%) |            |                   |             | Supporting Course Objectives |
|  |                        | Homework                               | Discussion | Literature Report | Final Paper |                              |
| CO1  | 2.2                    | 5                                      | 5          | 0                 | 40          | 50                           |
| CO2  | 2.3                    | 5                                      | 0          | 0                 | 30          | 35                           |
| CO3  | 6.3                    | 10                                     | 5          | 0                 | 0           | 15                           |
| Total  |                        | 20                                     | 10         | 0                 | 70          | 100                          |
| <b>Note:</b> (1) According to examination regulations of DGUT, students who have missed 3 classes (or 6 hours) are not allowed to take the final examination of the course. (2) Grading criteria & rubrics are shown in the Appendix |                        |  |            |                   |             |                              |

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| <b>Syllabus Submission Date: 2023.8.20</b> |   |
| <b>School Reviewal:</b><br>Agree           | Signature: <br>Date: 2023.8.28 |

**Note:**



## Appendix: Rubrics

### Reading and Discussion

| Measurement                       | Criteria  |  |  |   |
|-----------------------------------|---|--|--|---|
|                                   | A (100)   | B (85)   | C (70)   | D (0)   |
| Relevance<br>(CO1, CO2, CO3, 60%) | The discussion shows the student has read and understood the distributed materials; Questions and answers are creative and relevant to the course knowledge | The discussion shows the student has read and understood the distributed materials; Questions and answers are and relevant to the course knowledge | The discussion shows the student has read and understood the distributed materials | The discussion shows the student has not read the distributed materials |
| Participation<br>(CO1, 40%)       | Participate in every discussion sessions; have own opinion  | Participate in every discussion sessions   | Participate in 80% of the discussion session                                       | absent from every discussion session                                    |

### Final Term Paper

| Measurement       | Criteria                                  |   |   |   |
|-------------------|---|---|---|---|
|                   | A (100)                                   | B (85)                                    | C (70)                                    | D (0)                                     |
| Logic consistency | The data, analytic methodologies, and the | The data, analytic methodologies, and the | The data, analytic methodologies, and the | The data, analytic methodologies, and the |

|                               |   |  |   |   |
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| (CO2, 30%)                    | conclusion tell a coherent and consistent story; the assumptions are reasonably explained   | conclusion tell a coherent and consistent story  | conclusion tell a coherent and story  | conclusion are in conflicts with each others                                |
| Data collection<br>(CO3, 20%) | The data are collected from authoritative and reliable source; data collected are relevant and sufficient to the topic  | The data are collected from reliable source; data collected are relevant to the topic                                | data collected are relevant to the topic  | Data are not relative to the topic  |
| Analysis skills<br>(CO2,30%)  | The learned methodologies and quantitative models from the course are applied correctly; the calculation is correct; the analytic process is demonstrated clearly | The learned methodologies and quantitative models from the course are applied correctly; the calculation is correct; | The learned methodologies and quantitative models from the course are applied approximately correctly | The wrong methodologies and quantitative models from the course are applied |
| Wording<br>(CO1, 20%)         | The structure of the paper is completed and clear; there are less than 3 inappropriate words in the paper   | The structure of the paper is completed and clear; there are less than 5 inappropriate words in the paper            | The structure of the paper is completed; there are less than 10 inappropriate words in the paper      | The structure of the paper is uncompleted and unclear                       |