ĐẠI HỌC QUỐC GIA HÀ NỘI
TRƯỜNG ĐẠI HỌC KINH TẾ

Số: 3106 /QĐ- ĐHKT

CỘNG HOÀ XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập - Tự do - Hạnh phúc

Hà Nội, ngày 30 tháng 8 năm 2023

QUYẾT ĐỊNH
Về việc ban hành đề cương học phần
Các công cụ phái sinh* (03 tín chỉ) - Mã học phần: *FIB3069

HIỆU TRƯỞNG TRƯỜNG ĐẠI HỌC KINH TẾ

Căn cứ Quyết định số 290/QĐ-TTg ngày 06/3/2007 của Thủ tướng Chính phủ về việc thành lập Trường Đại học Kinh tế thuộc Đại học Quốc gia Hà Nội;

Căn cứ Quyết định số 3568/QĐ-ĐHQGHN, ngày 08/10/2014 của Giám đốc Đại học Quốc gia Hà Nội về việc ban hành Quy định về Tổ chức và hoạt động của các đơn vị thành viên và đơn vị trực thuộc Đại học Quốc gia Hà Nội;

Căn cứ Nghị Quyết số 15/NQ-HĐTĐHKT ngày 16 tháng 12 năm 2022 của Hội đồng Trường Đại học Kinh tế về việc ban hành Quy chế tạm thời về tổ chức và hoạt động của Trường Đại học Kinh tế - Đại học Quốc gia Hà Nội;

Căn cứ Quyết định số 3626/QĐ-ĐHQGHN ngày 21/10/2022 của Giám đốc Đại học Quốc gia Hà Nội về việc ban hành Quy chế Đào tạo đại học của Đại học Quốc gia Hà Nội;

Căn cứ Hướng dẫn số 775/ĐT ngày 11/08/2006 của Giám đốc Đại học Quốc gia Hà Nội về việc xây dựng đề cương môn học phù hợp với phương thức đào tạo theo tín chỉ;

Căn cứ Công văn số 2543/ĐHQGHN-ĐT ngày 26/7/2013 của Giám đốc Đại học Quốc gia Hà Nội về việc xây dựng đề cương môn học;

Theo đề nghị của Trưởng phòng Đào tạo và Trưởng Khoa Tài chính - Ngân hàng,

QUYẾT ĐỊNH:

Điều 1. Ban hành đề cương học phần ***Các công cụ phái sinh*, 03 tín chỉ, mã học phần: *FIB3069*,** tiếng Anh, bậc đào tạo đại học, do TS. Nguyễn Thị Nhung biên soạn *(đề cương kèm theo Quyết định này).*

Điều 2. Quyết định này có hiệu lực kể từ ngày ký. Trưởng phòng Đào tạo, Trưởng các phòng chức năng có liên quan, Trưởng Khoa Tài chính - Ngân hàng, Lãnh đạo các Khoa/Viện chịu trách nhiệm thi hành Quyết định này.

Nơi nhận:
- Như điều 2;
- Lưu: VT, N2.

HIỆU TRƯỞNG

ĐẠI HỌC QUỐC GIA HÀ NỘI
TRƯỜNG ĐẠI HỌC KINH TẾ

Lê Trung Thành

SYLLABUS: DERIVATIVES

(Kèm theo Quyết định số 3106/ĐHKT-ĐT ngày 30 tháng 8 năm 2023)

1. INSTRUCTION INFORMATION

1.1. Nguyễn Thị Nhung

- Status : PhD, Lecturer
- Office : Faculty of Economics and Business – Room 512, E4 Building, 144 Xuân Thủy, Cầu Giấy, Hà nội
- Tel : 0962 896 668
- Main research directions : Fixed Income, Derivatives, Porfolio Management, Risk Management

1.2. Vũ Thị Loan

- Status : PhD, Lecturer
- Office : Faculty of Economics and Business – Room 512, E4 Building, 144 Xuân Thủy, Cầu Giấy, Hà nội
- Tel : 0974 943 069
- Main research directions : Machine learning, financial behaviors, financial investment.

1.3. Lê Trung Thành

- Status : Assoc. PhD, Lecturer
- Office : Faculty of Economics and Business – Room 512, E4 Building, 144 Xuân Thủy, Cầu Giấy, Hà nội
- Tel : 0913590678
- Main research directions : Finance management, strategic planning, locat budget management, financial investments and risk management.

1.4. Tô Lan Phương

- Status : Assoc. PhD, Lecturer
- Office : Faculty of Economics and Business – Room 512, E4 Building, 144 Xuân Thủy, Cầu Giấy, Hà nội
- Tel : 0919471896
- Main research directions : Cash flow management, corportate finance management, credit ranking and analysis,

corporate valuation, green finance and behavioral finance.

2. COURSE INFORMATION

- Subject : DERIVATIVES
- Code of Subject : FIB3070
- Number of credits : 3
- Education degree : Bachelor's Degree
- Prerequisites : Corporate finance
- Language : English
- Credit hours : 45 hours
- Responsible department : Department of Investments, Room No.712, E4 Building, 144 Xuan Thuy, Cau Giay, Hanoi.

3. COURSE OBJECTIFS

The module helps students understand the basics of derivatives and derivatives markets, including: (i) the concept of derivatives and derivatives markets; (ii) classification and specifications of derivatives and derivatives markets; (iii) roles of derivatives and derivatives markets; (iv) fundamental methods of valuating derivatives; and (v) strategies usding derivatives for hedging and speculation. Based on basic knowledge, students can distinguish different derivatives and derivatives markets, methods for pricing derivatives. In addition, students can apply diferent methods to price diferent derivatives as well as use derivatives for hedging and speculation objectives.

4. LEARNING OUTCOME

4.1. Knowledge

Course's Learning Outcome	Program's Learning Outcome	Level	Details
CLO1	PLO3.1	1	Students have the ability to **remember** the nature of different types of derivatives, **identify** fundamental methods of pricing derivatives and strategies using derivatives
CLO2		2	Students have the ability to **classify** derivatives and strategies using derivatives, **understand** the nature of different types of derivatives, fundamental methods of pricing

Course's Learning Outcome	Program's Learning Outcome	Level	Details
			derivatives and strategies using derivatives
CLO3	PLO3.2	3	Students have the ability to **apply** diferent methods for pricing derivatives and hedging as well as investing by using derivatives
	PLO3.3		Students have the ability to collect information or financial data, and then **apply** diferent theorical frameworks to identify, analyze concrete derivatives, as well as to evaluate them.

4.2. Skills

Including professional skills and supplementary skills

Course's Learning Outcome	Program's Learning Outcome	Level	Details
CLO4	PLO4.1	3	Students have the ability to manage time and different resources, and be a leader in an orgnaization.
CLO5	PLO4.3	3	Students have the ability to develop skills in teamworking, cooperation and communication skills.

4.3. Self-reliance and responsibility

Including: Personal ethical qualities, professional and social ethical qualities

Course's Learning Outcome	Program's Learning Outcome	Level	Details
CLO6	PLO6.1	3	Students can understand the professional principles that a financial officer or traders needs to follow in the securities market, including principles of information

Course's Learning Outcome	Program's Learning Outcome	Level	Details
			transparency and for the common interest of markets.
CLO7	PLO6.2	3	Students can work with high discipline, know how to respect the law, have an active lifestyle and a sense of community
CLO8	PLO6.3	3	Students can work independently or in a team, self-study and develop their creativity to improve their performance and adapt to different working environments.

5. SUMMARY

This course provides a basic knowledge about derivatives, helping students remember, identify, and understand specifications of derivatives (including forwards, futures, options, swaps), as well their pros and cons of each. Moreover, this subject also gives fundamentals about valuation of derivatives with no-arbitrage models and mechanism of pricing derivatives. Furthermore, two kinds of strategies such as hedging strategies and investment strategies are presented in line with each type of derivatives. All the above-mentionned contents are presented in 7 chapters, including: (i) Overview about derivatives markets; (ii) Forward contracts and forward markets; (iii) Futures and futures markets; (iv) Swaps and swaps markets; (v) Options and options markets; (vi) Fundamentals of pricing derivatives; (viii) Strategies using derivatives.

Besides, students can develop different skills such as time management, leadership, and sense of teamwork. In addition, students can understand the professional principles, regulations, work with high discipline and develop a sense of comunity. In particular, students also can work idependently or in a team very well.

6. COURSE CONTENTS

CHAPTER 1: OVERVIEW ABOUT DERIVATIVES MARKETS

1.1. Derivatives

1.1.1. Definitions of derivatives

1.1.2. Specifications of derivatives

1.1.3. Types of derivatives

1.2. Derivatives markets

1.2.1. Reasons for derivatives markets

5.1.2. Specifications of options

5.1.3. Types of options

5.2. Structures of options markets

5.2.1. OTC and exchanges

5.2.1. Roles of options markets

CHAPTER 6: FUNDAMENTALS OF PRICING DERIVATIVES

6.1. Arbitrage and no-arbitrage models

6.1.1. Arbitrage models

6.1.2. No-arbitrage models

6.2. Mechanism of pricing derivatives

6.2.1. Forwards and Futures

6.2.1. Options

6.2.1. Swaps

CHAPTER 7: STRATEGIES USING DERIVATIVES

7.1. Hedging strategies by using derivatives

7.1.1. Hedging strategies using forwards and futrues

7.1.2. Hedging strategies using options

7.1.3. Hedging strategies using swaps

7.2. Investment strategies by using derivatives

7.2.1. Investment strategies using forwards and futrues

7.3.2. Investment strategies using options

7.3.3. Investment strategies using swaps

7. TEXTBOOK S AND REFERENCES

7.1. Textbook

1. Hull, J.C. (2020), Options, Futures, and Other Derivatives, Pearson Prentice Hall
2. Lê Trung Thành, Nguyễn Thị Nhung (2020), Các công cụ phái sinh, NXB Đại học quốc gia.
3. Nguyen, T.T.C., Chu, V.H. (2020), The status and the direction of development of the derivatives market in VietNam, NXB Đại học quốc gia

7.2. References

4. Trần Thị Thái Hà (2005), Đầu tư tài chính, Nhà Xuất bản ĐHQGHN
5. Wilmott (2006), On Quantitative Finance, Wiley

6. Nguyễn Văn Tiến (2010), Thị trường ngoại hối và các nghiệp vụ phái sinh, Nhà Xuất bản Thống kê.

8. COURSE SCHEDULE

8.1. General Schedule

Week	Contents	Teaching methods		Total	Notes
		In class			
		Theory	Discussion/ Assignement		
1	Chapter 1: Overview about derivatives markets	2	1	**3**	
2	Chapter 2: Forward contracts and forward markets	2	1	**3**	Online
3	Chapter 2: Forward contracts and forward markets (cont.)	2	1	**3**	Assignment 1
4	Chapter 3: Futures and futures markets	2	1	**3**	Online
5	Chapter 3: Futures and futures markets (cont.)	2	1	**3**	Assignment 2
6	Chapter 4: Swaps and swaps markets	2	1	**3**	Online
7	Chapter 4: Swaps and swaps markets (cont.)	2	1	**3**	Assignment 3
8	Chapter 5: Options and options markets	2	1	**3**	Online
9	Chapter 5: Options and options markets (cont.)	2	1	**3**	
10	Revison and Mid-term exam	2	1	**3**	
11	Chapter 6: Fundamentals of pricing derivatives	3	0	**3**	
12	Chapter 6: Fundamentals of pricing derivatives (cont.)	2	1	**3**	
13	Chapter 7: Strategies using derivatives	3	0	**3**	
14	Chapter 7: Strategies using derivatives (cont.)	2	1	**3**	Assignment 4
15	Presentations	0	3	**3**	
	Tổng	**30**	**15**	**45**	

8.2. Detail Schedule

Week 1: Chapter 1. Overview about derivatives markets					
Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 2 credit hours	Classroom	1. Derivatives 2. Derivatives markets	- Read chapter chapter 1, Textbook 1, p.1-21 - Read chapter chapter 20, Textbook 2, p.741-780 - Read chapter chapter 1, Textbook 3, p.19-60	- CLO1, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 1 credit hour	Classroom	3. Disscussion about roles of derivatives and derivatives markets			
Week 2: Chapter 2. Forward contracts and forward markets					
Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 2 credit hours	Online	1. Forward contracts	- Read chapter 21, Textbook 2, p.781-820 - Read chapter 2, Textbook 3, p.61-109	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 1 credit hour	Online	2. Exercices related to forward contracts			
Week 3: Chapter 2. Forward contracts and forward markets (Cont)					

Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 2 credit hours	Classroom	1. Structure of forward markets	- Read chapter 21, Textbook 2, p.781-820 - Read chapter 2, Textbook 3, p.61-109	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 1 credit hour	Classroom	2. Discussion about forward markets 3. Asssignment 1			
Week 4: Chapter 3. Futures and futures markets					
Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 2 credit hours	Online	1. Futures	- Read chapter 2, Textbook 1, p.22-46 - Read chapter 21, Textbook 2, p.781-820 - Read chapter 3, Textbook 3, p.110-196	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 1 credit hour	Online	2. Exercices about futures			
Week 5: Chapter 3. Futures and futures markets (Cont)					
Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note

Theory: 2 credit hours	Classroom	1. Structure of futures markets	- Read chapter 2, Textbook 1, p.22-46 - Read chapter 21, Textbook 2, p.781-820 - Read chapter 3, Textbook 3, p.110-196	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 1 credit hour	Classroom	2. Discussion about futures markets 3. Assignment 2			
Week 6: Chapter 4. Swaps and swaps markets					
Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 2 credit hours	Online	1. Swaps	- Read chapter 7, Textbook 1, p.148-179 - Read chapter 23, Textbook 2, p.867 - 910 - Read chapter 5, Textbook 3, p.309-382	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 1 credit hour	Online	2. Exercices about swaps			
Week 7: Chapter 4. Swaps and swaps markets (Cont)					
Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 2 credit hours	Classroom	1. Structure of swaps markets	- Read chapter 7, Textbook 1, p.148-179		

Assignment: 1 credit hour	Classroom	2. Discussion about swaps markets 3. Assignment 3	- Read chapter 23, Textbook 2, p.867 - 910 - Read chapter 5, Textbook 3, p.309-382	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Week 8: Chapter 5. Options and options markets					
Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 2 credit hours	Online	1. Options	- Read chapter 9, Textbook 1, p.194-213 - Read chapter 22, Textbook 2, p.821-866 - Read chapter 4, Textbook 3, p.197-308	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 1 credit hour	Online	2. Exercices about options			
Week 9: Chapter 5. Options and options markets (Cont)					
Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 2 credit hours	Classroom	1. Structure of options markets	- Read chapter 9, Textbook 1, p.194-213 - Read chapter 22, Textbook 2, p.821-866	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 1 credit hour	Classroom	2. Discussion about options markets			

			- Read chapter 4, Textbook 3, p.197-308		
Week 10: Revision and Mid-term exam					
Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 2 credit hours	Classroom	1. Revision	- Read chapter 7 (p.148-179), chapter 9 (p.194-213), Textbook 1. - Read chapter 21, 22, 23, Textbook 2, p.781- 910. - Read chapter 2 (p.61-109), chapter 4 (p.197-308), chapter 5 (p.309-382), Textbook 3.	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 1 credit hour	Classroom	2. Mid-term exam			
Week 11: Chapter 6. Fundamentals of pricing derivatives					
Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 3 credit hours	Classroom	1. Arbitrage and no-arbitrage models	- Read chapter 5, Textbook 1, p.101-128 - Read chapter 12, Textbook 1, p.253-279	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 0 credit hour	Classroom				

			- Read chapter 14, Textbook 1, p.299-331 - Read chapter 20, 21, 22, 23, Textbook 2, p.741 – 910.		

Week 12: Chapter 6. Fundamentals of pricing derivatives (Cont)

Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 2 credit hours	Classroom	1. Mechanism of pricing derivatives	- Read chapter 5, Textbook 1, p.101-128 - Read chapter 12, Textbook 1, p.253-279 - Read chapter 14, Textbook 1, p.299-331 - Read chapter 20, 21, 22, 23, Textbook 2, p.741 – 910.	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 1 credit hour	Classroom	2. Exercices about derivatives valuations			

Week 13: Chapter 7. Investment Strategies using derivatives

Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 3 credit hours	Classroom	1. Hedging strategies using derivatives	- Read chapter 3, Textbook 1, p.47-74	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment:	Classroom				

0 credit hour			- Read chapter 11, Textbook 1, p.234-252 - Read chapter 6, Textbook 3, p.383-422		

Week 14: Chapter 7. Investment Strategies using derivatives (Cont)

Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 2 credit hours	Classroom	1. Investment strategies by using derivatives	- Read chapter 3, Textbook 1, p.47-74 - Read chapter 11, Textbook 1, p.234-252 - Read chapter 6, Textbook 3, p.383-422	- CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8	
Assignment: 1 credit hour	Classroom	2. Exercices about investment strategies using derivatives 3. Assignment 4			

Week 15: Presentations

Teaching Method	Place	Contents	Requirement for students	Knowledge and skills that students are required to have	Note
Theory: 0 credit hours	Classroom			- CLO1, CLO2, CLO3, CLO4, CLO5, CLO6, CLO7, CLO6, CLO7, CLO8.	
Assignment: 3 credit hour	Classroom	1. Students present their case studies 2. Conclusion			

9. TEACHING METHODS AND ASSESSMENT

9.1. Teaching methods

No.	CODE	Group of teaching and learning methods	Detailed description
I	**Direct teaching methods**		
1	**PP1**	**Specific explanation**	Instructors will guide and explain aspects of the lesson content, helping students to gain knowledge and skills.
2	**PP2**	**Lectures**	The instructor will present the lecture details and the student's responsibility is to listen and record what is needed to gain knowledge.
II	**Methods of teaching and learning brain stimulation (Indirect teaching)**		
3	**PP3**	**Problem solving**	Students must use deep and logical thinking to recognize and solve the problems between the current situation and the desired goal, thereby, learning new knowledge while facing and solving problems.
4	**PP4**	**Case Study**	Instructors design tasks based on cases/situations, asking students to solve, thereby helping students develop problem-solving, decision-making skills as well as research skills.
III	**Interactive teaching method**		
5	**PP5**	**Discussion**	Students are divided into groups and give opinions on the problem the teacher has raised before. This method helps students analyze definitions, ideas, data about the topic and discuss with teachers, thereby connecting ideas and clarifying problems.
6	**PP6**	**Group study**	Students are divided into small groups to solve the given problem.
IV	**Independent teaching method**		
7	**PP7**	**Read and study materials**	This method develops students' self-study ability to prepare lessons before each class and review lessons after class.
8	**PP8**	**Exercises/Homework**	Students are required to complete the teacher's assignments at home

(In addition to the suggested methods above, teachers can add other teaching methods suitable for the course)

9.2 The compatibility between teaching and learning methods and learning outcomes

Learning outcome		Teaching Methods
Learning Outcome Code	**Details**	
CLO1	Students have the ability to **remember** the nature of different types of derivatives, **identify** fundamental methods of pricing derivatives and strategies using derivatives	PP1=> PP8
CLO2	Students have the ability to **classify** derivatives and strategies using derivatives, **understand** the nature of different types of derivatives, fundamental methods of pricing derivatives and strategies using derivatives	PP1=> PP8
CLO3	Students have the ability to **apply** diferent methods for pricing derivatives and hedging as well as investing by using derivatives. Students also have the ability to collect information or financial data, and then **apply** diferent theorical frameworks to identify, analyze concrete derivatives, as well as to evaluate them.	PP1=> PP8
CLO4	Students have the ability to manage time and different resources, and be a leader in an orgnaization.	PP7
CLO5	Students have the ability to develop skills in teamworking, cooperation and communication skills.	PP6
CLO6	Students can understand the professional principles that a financial officer or traders needs to follow in the securities market, including principles of information transparency and for the common interest of markets.	PP5, PP6
CLO7	Students can work with high discipline, know how to respect the law, have an active lifestyle and a sense of community	PP6, PP7
CLO8	Students can work independently or in a team, self-study and develop their creativity to improve their performance and adapt to different working environments.	PP1=> PP8

10. FORMS OF TESTING AND ASSESSEMENTS

10.1. Test forms

Types of assessement	Testing content	Course's Learning Outcome	Percentage
Attendance	- Class participation points will be based on class attendance in class.	CLO 4, CLO6, CLO7, CLO8	5%
Individual assessement (Exercices)	- Assessment of student participation and learning attitude towards the course and pre-class preparation.	CLO1, CLO2, CLO3, CLO4, CLO6, CLO7, CLO8	10%
Group assignment	- Students are divided into small groups and must solve assignment in advance at home under the guidance of lecturer. The group prepare the video presentation and submit for other watching before the class, prepare 3-5 questions to ask other students in class and also have to answer questions from other students. - Assess students' cognitive ability and teamwork skills. - Assess the ability to collect information, process documents to complete assignments by topic - Assessment of written and presentation ability, ability to answer critical questions - Assess the level of understanding and application of the knowledge of the course.	CLO 1, CLO2, CLO3, CLO4, CLO5, CLO6, CLO7, and CLO8	10%
Mid-term exam	- Mid-term exam is writen and closed-book examination. - Assess how much the learner achieves the target percentage of knowledge, mainly level 1 and 2.	CLO 1, CLO2, CLO3, CLO4, CLO6, CLO7, and CLO8	15%
Final exam	- Final exam of 90 minutes.	CLO 1, CLO2, CLO3,	60%

Types of assessement	Testing content	Course's Learning Outcome	Percentage
	- Evaluate the knowledge and general skills of students to achieve percentage of the	CLO4, CLO6, CLO7, and CLO8	

10.2. Criteria used to assess students

10.2.1.Attendance and individual assessment: 5%

- Assessement criteria:

Grade	Criteria
9-10	From 14 to 15 lectures
7- under 9	From 10 to 13 lectures
5- under 7	From 7 to 9 lectures
Under 5	Less than 7 lectures

10.2.2.Individual assessment: 10%

- There are 04 individual assignements
- Assessement criteria:

Grade	Criteria
9-10	Achieve all 8 CLO, including: CLO1, CLO2, CLO3, CLO4, CLO5, CLO6, CLO7, CLO8.
7- under 9	Achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO6, CLO5, CLO7, CLO8, and a part of CLO3.
5- under 7	Achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO6, CLO7, CLO8.
Under 5	Unable to achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO8.

10.2.3.Case study and group presentation: 10%

- Topics are delivered at the second week and presented at the 15th week.
- Assessement criteria:

Grade	Criteria
9-10	Achieve all 8 CLO, including: CLO1, CLO2, CLO3, CLO4, CLO5, CLO6, CLO7, CLO8.
7- under 9	Achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO6, CLO5, CLO7, CLO8, and a part of CLO3.

Grade	Criteria
5- under 7	Achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO6, CLO7, CLO8.
Under 5	Unable to achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO8.

10.2.4.Mid-term exam: 15%

- Mid-term exam lasts at the 10th week.
- Mid-term exam covers chapters from 1 to 5.
- Assessement criteria:

Grade	Criteria
9-10	Achieve all 8 CLO, including: CLO1, CLO2, CLO3, CLO4, CLO5, CLO6, CLO7, CLO8.
7- under 9	Achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO6, CLO5, CLO7, CLO8, and a part of CLO3.
5- under 7	Achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO6, CLO7, CLO8.
Under 5	Unable to achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO8.

10.2.5.Final exam: 60%

- Exam contents are based on the final exam structure.
- Assessement criteria:

Grade	Criteria
9-10	Achieve all 8 CLO, including: CLO1, CLO2, CLO3, CLO4, CLO5, CLO6, CLO7, CLO8.
7- under 9	Achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO6, CLO5, CLO7, CLO8, and a part of CLO3.
5- under 7	Achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO6, CLO7, CLO8.
Under 5	Unable to achieve 7 CLO, including: CLO1, CLO2, CLO4, CLO5, CLO6, CLO7, CLO8.

10.3. Assessment Schedule

- Assignements : As stated in the Syllabus
- Mid-term exam : Week 10
- Final exam : Decided by the University

Preparer	Head of Department	Dean of Faculty	Approved
PhD. Nguyễn Thị Nhung	PhD. Nguyễn Thị Nhung	Assoc.Prof. Nguyễn Văn Hiệu	Assoc.Prof. Lê Trung Thành

COURSE DESCRIPTION

1. **Course name:** DERIVATIVES
2. **Course code:** FIB 3070
3. **Degree:** Undergraduate level
4. **Language:** English
5. **Number of credit:** 03
6. **Pre-requisite:** Corporate Finance
7. **Core course/Elective course:** Core course
8. **Faculty in charge of the course:** Faculty of Finance and Banking
9. **Course objectives:**

The module helps students understand the basics of derivatives and derivatives markets, including: (i) the concept of derivatives and derivatives markets; (ii) classification and specifications of derivatives and derivatives markets; (iii) roles of derivatives and derivatives markets; (iv) fundamental methods of valuating derivatives; and (v) strategies usding derivatives for hedging and speculation. Based on basic knowledge, students can distinguish different derivatives and derivatives markets, methods for pricing derivatives. In addition, students can apply diferent methods to price diferent derivatives as well as use derivatives for hedging and speculation objectives.

10. **Summary:**

This course provides a basic knowledge about derivatives, helping students remember, identify, and understand specifications of derivatives (including forwards, futures, options, swaps), as well their pros and cons of each. Moreover, this subject also gives fundamentals about valuation of derivatives with no-arbitrage models and mechanism of pricing derivatives. Furthermore, two kinds of strategies such as hedging strategies and investment strategies are presented in line with each type of derivatives. All the above-mentionned contents are presented in 7 chapters, including: (i) Overview about derivatives markets; (ii) Forward contracts and forward markets; (iii) Futures and futures markets; (iv) Swaps and swaps markets; (v) Options and options markets; (vi) Fundamentals of pricing derivatives; (viii) Strategies using derivatives.

Besides, students can develop different skills such as time management, leadership, and sense of teamwork. In addition, students can understand the professional principles, regulations, work with high discipline and develop a sense of comunity. In particular, students also can work idependently or in a team very well.

11. **Credit hours: 45**

12. Teaching methods

No.	CODE	Group of teaching and learning methods	Detailed description
I	**Direct teaching methods**		
1	**PP1**	**Specific explanation**	Instructors will guide and explain aspects of the lesson content, helping students to gain knowledge and skills.
2	**PP2**	**Lectures**	The instructor will present the lecture details and the student's responsibility is to listen and record what is needed to gain knowledge.
II	**Methods of teaching and learning brain stimulation (Indirect teaching)**		
3	**PP3**	**Problem solving**	Students must use deep and logical thinking to recognize and solve the problems between the current situation and the desired goal, thereby, learning new knowledge while facing and solving problems.
4	**PP4**	**Case Study**	Instructors design tasks based on cases/situations, asking students to solve, thereby helping students develop problem-solving, decision-making skills as well as research skills.
III	**Interactive teaching method**		
5	**PP5**	**Discussion**	Students are divided into groups and give opinions on the problem the teacher has raised before. This method helps students analyze definitions, ideas, data about the topic and discuss with teachers, thereby connecting ideas and clarifying problems.
6	**PP6**	**Group study**	Students are divided into small groups to solve the given problem.
IV	**Independent teaching method**		
7	**PP7**	**Read and study materials**	This method develops students' self-study ability to prepare lessons before each class and review lessons after class.
8	**PP8**	**Exercises/Homework**	Students are required to complete the teacher's assignments at home

(In addition to the suggested methods above, teachers can add other teaching methods suitable for the course)

13. Assessment

Class attendance and individual assessement: 15%

Group assignment: 10%

Mid-Term exam: 15%

Final exam: 60%

14. Required materials

1. Hull, J.C. (2020), Options, Futures, and Other Derivatives, Pearson Prentice Hall.
2. Lê Trung Thành, Nguyễn Thị Nhung (2020), Các công cụ phái sinh, NXB Đại học quốc gia.
3. Nguyen, T.T.C., Chu, V.H. (2020), The status and the direction of development of the derivatives market in VietNam, NXB Đại học quốc gia.

Dean of Faculty	**Head of Department**
Assoc.Prof. Nguyễn Văn Hiệu	**PhD. Nguyễn Thị Nhung**

TRƯỜNG ĐẠI HỌC KINH TẾ - ĐHQGHN
KHOA TÀI CHÍNH NGÂN HÀNG

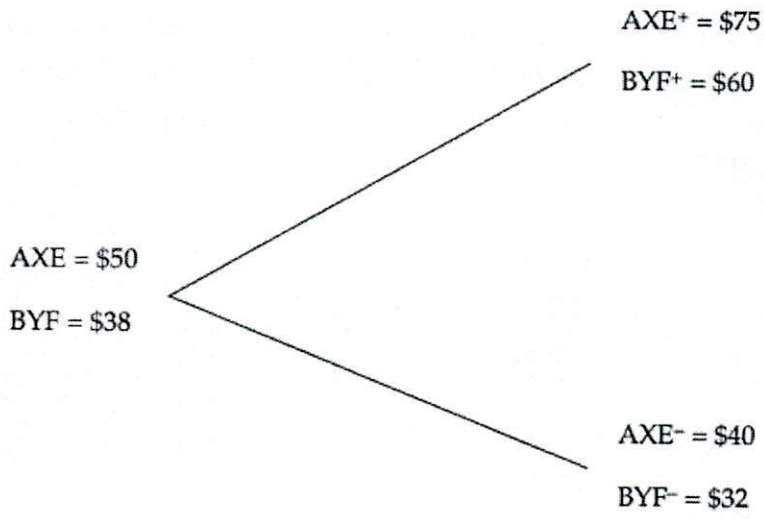
BÀI TẬP TÌNH HUỐNG SỐ 1

Môn học: Derivatives

****

Observe that we have one stock, AXE Electronics, that today is worth \$50 and one period later will be worth either \$75 or \$40. We will denote these prices as AXE = \$50, AXE+ = \$75, and AXE– = \$40. Another stock, BYF Technology, is today worth \$38 and one period later will be worth \$60 or \$32. Thus, BYF = \$38, BYF = \$60, and BYF = \$32. Assume that the risk-free borrowing and lending rate is 4%. Also assume no dividends are paid on either stock during the period.

Determine Arbitrage Opportunity with Stock AXE, Stock BYF, and a Risk-Free Bond.



Note: The risk-free rate is 4%.

TRƯỜNG ĐẠI HỌC KINH TẾ - ĐHQGHN
KHOA TÀI CHÍNH NGÂN HÀNG

BÀI TẬP TÌNH HUỐNG SỐ 2

Môn học: Derivatives

****

It is now October 2007. A company anticipates that it will purchase 1 million pounds of copper in each of February 2008, August 2008, February 2009, and August 2009. The company has decided to use the futures contracts traded in the COMEX division of the New York Mercantile Exchange to hedge its risk. One contract is for the delivery of 25,000 pounds of copper. The initial margin is $2,000 per contract and the maintenance margin is %1,500 per contract. The company's policy is to hedge 80% of its exposure. Contracts with maturities up to 13 months into the future are considered to have sufficient liquidity to meet the company's needs. Devise a hedging strategy for the company.

Assume the market prices (in cents per pound) today and at future dates are as follows. What is the impact of the strategy you propose on the price the company pays for copper? What is the initial margin requirement in October 2004? Is the company subject to any margin calls?

Date	Oct 2007	Feb 2008	Aug 2008	Feb 2009	Aug 2009
Spot Price	372.00	369.00	365.00	377.00	388.00
Mar 2008 Futures Price	372.30	369.10			
Sep 2008 Futures Price	372.80	370.20	364.80		
Mar 2009 Futures Price		370.70	364.30	376.70	
Sep 2009 Futures Price			364.20	376.50	388.20

What is the impact of the strategy you propose on the price the company pays for copper? What is the initial margin requirement in October 2007? Is the company subject to any margin calls?

TRƯỜNG ĐẠI HỌC KINH TẾ - ĐHQGHN
KHOA TÀI CHÍNH NGÂN HÀNG

BÀI TẬP TÌNH HUỐNG SỐ 3

Môn học: Derivatives

****

Uda Malquist is the chief financial officer of Axia Corporation, a global manufacturer of mobile communication devices. Axia is headquartered in Germany and reports its financial statements in euros (EUR). Axia expects to make two major financial transactions in the coming months:

The company will issue a note of 200 million USD in three months (90 days) time. The note will have a 6-month (180 days) term, and the proceeds will be used to meet the working capital needs of Axia's U.S. operations.

Under a new law, Axia will have an opportunity to repatriate 700 million GBP of profits held in the UK. This repatriation would be on favorable tax terms and would occur in 218 days time. Axia intends to take full advantage of this tax benefit.

Malquist must first decide whether to hedge the interest rate exposure on the U.S.borrowing with a forward rate agreement (FRA) or with futures contracts.

From Exhibit 1 and a 30/360 day count, Malquist calculates the FRA rates implicit in the term structure. Stream partners, a large brokerage house, offers Axia an FRA rate of 4.50% for the US$200 million note in 3 months time (with settlement at initiation of the loan).

Malquist believes that building a perfect hedge for the U.S. borrowing by using Eurodollar futures contracts may not be possible.

Exhibit 1: Current term structure of USD LIBOR rates (annualised)

TERMS (days)	RATE
30	3.10%
60	3.40%
90	3.92%
180	3.99%
270	4.13%
360	4.2%

Malquist must also decide whether to hedge the conversion of GBP to EUR. She analyzes the GBP per EUR exchange rate using the data in Exhibit 2. She calculates the 218-day arbitrage-free forward exchange rate using a 365-day per year convention.

Malquist finds that the futures contract on the euro (quoted as GBP per EUR) is mispriced and that an arbitrage opportunity exists. She also finds that the 218-day arbitrage free futures price (GBP/EUR) is below the 218-day expected spot exchange rate, but she is confident that rates and prices will be the same in 218 days.

Exhibit 2: Interest rate and Exchange rate data

UK interest rate*	4.35%
Euro interest rate*	5.35%
Spot GBP/EUR	0.6740

**244-day interest rates, discrete and annualized*

Malquist assumes that the interest rates in both exhibits are risk-free rates in her analysis. What is the arbitrage-free 218-day forward exchange rate (GBP/EUR)?

TRƯỜNG ĐẠI HỌC KINH TẾ
Khoa/Viện: Tài chính ngân hàng

BẢNG TRỌNG SỐ NỘI DUNG HỌC PHẦN

Tên học phần: Derivatives **Mã học phần: FIB3070** **Số tín chỉ: 03** **Thời gian làm bài: 90**

TT	Nội dung	%	Cấp độ 1 (%) (Tái hiện - Biết)	Cấp độ 2 (%) (Tái tạo - Hiểu và Áp dụng)	Cấp độ 3 (%) (Lập luận - Phân tích và đánh giá)	Cấp độ 4 (%) (Sáng tạo)
1	Nội dung 1: Tổng quan về thị trường công cụ phái sinh (Chương 1)	10	10	0	-	-
2	Nội dung 2: Hợp đồng kỳ hạn và hợp đồng tương lai (Chương 2 & 3)	28	4	24	-	-
3	Nội dung 3: Hợp đồng hoán đổi và hợp đồng quyền chọn (Chương 4 & 5)	30	2	28	-	-
4	Nội dung 4: Tổng quan về định giá công cụ phái sinh (Chương 6)	16	2	4	10	-
5	Nội dung 5: Đánh giá kết quả của danh mục đầu tư (Chương 7)	16	2	4	10	-
	Tổng	**100**	**20**	**60**	**20**	**0**

Ghi chú:

TRƯỜNG ĐẠI HỌC KINH TẾ
Khoa/Viện: Tài chính ngân hàng

CẤU TRÚC ĐỀ THI HỌC PHẦN

Tên học phần: Derivatives *Mã học phần: FIB3070* *Số tín chỉ: 03* *Thời gian làm bài: 90*

Mục tiêu kiểm tra/đánh giá: Đánh giá khả năng tái hiện, khả năng tái tạo và khả năng lập luận

Nội dung	%	Cấp độ 1 (Tái hiện-Biết)						Cấp độ 2 (Tái tạo-Hiểu+Áp dụng)						Cấp độ 3 (Lập luận-Phân tích và đánh giá)						Cấp độ 4 (Sáng tạo)					
		Trắc nghiệm			Tự luận			Trắc nghiệm			Tự luận			Trắc nghiệm			Tự luận			Trắc nghiệm			Tự luận		
		SL	TG	Đ	SL	TG	Đ	SL	TG	Đ	SL	TG	Đ	SL	TG	Đ	SL	TG	Đ	SL	TG	Đ	SL	TG	Đ
Nội dung 1	10	5	1	2																					
Nội dung 2	28	2	1	2				1	2	4	1	20	20												
Nội dung 3	30	1	1	2				2	2	4	1	20	20												
Nội dung 4	16	1	1	2				1	2	4							0.5	30	20						
Nội dung 5	16	1	1	2				1	2	4							0.5	30	20						
Tổng	**100**	**10**	**10**	**20**	**0**	**0**	**0**	**5**	**10**	**20**	**2**	**40**	**40**	**0**	**0**	**0**	**1**	**30**	**20**	**0**	**0**	**0**	**0**	**0**	**0**
%	**100%**	**20**						**60**						**20**						**0**					
Thời gian	**90.00**	**10**						**50**						**30**						**0**					

Ghi chú:

- Thang điểm 100
- Đề thi học phần Derivatives gồm 5 nội dung với 3 câu hỏi tự luận/bài tập và 15 câu hỏi trắc nghiệm
  - Nội dung 1: Có 05 câu hỏi trắc nghiệm cấp độ 1
  - Nội dung 2: Có 02 câu hỏi trắc nghiệm cấp độ 1, 01 câu hỏi trắc nghiệm cấp độ 2 và 01 câu hỏi tự luận cấp độ 3.
  - Nội dung 3: Có 01 câu hỏi trắc nghiệm cấp độ 1, 02 câu hỏi trắc nghiệm cấp độ 2 và 01 câu hỏi tự luận cấp độ 3.
  - Nội dung 4: Có 01 câu hỏi trắc nghiệm cấp độ 1, 01 câu hỏi trắc nghiệm cấp độ 2 và 0,5 câu hỏi tự luận cấp độ 3
  - Nội dung 5: Có 01 câu hỏi trắc nghiệm cấp độ 1, 01 câu hỏi trắc nghiệm cấp độ 2 và 0,5 câu hỏi tự luận cấp độ 3

Hà Nội, ngày.... tháng.... năm 20....

Giảng viên thiết kế/Bộ môn

TS. Nguyễn Thị Nhung

Chủ nhiệm Khoa

PGS.TS. Nguyễn Văn Hiệu

Trung tâm Đảm bảo chất lượng giáo dục

Đào Thị Thanh Huyền