

Annexe A: New/Revised Course Content in OBTL+ Format

Course Overview

The sections shown on this interface are based on the templates [UG OBTL+](#) or [PG OBTL+](#)

If you are revising/duplicating an existing course and do not see the pre-filled contents you expect in the subsequent sections e.g. Course Aims, Intended Learning Outcomes etc. please refer to [Data Transformation Status](#) for more information.

Expected Implementation in Academic Year	AY2024-2025
Semester/Trimester/Others (specify approx. Start/End date)	Semester 1
Course Author * Faculty proposing/revising the course	Eric Tham
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Course Title	Derivative Securities and Hedging Strategies
Course Code	BF2221
Academic Units	3
Contact Hours	39
Research Experience Components	

Course Requisites (if applicable)

Pre-requisites	BF2201 Investments / BF2219 Investments
Co-requisites	
Pre-requisite to	
Mutually exclusive to	
Replacement course to	
Remarks (if any)	

Course Aims

This course is an introductory course on financial derivatives and derivatives-linked investments. The derivatives covered include forwards, futures, swaps and options on different underlying assets like stocks, stock indices, commodities and foreign exchange. Through this course, students will learn the features of various derivatives and how to price, value (calculate the Profit/Loss) and structure them for investment and risk management. Students will also learn basic and slightly more advance option strategies and how to use them for hedging and trading. They will be able to design arbitrage strategies to take advantage of mispricing in various derivatives.

A good understanding of derivatives and its usage/abuses is a prerequisite for effective management of any company as financial risks can cause substantial damage to the P/L of an otherwise well managed firm. Graduates with solid grounding in derivative investments can take up careers as traders, derivatives specialists/advisors, derivatives sales experts, financial engineers and risk managers in treasury departments, trading floors, asset management and risk management divisions in banks and major corporates. On an individual level, understanding of derivatives will help one to appreciate the risk and rewards in the many derivatives-linked investments now increasingly made available to retail investors.

Course's Intended Learning Outcomes (ILOs)

Upon the successful completion of this course, you (student) would be able to:

ILO 1	Identify the general features of derivative securities such as forwards, futures, swaps and options.
ILO 2	Calculate the price of derivatives and profits of derivative positions.
ILO 3	Implement appropriate derivative strategies for hedging, investments and risk management.
ILO 4	Exploit arbitrage opportunities due to mispriced derivatives.

Course Content

1. Background Knowledge on (Continuous) Interest Rates Introduction to Derivatives
2. Futures Markets & Central Counterparties Hedging Strategies using Futures
3. Determination of Forward and Futures Prices
4. Interest Rate Futures
5. Swaps
6. Mechanics of Options Markets Properties of Stock Options
7. Trading Strategies involving Options
8. Binomial Trees
9. Black-Scholes-Merton (BSM) Model
10. Options on Stock Indices and Currencies

Reading and References (if applicable)

Textbook:

John C. Hull Options, Futures and other Derivatives, 9th Edition (Global Edition, made available by publisher at Booklink NTU), Pearson.

Useful Supplementary Reading Reference:

Chance, D. and R. Brooks, 2016, An Introduction to Derivatives and Risk Management, 10th Edition, Cengage Learning
Hull, C., 2018, Risk Management and Financial Institutions, 5th Edition, Wiley

Planned Schedule

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
1	Background Knowledge on (Continuous) Interest Rates Introduction to Derivatives	ILO1	CH4, CH1	In-person	
2	Mechanics of Futures Markets Hedging Strategies using Futures	ILO1 , ILO2	CH2, CH3	In-person	
3	Determination of Forward and Futures Prices	ILO1 , ILO2	CH5	In-person	
4	Interest Rate Futures	ILO1 , ILO2	CH6	In-person	
5	Swaps	ILO1 , ILO2	CH7	In-person	
6	Mechanics of Options Markets Properties of Stock Options	ILO1 , ILO2 , ILO4	CH10, CH11	In-person	
7	Trading Strategies involving Options	ILO1 , ILO2 , ILO3	CH12	In-person	
8	Binomial Trees	ILO1 , ILO2 , ILO4	CH13	In-person	

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
9	Black-Scholes-Merton (BSM) Model	ILO1 , ILO2 , ILO4	CH15	In-person	
10	Options on Stock Indices and Currencies	ILO1 , ILO2 , ILO3	CH17	In-person	
11	Project Report Question and Answer Session	ILO1 , ILO2 , ILO3 , ILO4		In-person	
12	Quiz (tentative timing, details will be confirmed)	ILO1 , ILO2 , ILO3 , ILO4		In-person	
13	Course Wrap-up Exam Briefing	ILO1 , ILO2 , ILO3 , ILO4		In-person	

Learning and Teaching Approach

Approach	How does this approach support you in achieving the learning outcomes?
Seminar	Seminar instructor will facilitate your learning and acquisition of knowledge through the lectures/seminars conducted. Opportunities will be provided for students to raise questions, participate, answer questions, seek clarifications, and voice their views on the topics involved.
Tutorials	Students will be exposed to questions of varying degrees of difficulties and are expected to prepare in advance for the tutorial sessions to maximize their benefit. Students are free to raise any pertinent issues or questions or supplement with additional points of views.
Project	Allow students opportunity to work in a group and to exercise their teamwork. The topics are geared towards real-life applications to help students observe the translation of academic knowledge into practice in the industry.
Other in-Class activities	Provide opportunities for instructor-to-peer and peer-to-peer interactions, seeking to stimulate interest in the topics and learning from instructor and peers.

Assessment Structure

Assessment Components (includes both continuous and summative assessment)

No.	Component	ILO	Related PLO or Accreditation	Weightage	Team/Individual	Rubrics	Level of Understanding
1	Continuous Assessment (CA): Class Participation(Class Participation)	1,2,3,4	Oral Communication	12	Individual		
2	Continuous Assessment (CA): Presentation(Tutorial Presentation)	1,2,3,4	Oral Communication	8	Team		
3	Continuous Assessment (CA): Test/Quiz(Quiz)	2,3,4	Acquisition of knowledge	20	Individual		
4	Continuous Assessment (CA): Presentation(Project Report)	2,3,4	Teamwork & Interpersonal Skill	10	Team		
5	Summative Assessment (EXAM): Final exam(Final Examination)	1,2,3,4	Acquisition of knowledge	50	Individual		

Description of Assessment Components (if applicable)

C1.Absence from class will affect your participation marks. This course requires you to be in class to participate in activities and discussions. There will be no make-up opportunities for in-class activities. If you will be absent from a seminar session, you must inform your instructor via email prior to the start of the class.

If you are unable to attend your registered session in a particular week, you may request from your instructor to attend his/her other sessions.Note that you cannot register for a particular session and attend a different session permanently. You are discouraged from attending a different session as the pace will be different and your participation scores will not be transferred. Please refer to H) for the schedule for all the sessions.

C2.Each group is required to present for the course on the pre-assigned case studies. Every member is required to present.

C3.There will be a quiz in week 13. The quiz is in the form of online Multiple-Choice Questions (MCQs).

C4.Group project can be done in groups of not less than FOUR (4) and not more than FIVE (5) students. Each session is expected to have 8 groups.

C5.The final exam will be conducted in exam hall and students are required to be physically present, unless the situation changes, and management advises to change the arrangement. As per ICAWE accreditation requirement, the exam's duration is 2 hour 30 minutes,and there will be no MCQs. The final exam will be in restricted open-bookformat with one A4 size paper with writings on both sides (either handwriting or printing).

Formative Feedback

You will receive feedback on your Tutorial Presentation, Project Report and Quiz. Feedback on teamwork skills will be via compulsory peer evaluation.

NTU Graduate Attributes/Competency Mapping

This course intends to develop the following graduate attributes and competencies (maximum 5 most relevant)

Attributes/Competency	Level
Collaboration	Basic
Communication	Basic
Problem Solving	Basic

Course Policy

Policy (Academic Integrity)

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values. As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the academic integrity website for more information. On the use of technological tools (such as Generative AI tools), different courses / assignments have different intended learning outcomes. Students should refer to the specific assignment instructions on their use and requirements and/or consult your instructors on how you can use these tools to help your learning. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Policy (General)

You are expected to complete all assigned pre-class readings, activities, and assignments on or before time, attend all seminar classes punctually and stay till the end, and submit all project/presentations by due date and take quiz on assigned dates. You are expected to take responsibility to follow up with course notes, assignments, and course related announcements for seminar sessions they have missed. You are expected to participate in all seminar discussions and activities.

During seminar class, you should focus on class activities. If you are sleeping, chatting with others (not related to course materials), surfing internet on private matters, or engaging in activities not related to the course, marks will be deducted under "Class Participation", and you may be asked to leave the class

Policy (Absenteeism)

If you are absent for the quiz without a valid reason, zero mark will be awarded for the quiz. Valid reasons include falling sick (must be supported by a medical certificate by recognized medical professional for the quiz date) and participation in NTU's approved activities supported by an official letter from the relevant authorities (only for university-level and higher activities and should be submitted to instructor before the quiz). There will not be any makeup quiz.

If you are absent from or late for projector tutorial presentation, you are expected to inform your group mates and instructor in advance. Those who are late or absent are expected to contact the instructor automatically and those who are unable to provide satisfactory reason for lateness/absence may be awarded lesser marks up to zero mark.

Policy (Others, if applicable)

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