

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
Course Code	BF2209
Academic Units	3
Contact Hours	39
Research Experience Components	Not Applicable

Course Requisites (if applicable)

Pre-requisites	BF2201 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, their similarities and differences.
ILO 2	Calculate the price of derivatives and profits of derivative positions.
ILO 3	Implement appropriate derivative strategies for 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 Options Markets, Properties of Stock Options	ILO1 , ILO2 , ILO4	CH9 CH10	In-person	
3	Properties of Stock Options, Trading Strategies involving Options	ILO1 , ILO2 , ILO3 , ILO4	CH10 CH11	In-person	
4	Binomial Trees	ILO1 , ILO2 , ILO4	CH12	In-person	
5	Binomial Trees	ILO1 , ILO2 , ILO4	CH12	In-person	
6	Black-Scholes-Merton (BSM) Model	ILO1 , ILO2 , ILO3	CH16	In-person	
7	Portfolio Hedging	ILO1 , ILO2 , ILO3	CH19	In-person	

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
8	Mechanics of Futures Markets, Hedging Strategies using Futures	ILO1 , ILO2	CH2 CH3	In-person	
9	Determination of Forward and Futures Prices	ILO1 , ILO2	CH5	In-person	
10	Interest Rate Futures	ILO1 , ILO2	CH6	In-person	
11	Swaps, Course Wrap-up and Exam Briefing	ILO1 , ILO2	CH17	In-person	
12	Presentation	ILO1 , ILO2 , ILO3 , ILO4		In-person	
13	Quiz (tentative timing, details will be confirmed)	LO1, ILO2 , ILO3 , ILO4			

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 conducted. Opportunities will be provided for students to raise 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.
Group 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	Holistic	Multistructural
2	Continuous Assessment (CA): Presentation(Tutorial Presentation)	1,2,3,4	Oral Communication	8	Team	Holistic	Multistructural
3	Continuous Assessment (CA): Test/Quiz(Quiz)	2,3,4	Acquisition of knowledge	20	Individual	Holistic	Multistructural
4	Continuous Assessment (CA): Presentation(Project Presentation)	2,3,4	Teamwork & Interpersonal Skill	10	Team	Holistic	Multistructural
5	Summative Assessment (EXAM): Final exam(Final Examination)	1,2,3,4	Acquisition of knowledge	50	Individual	Holistic	Multistructural

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).

Peer evaluation is incorporated when there is group work as a continuous assessment. See Appendix for the form.

i. Peer evaluation will be conducted in the last seminar of the semester.

ii. Each student will be provided with a form to fill.

iii. Tutorial and Project presentation will be adjusted based on peer evaluation. An individual member's mark will be deducted by 30% with an average rating <4, by 40% with an average rating <3, and 50% with an average rating <2. Students could be notified of their average rating by the other members of the group in Week 14 (reading week), and students can approach the instructor before the final exam date if not satisfied with the average rating.

Formative Feedback

You will receive feedback on your Tutorial Presentation, Project Presentation, and Quiz. Feedback on teamwork skills will be via 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 project or 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)

Important issues to note:

1. If you have a medical condition and need special arrangements for the final exam, you must inform the instructor latest by week 5. Medical proof must be provided.
2. Cell-phones must be turned off or on vibration mode when in class. Students are expected to be respectful to other students and to the instructor. Errant students will be asked to leave the seminar room. You are allowed to

use laptops.

3. Students must abide by the university honour codes. Copying solutions from illegal sources (including from senior students) and cheating during quizzes/exam are serious violations of the university honour codes. If caught, the student will be reported to the undergraduate office and given an "F" grade for BF2209 immediately.

4. The instructors DO NOT DISCUSS past year exam questions. Do NOT come to us with this request as the outcome is negative with 100% certainty. The past year exam questions will be incorporated into the lecture and discussed accordingly. There will be no tutorials as all questions will be discussed real-time in class.

5. The date of the final examination is fixed by the university and CANNOT be changed.

6. Consultation with instructors is strictly by appointments only.

7. The syllabus is dynamic and subjected to changes. Depending on the progress of the class, the instructor reserves the rights to add/remove topics from the syllabus.

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