

School of Administrative Studies
Faculty of Liberal Arts and Professional Studies

Derivative Securities

Course Number: **AP/ADMS 4503 A**

Term: **Fall 2025**

Course Outline

Instructor: Professor Xiaofei Li

Class Hours and Rooms: **Section A, Wednesdays, 4 pm – 7 pm, in DB 1005**

Office: Atkinson 235A

Office Hours: Tuesdays, 1 pm – 3 pm, or by appointments

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Course Description

The financial world has witnessed continual innovations since the mid-1970s with new securities called *derivatives*. These securities, among which we find futures and forward contracts and options, are traded on basic underlying assets such as stocks, bonds, commodities, interest rates and currencies. Their lower costs, as well as the innovative profits they offer, make them very attractive and useful in speculative and hedging strategies.

This course will introduce these derivatives. After taking this course, you will have a good knowledge of how these contracts work, how they are used, and how they are priced. Individuals who are skilled at analysing derivatives are in high demand in financial centres throughout the world.

Prerequisites

ADMS 3530 (Finance) and ADMS 3531 (Personal Investment Management) are prerequisites. ADMS 4504 (Fixed Income Securities and Risk Management) and ADMS 4509 (Financial Risk Management) are highly recommended to be taken concurrently with or after this course.

Student Evaluation

Assignments 1 and 2	7.5% each for a total of 15%
Midterm Exam	35%
Final Exam	50%

Required Textbook

[Options, Futures, and Other Derivatives](#), 11th Edition (or any edition after the 5th), John C. Hull, Pearson Education, Inc., 2022, ISBN 10: 0-13-693997-X, ISBN 13: 978-0-13-693997-9 (hereafter, *Hull*).

Method of Instruction

A combination of lectures, discussions and problem-solving is used. PowerPoint slides will be available on the course website in advance of every class. Throughout the course, your active participation is encouraged. You are required to think, to analyse, to evaluate, and to apply problem-solving techniques. You are also expected to complete assigned reading and/or problem-solving materials for each class.

Calculator

You need a handheld non-programmable calculator that includes basic math functions (e.g., logarithm, exponential, square root and power functions). It is also helpful if the calculator includes basic financial functions (e.g., PV, FV, and PMT etc.). If you will pursue the Chartered Financial Analyst (CFA) designation in the future, note that only two financial calculators are currently allowed for the CFA exams in Canada: Texas Instruments BAII Plus and Texas Instruments BAII Plus Professional (Hewlett Packard 12C is allowed if you write outside Canada).

Assignments

There are two assignments. Assignments will be posted on the course website *at least* three weeks in advance of the due date. Assignments involve problem-solving and short answers and must be submitted *individually* in *hard copies*.

Assignments are due at the start of the class on the assigned date. Late assignments will **NOT** be accepted. If your assignment is late, you will receive a mark of **zero (0)**. Under **no** circumstances will faxed or photocopied assignments be accepted. **Neither** can an assignment be submitted by e-mail.

Midterm and Final Exams

Both the midterm and final exams are **closed book** and involve problem-solving and short answers. If you miss a midterm exam for a legitimate reason, your final exam performance relative to other students in the class will be used to estimate your midterm exam mark. There is **no** make up midterm exam. The estimation and any further adjustments will be entirely at the discretion of the Course Director/Area Coordinator and **not** subject to any appeal. Students with a conflict due to religious reasons will be accommodated. Please inform the Course Director in writing by the fourth class if you have such a conflict. All students who need a passing grade for the course must take the final exam.

Note: It is the policy of the School of Administrative Studies Finance Area that **instructors will *not* sign a DSA form if a student misses both the midterm and final exams.** Students in this situation will need to petition for a remedy appropriate to their circumstances.

Formula Sheets

The formula sheets for both the midterm and final exams will be posted on the course web *at least* one week before the exam date. Please do ***not*** bring the formula sheets to the exams with you. You will be provided with copies of the formula sheets at the exams.

Quiz

A **mandatory quiz** will take place in the second class of the course. You will need a calculator (see page 2). Although it carries *no* weight, the quiz will help you determine if you have the mathematical and financial background and prerequisites needed to take this course. Based on your performance in the quiz, it is your responsibility to decide whether you should de-enrol from this course or *not*.

Academic Honesty and Integrity

In this course, we strive to maintain academic integrity to the highest extent possible. All instances of academic dishonesty in this course will be reported to the appropriate university authorities, and can be punishable according to the Senate Policy on Academic Honesty:

<https://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/>

Deferred Standing – Missed Final Exam

Deferred standing may be granted to students who are unable to write their final examination at the scheduled time. In order to apply for deferred standing in an AP/ADMS class, students must register at:

<http://sas-app.laps.yorku.ca>

The DSA and supporting documentation must be submitted **ONLINE** *no* later than **five (5) business days** after the date of the final exam. These requests will be considered on their merit, and **decisions will be made available by logging into the same link as above.** *No* individualized communication will be sent from the School to the students (i.e., *no* letter, phone call, or e-mail).

Tentative Course Schedule

The topic order will be as stated below. However, if we can *not* finish the material listed in a week, the remainder will be carried forward to the following week. Depending on time constraints some topics may be subject to minor changes.

Week	Date	Topics and Chapter Readings
1	September 3	Introduction, <i>Hull</i> , Chapter 1 Basic Financial Concepts (A review)
2	September 10	Futures Markets and Central Counterparties, <i>Hull</i> , Chapter 2 In-class quiz Assignment 1 is posted
3	September 17	Determination of Forward and Futures Prices, <i>Hull</i> , Chapter 5
4	September 24	Determination of Futures and Forward Prices (<i>continued</i>), <i>Hull</i> , Chapter 5
5	October 1	Hedging Strategies Using Futures, <i>Hull</i> , Chapter 3
	Midterm Exam, October 10th, Friday, 7 pm – 9 pm	Midterm exam covers Weeks 2 – 5 (Chapters 2, 3, and 5)
6	October 8	Mechanics of Options Markets, <i>Hull</i> , Chapter 10 Properties of Stock Options, <i>Hull</i> , Chapter 11 Assignment 1 is due
7	October 22	Trading Strategies Involving Options, <i>Hull</i> , Chapter 12
8	October 29	Binomial Trees and the Greek Letters, <i>Hull</i> , Chapters 13 and 19 (19.1 – 19.4)
9	November 5	Binomial Trees (<i>continued</i>), <i>Hull</i> , Chapter 13 Assignment 2 is posted
10	November 12	The Black-Scholes-Merton Model, <i>Hull</i> , Chapter 15
11	November 19	Options on Stock Indices and Currencies, <i>Hull</i> , Chapter 17 Futures Options and Black's Model, <i>Hull</i> , Chapter 18
12	November 26	Volatility Smiles and Volatility Surfaces, <i>Hull</i> , Chapter 20

		Basic Numerical Procedures, <i>Hull</i> , Chapter 21 (21.1 – 21.7) Assignment 2 is due in the last class
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