UNIVERSITY OF TORONTO
DEPARTMENT OF ECONOMICS
ST. GEORGE CAMPUS

ECO461– ECONOMICS OF FINANCIAL RISK MANAGEMENT
SPRING 2022

Instructor:	**Dr. Ata Mazaheri**
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Course Delivery

Note: Until January 31, ECO461 will be delivered completely online so a reliable internet access is imperative. Thereafter, the course is scheduled to be delivered in person unless UTSC announces otherwise.

The lectures will be recorded using "Snagit" and posted on a weekly basis on Quercus. For each lecture, you are expected to complete the readings, watch the videos, and practice the problem sets. To help you with all these, there will be TA office hours on Bb collaborate as well as discussion boards. My TAs will also conduct tutorials on Bb Collaborate, those will also be recorded and can be played at a later date.

Time-zones: All times posted will be in EST, i.e. local Toronto time. If you are in a different time zone, please make sure you correctly identify what EST converts to where you are. Errors in calculations are not an acceptable reason to miss deadlines.

Course Description:

The course focuses on understanding how institutions manage interest rate risk, exchange rate risk, and commodity price risk using derivatives. More specifically the course examines the use of forwards, futures, SWAPs, options, and related financial derivatives for hedging, arbitrage, and speculation in the global environment. The emphasis is on developing the motivation, issues, and techniques behind financial engineering with these derivatives, as practiced by firms and individuals.

The topics covered in this course include, the basics and the pricing of the derivatives securities, the hedging using derivatives, the value-at-risk (VaR) measure of risk, as well as credit risk:

By the end of this course you would learn:

I. How the derivatives markets work.
II. How they can be used to manage risk.
III. How derivative prices are determined.
IV. What VaR is and how it works.
V. How to measure and hedge credit risk.

Textbook:

Required Text: Hull, J, 2018, *Options, Futures, and Other Derivatives*, 10h edition, Prentice-Hull Inc.

Evaluation:

	Weight	Time (Tentative)	Location
Midterm	**40%**	February 15 (9-11AM)	TBA
Final Exam	**60%**	TBA	TBA
Total	**100%**		

Notes:

- **Test-1**: Material covered till the end of **Lecture-5**.
- **Final Exam:** Inclusive of all the material.

Aids Allowed for Midterm and Final Exam

Note: If the in-person classes resume then the tests will be in person as well:

- The term tests as well as the final are closed book assessments.
- You are allowed a non-programmable calculator.

Otherwise:

- The assessments are open book but should be done individually.
- By taking the assessments you are making the following pledge:

"The University of Toronto's Code of Behaviour on Academic Matters applies to all University of Toronto students. The Code prohibits all forms of academic dishonesty including, but not limited to, cheating, plagiarism, and the use of unauthorized aids. Students violating the Code may be subject to penalties up to and including suspension or expulsion from the University.
In submitting the assessments in Quercus under my name, I confirm that my conduct during this assessment adheres to the Code of Behaviour on Academic Matters. I confirm that I did NOT act in such a way that would constitute cheating, misrepresentation, or unfairness, including but not limited to, using unauthorized aids and assistance, collaborating with another person, impersonating another person, and committing plagiarism."

The midterm test is a two-hour test while the final is three hours long. There will be no makeup test. If you miss the midterm for any reason, the final exam will be re-adjusted for the total of 100%.

Assignments:

There are two optional assignments each worth 5%. They will be marked as follows: 5: Perfect, 2.5 satisfactory, 0: otherwise. Details on the assignments will be posted later.

Preparation

- This is rather fast moving course so you need to study hard. The lecture notes are posted several days ahead of the lecture. It is important to read them before attending each lecture. It is also important for you to study the textbook on a regular basis otherwise you will soon find yourself lost!
- Lectures include questions/examples and I will also post practice questions, I expect you to learn those.
- There are also questions assigned from the book. Although I do not consider them as important as my own questions, it will help your understanding if you solve some of them on a weekly basis.

E-mail Policy

Email should NOT be seen as an alternative to meeting with the instructor (or the TA) during office hours. Nor should email be used as a mechanism to receive private tutorials (especially prior to tests) or to explain material that was covered in lectures you missed. Therefore, I will not respond to email inquiries unless it is an emergency. I will take up 'generic' questions that could be of interest to all students at the beginning of the next class.

Course Schedule

Date	Topic	Session Material	Recommended Questions
Week-1	**Introduction, Futures Markets**	Chapter 1, Chapter 2	1.25, 1.26, 1.27
Week-2	**Futures Markets, Hedging Strategies Using Futures**	Chapter 2 (Cont'd) Chapter 3	2.16, 2.17, 2.23 3.16, 3.18, 3.19, 3.20
Week-3	**Interest Rates & Duration** **Interest Rate Futures**	Chapter 4 Chapter 6	4.5, 4.11, 4.17, 4.22, 4.23 6.6, 6.10, 6.14, 6.17, 6.19
Week-4	**Determination of Forwards and Futures Prices**	Chapter 5	5.16, 5.17, 5.21, 5.22, 5.23
Week-5	**Swaps**	Chapter 7	7.2, 7.3, 7.9, 7.10, 7.12
Week-6	**Options Markets:** **Mechanisms, Properties, Strategies** **Binomial Tree, Dynamic Hedging**	Chapter 10 Chapter 11 Chapter 12 Chapter 13	10.9, 10.16 11.13, 11.15 12.7, 12.12, 12.18 13.4-13.6, 13.8-1-13
Week-7	**Option Valuation** **[The Black-Scholes-Merton Model]**	Chapter 15 (Excluding 14.6)	15.13-15.16, 15.19-15.21
Week-8	**Exotic Options**	Chapter 26	26.4, 26.12, 26.19
Week-9	**Option Sensitivities & Delta Hedging [The Greek Letters]**	Chapter 19	19.2, 19.3, 19.8-10, 19.14, 19.16
Week-10	**Value at Risk**	Chapter 22: 1-4	22.8,22.11,22.13,22.16,22.21
Week-11	**Credit Risk**	Chapter 24	24.1, 24.3, 24.5
Week-12	**Securitization and Credit Crisis of 2007**	Chapter 8	

Note: Chapter references are to John C. Hull's textbook