UNIVERSITY OF TORONTO
DEPARTMENT OF ECONOMICS
ST. GEORGE CAMPUS

ECO461– ECONOMICS OF FINANCIAL RISK MANAGEMENT
SPRING 2020

Instructor: **Dr. Ata Mazaheri**
Office Hours: **By appointment**
Telephone: **(416) 287-7348**
E-mail Address: **mazaheri@chass.utoronto.ca**
Web Page: http: https://q.utoronto.ca

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, 2015, *Options, Futures, and Other Derivatives*, 9h edition, Prentice-Hull Inc.

Evaluation:

Mid-term Examination	40%
Final Examination	60%
TOTAL	100%

Both exams are closed book. However, you are permitted to bring a calculator and a **hand-written** "crib sheet" to each of the exams. For the mid-term, you may use **one side** of one 8½" × 11" page with notes and/or formulae. For the final exam, you may use **two sides** of an 8½" × 11" page. 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 with a legitimate reason, the final exam will be re-adjusted for the total of 100%.

Assignments:

There are three optional assignments each worth 5%. They will be marked as follows: 5: Perfect, 2.5 satisfactory, 0: otherwise. The first two assignments are computer-based. The third consists of a short paper (no more than 5 pages double-spaced; 800-1000 words, due last day of school) discussing the modern use of forwards, futures, SWAPs, options, or related derivatives in managing some aspect of financial risk in global markets. A possible paper topic could be to write a case discussing a specific firm's use (or misuse) of derivatives in managing (or mismanaging) some aspect of risk. See Hull's book, Chapter 23, which discusses specific cases of firms' use of derivatives in managing risk. The Wall Street Journal articles accessible through E-Journal electronic provides many examples of derivatives failures for specific firms that offer good ideas for this paper. In addition, Harvard Business School (HBS) materials can also be used, but you need to expand on the available studies.

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	**Midterm** **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