

York University
Schulich School of Business
Futures, Options & Derivative Securities
FINE6800

<u>Course Time:</u>	Tuesday 7:00-10:00pm
<u>Class Location:</u>	Room T.B.A. @ S.S.B.
<u>Professor:</u>	Moshe Arye Milevsky
<u>University Office:</u>	S.S.B. Finance Area
<u>Office Telephone:</u>	(416) 736-2100 ext: 66014
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<u>Course Material Website:</u>	www.yorku.ca/milevsky
<u>Office Hours:</u>	Tuesday 5:00 - 7:00pm (or by appointment)

Course Description:

This is an advanced elective course on the subject of derivative securities. The course objectives are to acquire an essential ability to use and price various types of structured derivative products most commonly employed in the investment banking field. The course is geared towards students who are interested in a career in financial trading, pricing, risk management and regulation.

Course Prerequisites:

In addition to the basic core finance course, the material assumes a solid background in Financial Economics, Calculus and Probability Theory. Students who do not feel comfortable with the above mentioned knowledge are encouraged to speak with the instructor prior to enrolling.

Grading Scheme:

Class Participation:	10%
Homework Assignments (2):	20%
Group Project:	20%
Final Exam (Open Book):	50%

Notes:

- 1) Participation can manifest itself in many shapes and forms such as asking intelligent questions in class as well as conversing with me about the subject during office hours or even in the hallway. There is no excuse for a lack of participation. Class attendance is a very important component of participation, even though it is not required in the formal sense.
- 2) Faxed and/or late assignments will not be accepted under any circumstances unless a valid medical reason is provided. Note that homework questions will be assigned each week, and should be 'solved' prior to the next class, since they will be discussed at the start of class. I will (randomly) ask students to present/solve/discuss the assigned questions.
- 3) The Faculty Council of the Schulich School of Business has passed a motion prescribing a range and target mean for final grade distributions for elective courses. The motion states that the average grade, using a nine point scale, must be between 5.2 and 6.2, which is in the B+ range. Please note that I will be grading in accordance with this guideline.
- 4) I strongly encourage you to send me questions and comments via email and promise a 48 hour turn around to your Emailed questions.

Course Materials:

I will post my PowerPoint lecture notes (in PDF format) on my website, under the course material section, on the Tuesday morning of the day of the lecture. Please make sure to download a copy of this before coming to class on Tuesday evening. Also, please make sure to read the financial section of either the Globe and Mail or the National Post in preparation for class since I like to refer to current events when covering the more applied material.

Textbook:

Options, Futures and other Derivative Securities

By: John C. Hull. Simon & Schuster Company, Prentice Hall, New Jersey,

Note: Please make sure you have the most recent edition as the chapters and homework questions refer to that edition.

Agenda: Subject to Change.

Date	Topic
Lecture #1	Introduction to Derivative Securities. Futures and Forward Contracts. Introduction to Derivative Securities. Definitions: Primary vs. Derivative. What are they? Who needs them? What are they worth? What can go wrong? Main Categories: Equity, Interest Rate, Foreign Exchange, Commodity, Real Estate. Mechanics and Institutional Characteristics. Hedging vs. Speculation. Classical Securities with Embedded Derivatives.
Lecture #2	Continuation of Basic (Linear) Structures, and Example of Hedging Strategies. Futures and Forward Contracts on Commodities, Currencies and Equities. Exchange Traded vs. Over the Counter. Clearing House. Mark-to-Market & Margin Requirements. History of the Options and Futures Market. Regulation, Accounting and Tax. Valuing Forward Contracts, Forward Price vs. Futures Price. The Cost of Carry. Futures Price and Expected Future Spot Price. Arguments For and Against Hedging.
Lecture #3	Interest Rates and Duration. Interest Rate Futures and Forwards. Spot Curve vs. Yield Curve vs. Forward Curve Interest Rate Mathematics. Treasury Bills and Treasury Bonds. Eurodollars.

Lecture #4	Homework #1 is due. Swaps. Mechanics and Valuation of Interest-Rate Swaps. LIBOR. Comparative Advantage Argument. Relationship with Forwards. Currency Swaps. Other Swaps. Credit Risk and Credit Derivatives.
Lecture #5	Options Markets. Types of Options. Newspaper Quotes. Margins and the Options Clearing Corporation. Regulation and Taxation. Warrants and Convertibles. Factors Affecting Option Prices. Properties of Options. Upper and Lower Bounds. Early Exercise Features. Put-Call Parity. Dividends. Trading Strategies.
Lecture #6	Continuation of Basic Options as well as advanced strategies and corporate uses of options. Read Chapters 7,8 ,9.
Lecture #7	Introduction to Binomial Trees and Pricing Models. One period vs. multi-period models. Risk neutral vs. real world probability measures. Hedging ratios.
Lecture #8	Continuation of Binomial Option Pricing. Derive the BOPM and illustrate limiting arguments.
Lecture #9	Homework #2 due. Introduction to Continuous-Time Stochastic Models. Brownian Motions, Diffusions, Geometric Processes, Martingales, Probability Calculations.
Lecture #10	Continue with derivation of Black-Scholes option pricing model. Options on Currencies, Futures and Commodities.
Lecture #11	The Greeks, Hedging , Risk Management for Option and Derivative Portfolios, Analysis of Exotics.
Lecture #12	On Sunday prior to the Exam there will be a review and Q&A session
FINAL EXAM and PROJECT DUE	

