

Derivative Securities
FIN 410
Course Syllabus

Course Description

Students gain a thorough understanding of options, futures, and other financial instruments. Skills are developed in basic pricing analysis, use of pricing models, and trading and hedging strategies. Students are first introduced to the basic techniques for pricing, hedging, and other analysis. Next, these techniques will be applied through an introduction of hedging strategies. The end goal is to develop skills which the students can apply in derivative markets.

Assignments: Each student will be required to complete a series of assignments dealing with derivative pricing and strategies. These assignments will require students to use theoretical models, monitor market prices, and track strategy positions.

Course Objectives

At completion of the course, students will be able to:

- ⇒ *Describe* the operation of option/futures markets
- ⇒ *Calculate* the price various derivative securities
- ⇒ *Create* strategies which meet specified goals (i.e. risk reduction)
- ⇒ *Evaluate* and *change* these strategies in light of changing economic conditions
- ⇒ *Apply* theoretical derivatives knowledge via spreadsheet applications

Instructor

Dr. Matthew W. Will

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Phone: 788-3370 Office: Esch Hall 52

Web: www.mattwill.com (see course web page for supplemental information)

Office Hours

Mon 10:00 am – 11:00 am

Tue 4:30 pm – 5:30 pm

Wed 3:00 am – 4:00 am

By appointment

Student Handbook

All students are required to have a complete understanding of the student handbook, especially as it related to student rights and responsibilities. It is up to the student to understand the this document.

Required Materials

Fundamentals of Futures and Options Markets by John C. Hull, 7th Edition, Prentice Hall, 2011.
<http://www.rotman.utoronto.ca/~hull/>

Email Account & turnitin.com account

Financial Calculator - (recommend HP12C)

Access to Personal Computer and Spreadsheet program

ON RESERVE (**BKM**): Essentials of Investment by Bodie, Kane and Marcus, 5th edition, McGraw Hill, 2004...and...Options as a Strategic Investment by McMillian.

Course Requirements

30% Final Exam
40% Quizzes
30% Assignments & Pop Quizzes

Grading

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|---|---------|
| A | 90-100% |
| B | 80-89% |
| C | 70-79% |
| D | 60-69% |
| F | 0-59% |

Pluses and minuses are assigned at the instructor's discretion, based on participation, preparation, attendance and score within each range.

Academic Dishonesty and Plagiarism

You must not adopt or reproduce ideas, words, or statements of another person without giving an appropriate acknowledgement to the source. You must give due credit to the originality of others and acknowledge an indebtedness wherever you:

- Quotes another person's actual words, either oral or written;
- Paraphrases another person's words, either oral or written;
- Uses another person's ideas, opinions, or theories; or
- Cites facts, statistics, or other illustrative material, unless the information is common knowledge.

All assignments must be your original work and not the work of other students. Neither group work nor the individual work of another student may be submitted by you. Submission of such work will be considered academic misconduct. Incidents of academic misconduct, dishonesty and/or plagiarism will be handled as per the Student Handbook.

Assignments & Pop Quizzes

Assignment details will be provided in class. Students must submit the assignments as instructed in class or credit will not be given. If students do not understand the assignment, they are responsible for asking the instructor for clarification when the assignment is reviewed in class. Most assignments will require students to compute answers on a specific security. Every student must select a DIFFERENT security. Directions on doing this will be provided. Credit will not be given for failure to select a proper security.

Pop quizzes over the readings may be given without notice by the instructor. Students should complete the assigned readings each night in preparation for the lecture and possible questions. Students who miss class without a pre-authorized university absence may not make up the missed pop quiz.

The instructor reserves the right to require supplemental assignments during the semester.

Quizzes / Exams

The exams are designed to evaluate the student's comprehension of material rather than just memorization. Questions may include short answer/essay, as well as problems. On exams, you will be responsible for all of the assigned readings.

If you must miss an examination, you must let me know about this prior to the exam. It will be solely at the instructor's discretion whether you may take a make-up exam and under what terms.

Class Attendance, Preparation & Participation

Class attendance is an important part of the academic process, and you are expected to attend classes regularly and to manage your schedule in order to meet the demands of this course. If you are absent, you will be responsible for arranging makeup work to be completed prior to the absence or immediately upon return to class at the instructor's discretion. As per the student handbook, reasonable documentation or verification of claims regarding absences may be requested.

Class preparation is critical to success in this course. You are expected to:

- (a) read the assigned material prior to arriving to class, as well as
- (b) review the solved problem illustrations in the chapter and
- (c) prepare a list of questions that you have about the topic.
- (d) participate in class discussions

Please note that the course topics build upon prerequisite knowledge of fundamental business concepts, algebra and basic spreadsheet skills. If you feel you may be deficient in any of these areas, you are encouraged to review them and/or seek tutoring outside of class.

FIN 410 - Winter 2012

Tentative Schedule (subject to change at the instructor's discretion)

| Date | Topic | Reading | Assignment | Slides |
|--------|----------------------------|----------------------------------|---|--------|
| 16-Jan | Review Course | Ch 1, Weblink 1 & 2 | | Set 1 |
| 18-Jan | Options overview | BKM - 14.1, 14.3 | Chart one call and one put for an option | Set 2 |
| 20-Jan | Futures overview | Ch - 2 BKM - 16.1, 16.2, 16.5 | | Set 3 |
| 23-Jan | Commodity futures | WebLink 3 | Compute the basis for 4 different expirations on the same commodity | Set 4 |
| 25-Jan | Futures hedging strategies | Ch 3 | | Set 5 |
| 27-Jan | Futures hedging strategies | Weblink 4 - Ch 5 thru 7 | | Set 6 |
| 30-Jan | Generic Derivatives | News Article | News Article & Discussion | |

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|--------|-------------------------------------|--------------------------------------|--|--------|
| 1-Feb | Review | | | |
| 3-Feb | Quiz | | | |
| 6-Feb | Interest, Forward and Futures Rates | Weblink 5 Appendix C | | Set 7 |
| 8-Feb | Duration | various text pages See index | | Set 8 |
| 10-Feb | NO CLASS | | | |
| 13-Feb | Financial futures | Ch 4 | Compute forward rates for a yield curve | Set 9 |
| 15-Feb | Financial futures | Ch 5 | | Set 10 |
| 17-Feb | Financial futures | Ch 6 Weblink 5 - Ch 1 thru 3 | | Set 11 |
| 20-Feb | Financial futures | Ch 6 Weblink 5 - Ch 1 thru 3 | Compute the futures price on a WSJ listed interest rate futures | Set 11 |
| 22-Feb | Review | | | |
| 24-Feb | Quiz | | | |
| 27-Feb | Hedge Ratios | Class notes | | Set 12 |
| 29-Feb | Swaps | Ch 7 Weblink 6 | | Set 13 |
| 2-Mar | Currency SWAPS | Ch 7 Weblink 6 | | Set 13 |
| 5-Mar | Credit Default SWAPS | Ch 23 | Bring an article to class on Credit Default Swaps & Discuss in class | |
| 7-Mar | Credit Default SWAPS | News Article | News Article & Discussion | |
| 9-Mar | SWAP Quiz | | | |
| 12-Mar | NO CLASS | | Spring Break | |
| 14-Mar | NO CLASS | | Spring Break | |
| 16-Mar | NO CLASS | | Spring Break | |
| 19-Mar | Foreign exchange | Ch 3 thru 7 | | Set 14 |
| 21-Mar | Foreign exchange | Ch 3 thru 7 | | Set 14 |
| 23-Mar | Option markets | Ch 9 & McMillan Ch 1 (on reserve) | | Set 15 |
| 26-Mar | Option Pricing | Ch 10 | | Set 16 |

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|------------------|----------------------------|---|--|--------|
| 28-Mar | Option Pricing | Ch 10 | Calculate the price of a call option | Set 16 |
| 30-Mar | Option Volatility | Ch 13 & Weblink 7 | Calculate historical / implied volatility and probability intervals for a stock option | Set 17 |
| 2-Apr | Option pricing | Ch 12 | | Set 18 |
| 4-Apr | Quiz | | | |
| 6-Apr | Option strategies | Ch 11, McMillan appendix A, B, C (on reserve) | | Set 19 |
| 9-Apr | Futures options | Ch 16 | | Set 20 |
| 11-Apr | The Greeks | Ch 17 | Calculate the greeks for the option used in prior homework | Set 21 |
| 13-Apr | NO CLASS | | | |
| 16-Apr | Volatility Smiles | Ch 19 | | Set 22 |
| 18-Apr | Mortgage Meltdown | Ch 8 & News Article | News Article & Discussion | NEWS |
| 20-Apr | Mortgage backed securities | Ch 22, Weblink 8 & 9 | | Set 23 |
| 23-Apr | VaR | Ch 20 | Calculate the 10 day, 99% level VaR for \$1mil investment | Set 24 |
| 25-Apr | Derivatives Regulation | Dodd-Frank Bill | News Article & Discussion | NEWS |
| 27-Apr | Review | | | |
| Week of April 30 | FINAL EXAM | | | |