Standard Course Outline
FIN 680 Seminar in Derivatives

I. General Information

Course Title: Seminar in Derivatives
Course Number: FIN 680
Prerequisites: Graduate business standing
SCO Prepared by: Professor Pia Gupta
SCO Revised by: Professor Lu Zhu (April 2016)

II. Catalog Description

This is an advanced course in derivatives. Topics will include: futures markets, options markets, options on futures, trading strategies, volatilities and risk management, credit risk, credit and interest rate swaps, energy and commodity derivatives, volatility derivatives, hedging and speculation, modeling and valuation, and derivative market regulation. Letter grade only (A-F).

III. Recommended Textbooks


IV. Curriculum Justifications

The curriculum is intended to give graduate students the necessary finance skill level to be able to:

(1) Understand the role of derivatives in financial markets,
(2) Model and value derivative securities such as futures, options, swaps, and commodities, and
(3) Understand the risks associated with hedging and speculative strategies using derivatives.

The course is aligned with the CBA learning goals of critical thinking, business functions, quantitative and technical skills, interpersonal, leadership skill and team skills.
V. Course Objectives

Skill- and Content-specific Goals of this course are:

Critical Thinking: Students will be able to integrate and apply theoretical knowledge of derivative management, hedging and speculation strategies, and risk management to real market applications.

Business Functions: Students will demonstrate understanding of the role of derivative instruments in financial markets. They will also understand the regulatory environment of derivatives markets before and after the Dodd-Frank Act.

Quantitative and Technical Skills: Students will possess quantitative and technological skills enabling them to improve decision-making in the derivatives market. Students will demonstrate that they can make decisions based on quantitative analysis using the principles, concepts, and techniques through their performance on exams, assignments, and cases.

Interpersonal, Leadership Skill and Team Skills:
1. Student will generate team/group decision-making through managing interpersonal conflict, negotiating and integrating and their skills with others’ to produce financial management decisions and deliver oral presentations
2. Students will demonstrate that they understand the common errors in team/group decision-making and will be able to correct them as a team.

VI. Outline of Subject Matter

This is a listing of the subject matter that must be covered in this course. It does not preclude other topics that are part of the Finance area or the depth of some topics. As this class is a seminar class, materials used are case studies for class participation and discussion as well as examples/problems from the chosen textbooks.

The topical outline for the course is the following:

<table>
<thead>
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<th>Week</th>
<th>Session</th>
<th>Topics</th>
<th>Chapters</th>
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<td>1</td>
<td>Introduction to Derivatives</td>
<td>Chapter 1</td>
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<td>An overview of financial market,</td>
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<td>The use of derivatives,</td>
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<td>Buying and short-selling financial assets</td>
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<td>Futures</td>
<td>Chapter 5</td>
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<td>Mechanics of Futures Markets,</td>
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<td>Index Futures</td>
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<td>Level</td>
<td>Chapter</td>
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<tr>
<td>II</td>
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<td>Treasury-Bond Futures, Determination of Futures Prices, Hedging Strategies Using Futures</td>
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<td>II</td>
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<td>Forwards, Mechanics of Forward Markets, Forward contract on stock, Forward rate agreements, Interest rate forwards, Determination of Forward Price</td>
<td>Chapter 5</td>
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<td>II</td>
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<td>Swaps, Interest rate swaps, Currency swaps, Total return swaps, Swaptions</td>
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<td>III</td>
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<td>Options, Mechanics of Options Markets, Call and put options, Properties of stock options, Option costs and payoffs</td>
<td>Chapter 2</td>
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<td>III</td>
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<td>Trading Strategies Involving Options, Various Types of Options, Put-Call Parity</td>
<td>Chapter 3</td>
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<td>IV</td>
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<td>Binomial Trees, A one-period Binomial tree, Constructing a Binomial tree, Two or more Binomial periods, The Black-Scholes-Merton Model, Introduction to the Black-Scholes Formula, Option Greeks, Applying the formula to other assets</td>
<td>Chapter 10</td>
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<td>IV</td>
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<td>Use of Derivatives in Portfolio Management, Delta-hedging, The mathematics of delta-hedging</td>
<td>Chapter 13</td>
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<tr>
<td>V</td>
<td>9</td>
<td>Credit Risk and Credit Derivatives, The Merton Default model, Bond rating and default experience, Credit default swaps, Interest Rate Derivatives: The Standard Market Models</td>
<td>Chapter 25</td>
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</table>
V 10 Energy and Commodity Derivatives
   Introduction to commodity forwards,
   Pricing commodity forwards by arbitrage,
   Energy markets,
   Hedging strategies
   Chapter 6

VI 11 Regulation in Derivatives Market
    Post-crisis derivative market development,
    Dodd-Frank Act
    Final Review
    Notes

VI 12 Final examination/project due

VII. Methods of Instruction

When reading the book in preparation for class it is essential that the students take an active approach. This means that the students implement the examples discussed in the book using spreadsheet models and work through them as they read. *The best-prepared student is often the one who comes to class with questions about how the concepts and methods can be applied.* Finally, the students should expect to return to the book after class or while reviewing, in order to refine and consolidate their knowledge.

Instructors in planning the exams, and other grading procedures, should adhere to the relevant *University Policy on “Grades, Grading Procedures, and Final Assessments, Final Course.”*

The textbooks for this course should be chosen in accordance with the *University Policy on textbooks.* There are many appropriate textbooks for this course; it is generally agreed that none of them is perfect. The following suggestion is based on the special nature of this core MBA course:

- Students will arrive at this course with extraordinary range of backgrounds; and therefore prior knowledge will be highly variable, however,
- Students will have a level of maturity that will enable them to look at a broader picture via more advanced cases, simulations, group projects and
- Any textbook used for this course **must** be a MBA-level, graduate textbook.
- Examinations **must** be essay-type and/or problem solving questions and avoid the use of multiple-choice questions.

**Some possible textbooks include the following:**

**Main Textbook:**
See Recommended Textbooks above.

**Cases:**
Harvard Business School cases, Ivey Business School cases, or other advanced level cases that focus on a business problem from multiple perspectives.

VIII. Instructional Policy Requirements

The students are expected to comply with the universally accepted norms of considerate and courteous behavior, and with all University rules and policies found in the current University Catalog, including the Withdrawal Policy and Policy on Cheating and Plagiarism. It will be assumed that the students will adhere to the tenets of academic integrity as articulated in Dean’s Letter on Academic Integrity throughout this course. Instructors may specify their own policies with regard to plagiarism, withdrawal, absences, etc., as long as these policies are consistent with the above-mentioned University policies.

It is expected that all students to attend classes regularly and to be responsible from all materials covered in class, regardless of their attendance. Make-up exams are strongly discouraged and will only be given with documented proof of an excused absence. Acceptability of the excuse will be determined based on the appropriateness of the documents. It is important that the student provides all documentation without special prompting from the instructor. The student should give the earliest possible notification of an anticipated excused absence. The students refer to the specific university policy on these issues.

Occasionally adjustments in the course assignments become necessary. The students should be notified about changes, if any, and, whenever possible, they should be consulted in advance about any changes.

Students with Disabilities: Students with disabilities are responsible for notifying their instructor as soon as possible of their needs for accommodation of a verified disability. A student with a disability is urged to consult with Disabled Student Services as soon as possible in order to identify possible accommodations to enhance academic success.