Standard Course Outline
FIN 480 Derivatives

1. General Information:
   Units: 3 credits
   Prerequisites: FIN 350.
   SCO prepared by: Professor Thomas Rhee
   Date Prepared: March 2016

2. Catalog Description:
   This is an introductory course in futures, options, swaps, and other derivatives. It teaches risk management methods and introduces financial engineering techniques, including basic stochastic calculus. It emphasizes the pricing of derivatives and the building of various quantitative models.

3. Curriculum Justification:
   The course is aligned with the CBA learning goals of critical thinking, business functions, quantitative and technical skills.

4. Course Objectives:
   My purpose here is to give a unifying approach to financial engineering even though it may go beyond the conventionally thought of derivative courses. I believe that in this way, students who master this course will have an adequate background in becoming successful “financial engineers” later on in their career.

   The course objective is to learn about various risk management and quantitative arbitrage techniques in securities trading. The course requires some familiarity of introductory calculus and optimization techniques along with some statistical theories. Although some of these materials will be reviewed whenever and wherever possible, the course is primarily for those who do not mind seeing a lot of Greeks. However, I will show you how easy it is to understand those Greeks and use them in real world investing and portfolio management.

5. Outline of Subject Matter:
   Topics to be covered in this class typically include:

<table>
<thead>
<tr>
<th>Topics</th>
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<tbody>
<tr>
<td>1 Introduction to Derivatives and Hedging Strategies using Futures</td>
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<td>2 Interest rates; Forward &amp; Futures Prices; Interest Rate Futures</td>
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<td>3 Swap</td>
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<td>4 Options Properties &amp; Trading Strategies</td>
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<td>5 Option Pricing</td>
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<td>6 Other Options</td>
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<td>7 Option Greeks; Volatility Smiles; Numerical Recipes</td>
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<tr>
<td>8 Value at Risk; Volatility Estimation</td>
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<td>9 Credit Risk</td>
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Credit Derivatives and other Exotic Options

More on models and numerical procedures; Martingales and measures

Interest Rate Derivatives – Standard Model

Convexity, timing, and Quanto adjustments; Interest Rate Derivatives – Models of Short Rate

Interest Rate Derivatives – HJM and LMM; Swaps Revisited

6. Methods of Instruction:

Recommended Textbooks:
John C. Hull, Options, Futures, and Other Derivatives, Prentice Hall, 2009

7. Instructional Policies:

Instructors may specify their own policies with regard to grading, class-room behavior, make-up exam, withdrawal, academic integrity, absences, etc., as long as these policies are consistent with the University policies.

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. 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.

Students with Disabilities: Students with disabilities are responsible for notifying their instructor as early as possible of their needs for an 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.