COURSE SYLLABUS

Instructor:
Name: Mike Hemler
Office: 306 Mendoza College of Business
Phone: (574) 631-6766
Email: mhemler@nd.edu
Office Hours: Feel free to drop by my office anytime! I prefer meeting by appointment when possible, however, so that neither of us has to wait for the other. I can generally meet at 12:30-1:30 and 3:30-4:30 on Tuesdays and Thursdays. I can also generally meet between 11:00 and 4:00 on Mondays and Wednesdays. Please do not hesitate to contact me outside of class!

Course Description:

Designed to follow an introductory derivatives course, this course uses basic knowledge of options and futures as a springboard into more advanced topics. The goal is to provide rigorous applied training that prepares students for employment with firms where derivatives are either of primary importance (e.g., investment banks, trading firms) or secondary importance (e.g., corporations having interest rate or foreign exchange rate exposure that requires hedging). Topics include swaps, forward rate agreements, swaptions, advanced derivatives and strategies (e.g., digital, chooser, and path-dependent options), risk management techniques (e.g., VAR), and organizational risk management.

Classes typically include both lecture and discussion. Financial theory and empirical evidence appear throughout the course due to their important implications for practitioners. Students should read The Wall Street Journal regularly, keep abreast of current events regarding derivatives, and be prepared to discuss them in class. Applications are also incorporated via cases and an independent project in which students must delve into a topic of their own choosing and present their results to the class.

This course is more quantitative than the average finance course. Although students will not be responsible for deriving pricing formulae, topics might often seem quite technical. If a student has the mathematical expertise to explore technical details of pricing, he/she is encouraged to do so. For instance, for a final project a student might wish to analyze a particular exotic derivative in detail. No student will be required to reproduce sophisticated mathematical reasonings or derivations, however. This class focuses on using more sophisticated derivatives, not deriving their underlying pricing formulae.
Course Prerequisites:

The major prerequisite is an introductory course covering options and/or futures markets. MBA students should have taken either FIN 70620 or FIN 70630 or comparable courses. Undergraduate students should have taken, or currently be taking, FIN 40630.

Course Textbooks:

There is one required textbook: *An Introduction to Derivatives and Risk Management, 8th Ed.*, by Don Chance and Robert Brooks. This textbook is also required for three other courses that I teach, i.e., FIN 70620, FIN 70630, and FIN 40630. In addition, there is a supplementary textbook: *Risk Takers: Uses and Abuses of Financial Derivatives, 2nd Ed.*, by John Marthinsen. It contains numerous entertaining case studies, including two that I assign for reading, preparation, and discussion. Although this latter text is not required, I recommend buying it if you are seriously interested in derivatives or risk management. Given the high price of textbooks, however, many students prefer not buying it. Therefore, I have placed several copies of *Risk Takers* on reserve in the BIC. These copies are available for use only in the BIC. Incidentally, *Risk Takers* is also a supplementary text for the aforementioned courses FIN 70620, FIN 70630, and FIN 40630.

Grading Policy:

There will be two quizzes and a cumulative final exam. The quizzes are intended to keep students up-to-date and to provide feedback regarding their mastery of course topics. Each student must turn in two short write-ups in which they answer discussion questions for two cases. Each student must also complete a final project in which they choose, analyze, and present an advanced topic involving derivatives to the class. Class participation will also affect grades, where class participation includes factors such as regular and punctual attendance, constructive participation in class discussions, etc. Specifically, a student’s grade will be based on the following weighted average:

\[ 35\% \text{EXAM} + 25\% \text{QUIZ} + 25\% \text{PROJECT} + 10\% \text{CASE(AVG)} + 5\% \text{PART}, \]

where

- \( \text{EXAM} \) = the exam grade,
- \( \text{QUIZ} \) = the average of the two quiz grades,
- \( \text{PROJECT} \) = the grade on the student project,
- \( \text{CASE(AVG)} \) = the average grade on write-ups for the two cases,
- \( \text{PART} \) = the class participation grade.
Exam and Quiz Policy:

For the final exam, each student can bring one 3×5-inch index card with notes on both sides for reference. For each quiz, each student can bring one 3×5-inch card with notes on only one side. Materials larger than 3×5-inches cannot be used and will be subject to confiscation. Students should bring calculators to the exam and quizzes. The final exam is cumulative and covers all course topics. Obviously, job interviews are important. Nonetheless, given that there are only one exam and two quiz dates, students should not schedule interviews or other conflicts on those dates, which are April 3, April 17, and May 8. There will be no late make-up quizzes! If a student misses a quiz for a reason that I consider acceptable (e.g., illness, an accident, a family emergency, etc.), then the student’s final exam grade will substitute for the missing quiz grade.

Honor Code:

Academic dishonesty in any form is unacceptable. Any breach of academic integrity, however small, compromises the mission and reputation of the University and damages the personal integrity of the individual(s) involved. If you choose to participate in this course, I expect that your work will be completed in full observance of the Academic Code of Honor. Of course, giving or receiving help of any kind on an examination is an obvious violation of this Code. If you are unsure whether certain behavior is acceptable, then it is your responsibility to ask me for clarification before engaging in it.

Case Assignments:

As noted earlier, the supplementary textbook Risk Takers presents several important cases illustrating uses and abuses of derivatives. I am assigning two of these cases. They are: P&G vs. Bankers Trust and Orange County. The emphasis will be on class discussion, not written analysis. Students should read these cases before class and consider the discussion questions provided.

To promote better discussion, I ask each student to work individually and provide written answers for five questions that I assign per case. These questions are: (1) Problems 1, 3, 8, 9, 10 for P&G vs. Bankers Trust, and (2) Problems 1, 2, 4, 7, 8 for Orange County. Answers should be typed and fit on one sheet (both sides) of paper. I do not require time-consuming, detailed answers. I simply want everyone to prepare the case before we discuss it. As long as their answers demonstrate solid effort, students will receive full credit. (Historically, the median grade given for each case has usually been 100.) These write-ups are due in class on the dates listed in the tentative class schedule, i.e., April 10 and April 19. Late write-ups will not be accepted! Students who miss class on those dates can email their write-ups to me prior to the start of class, but they will be penalized twenty points for not being available to discuss the case. I strongly urge students to read these cases and complete their write-ups as soon as possible. These cases are “self-contained” and can be read with minimal knowledge of options and futures. Motivated students can easily finish these assignments early.
Final Project:

All students must complete personalized projects in which they choose, analyze, and present a topic to the class. Students can work in teams of 1–2 people. They are encouraged to choose specialized topics related to the job they shall take after graduation. Potential topics include, but are not limited to: real options, weather derivatives, executive stock options, pricing an unusual exotic derivative, credit risk, accounting issues, case studies, etc. These projects must include significant analysis — they cannot simply rehash information from the popular press, investment firms, etc. Given the short/condensed nature of this class, it is critical that students decide on a topic and actively work on their project as soon as possible. As a result, I shall establish certain dates when we can “mark to market” our progress. For instance, after 2 weeks students should be able to give a brief oral description of what they think their projects will be. This report could be formalized in a short (one page at most!) writeup one week later, i.e., 3 weeks into the module. We could then have oral and/or written updates 1–2 weeks before the final projects are due. These are just illustrative examples, so please let me know what you think!

Individuals/teams must submit their written project analyses in class on Tuesday, April 24. Analyses submitted on April 24, but after class, will be penalized ten points. Analyses will not be accepted after April 24. Analyses exceeding a total length of 25 pages (including the cover page, exhibits, appendices, etc.) will be penalized ten points per extra page. Analyses should be double-spaced with one-inch margins. They should begin with a 1–2 page executive summary that highlights the key findings and conclusions. Each team must also give a PowerPoint presentation of their analysis in class on Thursday, April 26, or Tuesday, May 1. These presentations should be finished and sent to me by noon on Wednesday, April 25, for copying and distribution on April 26. All students should be prepared to discuss their projects, although grades will be based primarily on the written analyses. Students who fail to attend class on April 26 and May 1 will be penalized twenty points on their project grade for being absent. Their teammates (if any) will not share this penalty.
TENTATIVE CLASS SCHEDULE

<table>
<thead>
<tr>
<th>Class</th>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3/20/12</td>
<td>Organizational Meeting &amp; Swaps</td>
</tr>
<tr>
<td>2</td>
<td>3/22/12</td>
<td>Swaps</td>
</tr>
<tr>
<td>3</td>
<td>3/27/12</td>
<td>Interest Rate Forwards and Options</td>
</tr>
<tr>
<td>4</td>
<td>3/29/12</td>
<td>Interest Rate Forwards and Options</td>
</tr>
<tr>
<td>5</td>
<td>4/03/12</td>
<td>Interest Rate Forwards and Options (QUIZ)</td>
</tr>
<tr>
<td>6</td>
<td>4/05/12</td>
<td>Advanced Derivatives and Strategies</td>
</tr>
<tr>
<td>7</td>
<td>4/10/12</td>
<td>Advanced Derivatives and Strategies &amp; P&amp;G vs. Bankers Trust</td>
</tr>
<tr>
<td>8</td>
<td>4/12/12</td>
<td>Advanced Derivatives and Strategies</td>
</tr>
<tr>
<td>9</td>
<td>4/17/12</td>
<td>Financial Risk Management (QUIZ)</td>
</tr>
<tr>
<td>10</td>
<td>4/19/12</td>
<td>Financial Risk Management &amp; Orange County</td>
</tr>
<tr>
<td>11</td>
<td>4/24/12</td>
<td>Managing Risk in an Organization</td>
</tr>
<tr>
<td>12</td>
<td>4/26/12</td>
<td>FINAL PROJECTS</td>
</tr>
<tr>
<td>13</td>
<td>5/01/12</td>
<td>FINAL PROJECTS</td>
</tr>
<tr>
<td>14</td>
<td>5/08/12</td>
<td>FINAL EXAM</td>
</tr>
</tbody>
</table>

Note: (1) This schedule is tentative. It will be modified as necessary, e.g., to accommodate guest speakers. However, dates that correspond to quizzes and case analyses will not change except under extraordinary circumstances. Those dates are critically important; students should make every effort to attend class on those dates. (2) The final exam date has been set as May 8 by the MBA Office. The date for makeup exams, i.e., Final Exam Conflict Day, has been set as May 10 by the MBA Office. All students should plan on taking the final exam on one of those two dates. Travel arrangements should be made accordingly.
READING AND HOMEWORK ASSIGNMENTS

The following reading and homework assignments are from the required textbook, *An Introduction to Derivatives and Risk Management, 8th Ed.*, by Don Chance and Robert Brooks. Reading assignments for a given class should be read prior to that class. There are two types of homework problems — required problems and supplementary problems. Required problems are the more important problems. Students must know how to solve them if they expect to do well on the exams. Supplementary problems are also useful, but generally less important (although still “fair game”) from an exam standpoint.

The rationale for doing homework is to learn the material. Hence, students are allowed (and encouraged!) to discuss the problems among themselves. Collaboration on homework problems does not violate the Honor Code. After seriously attempting the problems on their own, students should then check their solutions versus those from the Instructor’s Manual for the course textbook. All solutions from the Instructor’s Manual will be available in CourseWare (sp.12), which is accessible from the Internet via WebFile. WebFile is one of the “Popular Sites” given at the top of the University of Notre Dame’s homepage. If you go to the finance subfolder in CourseWare (sp.12), you will see this finance class listed. Please note that other useful material — e.g., software, PowerPoint lecture notes, old exams — will also be available in CourseWare (sp.12).

**Tentative Assignments**

**Class 1. Organizational Meeting & Swaps**

*Required Reading:* Chapter 12

*Required Problems:* Chapter 12 — Problems 3, 4, 5, 9, 10, 11, 12, 13, 14

*Supplementary Problems:* Chapter 12 — Problems 1, 2, 6, 7, 8, 16

**Class 2. Swaps**

*Required Reading:* Chapter 12

*Required Problems:* Chapter 12 — Problems 3, 4, 5, 9, 10, 11, 12, 13, 14

*Supplementary Problems:* Chapter 12 — Problems 1, 2, 6, 7, 8, 16

**Class 3. Interest Rate Forwards and Options**

*Required Reading:* Chapter 13

*Required Problems:* Chapter 13 — Problems 6, 7, 8, 9, 10, 11, 12, 13, 15

*Supplementary Problems:* Chapter 13 — Problems 1, 2, 3, 4, 16, 18

**Class 4. Interest Rate Forwards and Options**

*Required Reading:* Chapter 13

*Required Problems:* Chapter 13 — Problems 6, 7, 8, 9, 10, 11, 12, 13, 15

*Supplementary Problems:* Chapter 13 — Problems 1, 2, 3, 4, 16, 18
Class 5. Interest Rate Forwards and Options (QUIZ)

_Required Reading:_ Chapter 13
_Required Problems:_ Chapter 13 — Problems 6, 7, 8, 9, 10, 11, 12, 13, 15
_Supplementary Problems:_ Chapter 13 — Problems 1, 2, 3, 4, 16, 18

Class 6. Advanced Derivatives and Strategies

_Required Reading:_ Chapter 14
_Required Problems:_ Chapter 14 — Problems 3, 6, 7, 8, 9, 10, 11, 12, 13, 15
_Supplementary Problems:_ Chapter 14 — Problems 1, 2, 4, 5

Class 7. Advanced Derivatives and Strategies & P&G vs. Bankers Trust

_Required Reading:_ Chapter 14
_Required Problems:_ Chapter 14 — Problems 3, 6, 7, 8, 9, 10, 11, 12, 13, 15
_Supplementary Problems:_ Chapter 14 — Problems 1, 2, 4, 5

Class 8. Advanced Derivatives and Strategies

_Required Reading:_ Chapter 14
_Required Problems:_ Chapter 14 — Problems 3, 6, 7, 8, 9, 10, 11, 12, 13, 15
_Supplementary Problems:_ Chapter 14 — Problems 1, 2, 4, 5

Class 9. Financial Risk Management (QUIZ)

_Required Reading:_ Chapter 15
_Required Problems:_ Chapter 15 — Problems 3, 4, 5, 8, 12, 13, 14, 15, 17
_Supplementary Problems:_ Chapter 15 — Problems 1, 2, 9, 10, 11, 18

Class 10. Financial Risk Management & Orange County

_Required Reading:_ Chapter 15
_Required Problems:_ Chapter 15 — Problems 3, 4, 5, 8, 12, 13, 14, 15, 17
_Supplementary Problems:_ Chapter 15 — Problems 1, 2, 9, 10, 11, 18

Class 11. Managing Risk in an Organization

_Required Reading:_ Chapter 16
_Required Problems:_ Chapter 16 — Problems 1, 3, 5, 9, 12, 14, 15
_Supplementary Problems:_ Chapter 16 — Problems 2, 4, 7, 16, 17

Class 12. FINAL PROJECTS

Class 13. FINAL PROJECTS

Class 14. FINAL EXAM