BUS 302 – Seminar in Financial Risk Management
Syllabus and Information
Winter 2008

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Textbook and Supplies

1) Don M. Chance and Robert Brooks, an *Introduction to Derivatives and Risk Management* 7th Edition, Thomson Southwestern. (required)
2) Financial calculator – You may use a financial calculator on the tests to **check** your work, but you must show your math for full credit. The TI-BAII or HP 10B are good, I'll use the TI in class. Really, the least expensive calculator will work. (Important keys: e^x, ln(x), y^x and 1/X).
3) A USB drive is a good way to save files in the lab, but you can also email them to yourself.
4) I will post homework solutions on the L drive. A bound copy of my course slides is available. The print shop bills you directly for the cost of the paper and binding. If you don't want a hardcopy, you can get my notes in pdf form (free) on the L drive. You should bring the notes to class, but there is no need to bring the textbook.

A subscription to the Wall Street Journal is recommended (but not required). Two of the projects will introduce Visual Basic for Applications (VBA). A good introduction to VBA is *Microsoft Excel Visual Basic for Applications Fundamentals* by Reed Jacobson (not required).

Course Objectives

This class will provide students with an introduction to financial derivatives. *Financial derivatives are assets, which derive their value from other assets*. Options, futures, and swaps are examples of derivatives. In this class, we will discuss the characteristics and uses of these assets. Understanding of this material is critical to students planning to work in finance after graduation.

The academics responsible for some of the key breakthroughs in this field are sometimes referred to as "Rocket Scientists." This goes back to the use of Ito's Lemma in the Black-Scholes option pricing model. Ito's lemma is a famous result of stochastic calculus, which can help determine the location of a rocket in space at any instant. We will confine our study to the introductory level. Still, we may need to improve our computer/math skills.

Course prerequisites
C-School majors: Bus 221, INTR 202

Grades:

Grades are based on two exams, a final, four projects, and in-class participation. Course grades are weighted as follows:

Exam 1:	25%
Exam 2:	25%
Comprehensive Final:	25%
Projects:	20%
Participation:	5 %

Your exam will receive a letter grade: A, B, C, D or F worth 4, 3, 2, 1 and 0 points respectively. A plus will add 0.33 and a minus will subtract 0.33. The value for the projects will be 4.0*(total points/100), so a student with a 90 total will receive 3.60 points. The final grade will be the grade closest to weighted average of your course elements. For example, a student with an average of 3.83 and above will receive an A. An A- will be the range (0.33 wide) around 3.67 (3.5-3.83). A B+ will be centered on 3.33 (3.16 to 3.49), and so on.

Exam/Final Info: Each exam will have a time limit and the rules of the honor code apply. The exams may include problems, short-answer questions, definitions, and multiple-choice questions. The exams are closed-book and closed class notes, but a formula sheet will be attached to your exam.

- You may use a financial calculator on the exam, but must show the underlying calculations on each problem. While you may use any resident function available on the calculator, you may not use the programmable part of your calculator to store text or automate solutions on any test.
- Formula sheets, as they will appear on the exams, are located at the end of the course notes.
- Cell phone should be turned off and stored away during tests.
- I will try to return the exams to you at the next class meeting. At the end of that class, I will collect them back from you.
- If you have specific questions about your exam (or did not get your grade), please come by my office or ask after class.

Projects

The projects are intended to be done on Microsoft Excel. Two of the projects use Excel VBA. If you don't know VBA, don't worry. We will cover it.

Project	TOPIC	Planned Due Date	Williams 322 Computer Lab (Optional Help: 9:30a-11a)
1	Binomial Model/VBA	2/7	2/6
2	Black-Scholes OPM & Greeks	2/28	2/27
3	Basic/Advanced Option Strategies	3/18	3/17
4	Futures Game	4/1	

There are 4 planned projects. Some of the problems are difficult. If time permits, we will work variations of the project problems in class before the due date. The best way to keep up is to try the project immediately after that review. Please don't ask me to go over the projects during hours if you are absent (unexcused variety) from the review. Most of our projects are done in Excel, and may be copied into MS Word. Do not buy fancy book report covers for your project, please just staple the pages together. The cover page should have your name, the project number and the class time.

Late projects of the unexcused variety will accrue a 2 point penalty per 24 hours or part thereof; just slide the project under my office door along with the self-calculated penalty. If you have a printer problem or some other technical issue, turn in what you have at class time (tell me about the problem and we will arrange a solution without penalty). Please do not consult students with old projects from my class or provide your old projects to rising students preparing to take my class. I would like future students to have the opportunity to think about the solutions, and I ask for your help.

I do not consider it a violation of my trust if you work with a classmate. My hope is that you will not use this as an opportunity to do some good ole fashion "splitting up and copying". This is very easy for me to spot and always disappointing. Acceptable cooperation can range from asking a student sitting next to you in the lab a simple question such as "how did you get that to graph?" or "can you see what I've done wrong here?" to working alongside a friend in the lab. You should disclose it on the cover page: "I acknowledge Mortimer Duke for help graphing problem 3", or "I worked with Randolph Duke". Questions about the projects will appear on the exams.

It is NOT acceptable to copy, print or adapt a file from another student (current or former) and attempt to pass it off as your own work. If you have any questions, about what is or is not acceptable cooperation please ask me. If you are stuck, need Excel help, or have a question, I am happy to help you. I will also be available in the computer lab on the dates listed below. I will circulate around in the lab, but will not hold a formal class.

Learning Objective 1: Introduce Derivative and Derivative Markets

What is a financial derivative? How are derivatives used to hedge and speculate?

Learning Objective 2: Absence of Arbitrage/the Law of one price

The law of one price provides insight for financial managers. When equivalent portfolios trade at different prices, arbitrage is possible. We will explore the relationship between equivalent portfolios.

Learning Objective 3: Derivative Pricing Models

The development of the Nobel-Prize winning Black-Scholes model is key result in financial economics. We will study the process by which they arrived at their conclusions. We will apply the lessons used to price the simple call option and other more (or less) exotic financial instruments.

Learning Objective 4: **Sharpen our Financial Math and Computing Skills**

To gain a more complete understanding of derivative instruments, we must be willing to improve our math and computing skills. Our computer projects will also develop our ability to communicate complex findings.

Accomplishing our objectives

Understanding of financial derivatives provides a challenge to the student at any level. Our class is intended as an introduction to the subject My class notes are provided to help you follow the lectures. The Chance and Brooks text is required to provide some additional information, and a slightly different point of view. To better understand these instruments and markets, we must work examples, develop spreadsheets, and read both academic and practitioner sources. I do not have time to cover in class the many sources of information available on the web, or all of the stories covered in the WSJ. I will point out some news items of topical interest. Beyond our class goals, I encourage you to investigate some of the excellent websites set up by options and futures exchanges, and to read the options sections in the WSJ. A list of topics and suggested reading is provided on the next page.

Planned weekly topics, suggested reading and homework problems
Exact Quiz dates TBA

Dates	Planned Topics
1/8-1/10	Derivative Overview (Chance: Chapter 1) Homework: Chap 1 # 1-13 Technical Background (Chance: Chapter 2) Homework: Chapter 2 # 1-5
1/15-1/17	Rational Option Pricing (Chance: Chapter 3) Chap 3 #1, 2, 5-19 Put-Call Parity
1/22-1/24	Binomial Model (Chance: Chapter 4) Homework: Chapter 4 # 3,5,7,9-13,15,17
1/29-1/31	Binomial Model in Practice/VBA **Exam 1**
2/5-2/7	Black-Scholes (Chance: Chapter 5) Homework: Chapter 5 # 1-7,10,12-16
2/12-2/14	Black-Scholes/Greeks/Implied Volatility Trillion Dollar Bet (Chance: Chapter 16)
2/18-2/22	☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ Washington Break ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺
2/26-2/28	Basic Option Strategies (Chance: Chapter 6) Chapter 6 # 3,4,7,8,13,15,16,18 Advanced Option Strategies (Chance: Chapter 7) Chapter 7 # 1,3,5,7,9,12
3/4-3/6	Introduction to Futures and Forwards (Chance: Chapter 8) Chapter 8 # 1-3, 7-9, 12, 14-17
3/11-3/13	**Exam 2** Futures Pricing (Chance: Chapter 9) Chapter 9 # 1-8, 10, 11,16,17,19
3/18-3/20	Chapter 9 Continued Arbitrage Examples(Chance: Chapter 10)
3/25-3/27	Futures Hedging (Chance: Chapter 11) Chapter 11 # 1-8, 12-15,17,19
4/1-4/3	Interest Rate Derivatives & Swaps (Chap 13 & Class Notes)
4/5-4/11	**Final Exam**

Each exam will feature problems inspired by the homework, projects, class notes and handouts. The answers to the homework will be on the L drive.