

THE UNIVERSITY OF MICHIGAN
THE UNIVERSITY OF MICHIGAN SCHOOL OF BUSINESS

FINANCE 580, Fall 2006

Purpose of Course:

Finance 580 introduces students to one of the most important and most technically challenging areas in finance: derivative securities. Derivative securities include options, futures and forward contracts and swaps among other securities. This course examines corporate risk management techniques and how derivatives can be used to manage risk. This course will also cover institutional characteristics of derivatives exchanges, OTC markets and market clearing mechanisms. Finally, we will examine the pricing of derivatives. Particular emphasis will be given to Black-Scholes model and the binomial option-pricing model. Applications will cover real options, executive stock options, mergers and acquisitions, and international funding alternatives.

Instructor:

Professor Nejat Seyhun

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Class and Office hours:

Class times:

Section 1, Room W2740, 10:20AM -12:40PM, Monday-Wednesday;

Section 2, Room W2740, 2:10PM - 4:30PM, Monday-Wednesday;

Office hours: MW 12:50-1:15PM, MW 4:30-5PM and by appointment.

Readings:

There are additional readings, indicated by c-tools available on c-tools. See;

<https://ctools.umich.edu/portal/site/> or

<https://ctools.umich.edu/portal/site/1091715390760-1453832>

These readings are optional. They are meant to provide some real world relevance. In addition, c-tools contains some newspaper clippings. I will add to these clippings as the course progresses with current interesting articles on derivatives and risk management.

The required textbook for this course is either Brealey and Myers (henceforth BM), Principles of Corporate Finance, 6th edition or the 7th edition, or Ross, Westerfield and Jaffe (henceforth RWJ), Corporate Finance, 6th or 7th edition. You should already have one of these textbooks from

finance 503, 513 or 551. In either case, the 6th editions are substantially cheaper and essentially the same, thus will serve our purposes.

In addition, there are supplemental textbooks by Donald Chance, *An Introduction to Derivatives and Risk Management*, (ISBN=0-03-031147-0 for 5th edition and 0-324-17800-X for 6th edition), R. McDonald, J. Hull, and R. Kolb. If you want to buy one specialized textbook on derivatives, you should buy Don Chance, as this is a good compromise between mathematical rigor and trading, corporate finance and institutional applications. This is a good idea for those who expect to take additional courses in derivatives as well as those who will use derivatives in the course of their careers. If f580 is the only course you plan to take, then BM or RWJ should be sufficient. If you plan to take additional courses on derivatives or risk management, you should probably buy D. Chance. I ordered Don Chance's book for the area bookstores. Both Hull and McDonald are very rigorous but somewhat short on corporate finance applications. Kolb is highly practitioner oriented, especially for those who expect to be traders.

I will give additional optional readings from Don Chance (henceforth DC); *An Introduction to Derivatives*, 5th and 6th editions. I will also make both Don Chance's textbook and the instructor's manual for Don Chance (which contains the answers to all the chapter questions) available in the reserve library. I will also make available Hull and the instructor's manual for Hull (third edition) and McDonald and Kolb textbooks also available in the reserve library. If you prefer some other textbook other than Chance, Hull, McDonald or Kolb, you can follow similar readings from these textbooks.

Nature of Subject Matter:

Understanding derivatives involves logical, often technical, step-by-step approach. It is not possible to go back and forth between more advanced and more fundamental issues. Instead, we need to gradually and systematically build our tool kits. Hence, we will need to methodically familiarize ourselves with the tools of analysis, as well as the technical language of options and futures. If students do not understand the language (and technical jargon) of finance, learning about derivatives will become quite difficult, if not impossible. This means skipping any step of analysis or missing even a single class will have serious consequences later in the semester and will make it nearly impossible for the student to learn the material in class. Moreover, some interesting questions asked in class may have to be postponed until relevant, intermediate analysis is first covered.

Course materials:

My class notes are also available on course tools, which can be downloaded freely. I will make them available one slide per page, three slides per page and six slides per page. You can choose your most preferred style to download.

Grading:

Students will be evaluated based on attendance and class participation, homeworks, final examination. The weightings of attendance, homeworks, and the final exam are as follows:

Attendance and class participation	20%
Homeworks	20%
Final	60%

A word about class participation, which means first and foremost not disturbing the class. This means coming to each class on time (not five or ten minutes late). It means not walking out of the classroom while we are in session. **It also means not taking your cell phone with you into class or turning it off so it does not ring in class**, putting up your name tag, and not having a private conversation with the person nearby. Late arrivals, early departures, **ringing phones and private conversations are very disruptive to the quality of the learning environment in the classroom and disrespectful to the other people.** They can also result in repetition of the same issues already covered, hence, I discourage these strongly.

Second, class participation also means coming to class prepared. Class participation does not mean asking a lot of questions. The quality of the participation counts a lot more than quantity. While some questions are best asked in class, others are better suited to office hours especially if they refer to material that will not be covered in the class.

Homeworks:

There will be weekly homework assignments during the course, starting in week 1. Students **may** work together with their groups in completing their homework. You may also choose to work alone. It is permissible for several students to turn in a single assignment for the group instead of separate identical individual homework, which are due at the beginning of the class. All homework must be given in person in class as a hardcopy. Sending homework as an attachment to an e-mail usually leads to problems and should not be used. Finally, it is inappropriate to try to add someone's name after the homework is turned in.

Students will receive a zero for any homework which is not submitted or which is submitted late. I will drop the lowest homework score in computing each student's homework grade. Therefore, a student will have to miss 2 homework assignments before a zero will enter into the average used to calculate the course grade. **Since I will drop the lowest homework score, late homeworks (or parts of the homework) will not be accepted under any circumstances.** These circumstances include printer equipment failures, network downtime, failure of the personal computer's hard-drive, paper shortages, overactive baby siblings, aggressive pets at home, or even aggressive neighborhood pets. Consequently, students should plan ahead and print their answers sufficiently ahead of time.

Please do not ask me for my solution, or help you get started, or give you hints, or check on your answers, approach, or logic before you turn in your answers. These are not appropriate questions. If I give you help, I would not be fair to other students. I will pass out my answers once you turn in your homework. I am also happy to discuss my solutions after I pass them out.

Course Schedule

Wednesday, September 7

Introduction to risk management concepts

Introduction to Options

Reading: BM; Chapter 20,

RWJ; Chapter 22

Reading: DC; Chapter 1,

Reading: DC; **5th edition**, Chapter 16, (**6th edition** Chapters 15-16.)

C-tools: Value judgment

C-tools: Who manages risk?

C-tools: Commodity traders do better than believed. Only three-fourths lose money.

C-tools: Sluggish Wall Street is rushing into derivatives.

C-tools: Are slam dunks on troubled stocks a foul

Monday, September 12

Introduction to Call Options continued

Wednesday, September 14

Applications of Options

Reading DC: Chapter 2.

C-tools: The Bandwagon Starts to Roll

C-tools: The Forward March

C-tools: Fisher Black: How we came up with the formula

C-tools: Fisher Black: Fact and Fantasy in the Use of Options

C-tools: Informational Content of Options Trading Prior to Takeovers

Monday, September 19

Put-Call Parity

Wednesday, September 21

Option Pricing: Binomial Option Pricing Model

Using the Binomial Option Pricing Model
Reading DC: Chapters 3, 4, 5, 6, and 7.

Monday, September 26

Reading: BM, Chapter 21; RWJ, Chapter 23

Using the Binomial Option Pricing Model, continued

Wednesday, September 28

Reading: BM, Chapter 21; RWJ, Chapter 23

Black and Scholes Option pricing Model

Modifying the Black-Scholes Option Pricing Model for Alternative Underlying Instruments

Real options, employment options

C-tools: Use CBOE's free options calculator

C-tools: Why options traders focus on volatility over price

C-tools: The letter box

C-tools: Adapting the Binomial Model to Value other options

C-tools: Real options and exploiting uncertainty

C-tools: An options plan your CEO hates

Monday, October 3

Real options, employment options

Wednesday, October 5

Reading : BM; Chapter 26(6th edition) or Chapter 27 (7th edition)

RWJ Chapter 25

Reading: DC: Chapters 8, 9, 10 and 11.

Introduction to Futures and Forwards, concepts of delivery, short squeeze

Pricing of Futures and Forwards

Monday, October 10

Forwards and Futures on income producing assets

Risk management with futures, hedging techniques.

Wednesday, October 12

Forwards and Futures on income producing assets

Risk management with futures, hedging techniques.

Monday, October 17

Cross-hedging techniques.

Final exam will be given in class during our class time on October 20. Be sure to arrange your

travel and/or interview schedules not to conflict with the final exam.