

Math 411 Theory of Risk Spring 2010

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Course materials can be reached via my web page: www.plu.edu/~stuartjl/ .

MWF 9:15 – 10:20 Morkin Center Room 137.

Office Hours: Mon 4:00--5:30, Weds 12:30--1:30, Thurs 2:00-3:00, Fri 12:30--1:30. I am also available MWF at chapel time, and throughout the week, when not in class or at committee meetings, for brief appointments -- phone or email me.

Disclaimer: The content of this course does not provide adequate preparation to actually trade financial instruments of any variety. The models discussed in this class do not capture all aspects of market behavior, even for “risk-free” investments. Be aware that even when the models perform well on past market data, there is no guarantee that they will correctly forecast future market behavior. Prior to engaging in market transactions of any sort, you need further preparation concerning market regulations, margin requirements, transaction fees, and any risks specific to your particular trades. In addition, you need to understand the consequences of experiencing market losses should your trade or trades perform in an undesired manner.

Textbook: *Investment Science*, David Luenberger, Oxford, New York, 1998

Material: Chapters 1 – 11 with some sections omitted.

In this course, we will use tools such as the time value of money and probability theory to develop the concept of no arbitrage pricing for the valuation of financial instruments with a pay-off in the future. In particular, we will investigate the use and pricing of futures and basic put and call options. With respect to use, we will learn how futures and options are used for hedging and speculation, and how futures and options add liquidity to financial markets

Prerequisites and Course Requirements: Enrollment in this class requires the satisfaction of all official prerequisites or the permission of the instructor. You are expected to regularly READ the textbook carefully and thoroughly, to THINK rather than merely compute, and to WRITE OUT THOUGHTFUL EXPLANATIONS rather than merely report numerical answers. The contents of this course cannot be learned for you, so you must always maintain the attitude that you are the person most responsible for your education. In particular, your success depends on your diligent and timely attention to all of the homework, which includes carefully reading the text, reviewing your notes, studying for

exams, doing and assignments, memorizing basic facts and terminology, and using offices hours as needed. Plan to spend AT LEAST EIGHT HOURS PER WEEK on this course OUTSIDE OF LECTURES. If you do not commit the required time to this course, and if you do not carefully memorize the basic facts, formulae and rules, your chances of passing the course are low.

Grading: There will be regular homework assignments, exams (in-class or take-home) and a final exam. These will contribute toward the grade as follows.

Assignments	50%
2 Exams	30%
Final Exam	20%

Course grades will be determined using the following nominal grading scale:

A	90 – 100%
B	80 – 89%
C	70 – 79%
C-	65 – 69%
D	50 – 64%
E	Below 50%

Assignments: There will be regular assignments. The assignments need NOT be typed, but they must be legible, and written in coherent English. The assignments will often involve difficult problems that will require both sustained effort and a period of reflection. The homework may involve material not covered in the lectures. You are encouraged to discuss the homework with your classmates and with the instructor during office hours or via e-mail. You are requested not to ask for assistance on the homework from other faculty members. If you work with other students please be sure that you are not merely copying their work. If the instructor sees work on several papers that he determines is copied from a single source, he will reduce the scores on all of the offending papers. The more of the work that you do for yourself, the more that you will gain from this course.

Some of the homework assignments might involve the use of the computer software package such as MINITAB, MATLAB or EXCEL, which are on the machines in the Morkin Center. You will be given instructions on how to use this software, I do NOT expect that you already know how to use it. If you do not have access to the university computer system and if you do not have access to appropriate software on some other system, you need to discuss this as soon as possible with the instructor.

Remember: **If you can't explain it, you don't understand it.** When writing out explanations, proofs and solutions, do not write for the instructor; write for a classmate who needs help understanding the material. What you write is all that the instructor will see, so write what you mean and be complete.

Late Assignments: Assignments are to be ready at the start of class on the date that they are due. I realize that you have a life that includes more than this one class, and that at times other matters will take priority over the completion of your work in this course. While I do accept late homework, unless excused in advance, **late homework will lose 10% of the possible points for each "day" that it is late.** An assignment becomes one day late if it is not ready to be turned in at the time that it is collected. It remains one day late until the start of the next class meeting, when it becomes two days late if it has not been turned in.

Exams: Any in-class exams and the final exam will be closed book exams, taken without notes of any kind. All of the exams will involve both computation and explanation (definitions, proofs, justifications). You will be expected to memorize and understand the definitions, key examples, algorithms, theorems and explanations emphasized by the instructor. The exam dates will be announced at least two full weeks in advance. Be aware that there may be an extra credit, in-class or take-home exam supplement on the class day following an exam. There will be no opportunity to make up missed extra credit, in-class work, and there will be no extensions or late days on take-home work.

If you miss an exam for legitimate reasons (as determined by the instructor), some accommodation will be made. At the discretion of the instructor, this might consist of a written or oral make-up exam, or an adjustment based on the final examination.

The final exam for this course may be comprehensive, and will be held on the regularly scheduled final exam date as printed in the catalog.

Attendance: Attendance in class is required by the instructor. If your financial aid is contingent on attending this course, your attendance may be reported to the appropriate administrators. If you chronically miss class, arrive late and/or leave early, or fail to be an active participant in class, then you must expect that to be a consideration in assessing the validity of excuses for missed exams, and in assigning your course grade if you are on the borderline. Roll can be taken whenever the instructor chooses to do so.

Each student is responsible for immediately notifying the instructor of any condition that might impair his or her academic performance. Without timely notice, such difficulties cannot be used later as a basis for requesting make-up exams or reconsideration of grades.

ADA: If you need course adaptations or accommodations because of a disability, if you have emergency medical information to share with me, or if you need other special arrangements, please make an appointment with me as soon as possible. If you have questions concerning the services available for students with disabilities at PLU please contact Alene Klein, in Counseling and Testing,

located in Ramstad 106 or call x7602. It is important to me that we work together to maximize your learning opportunities in this course.

Legalities: Cheating on exams and plagiarism on homework will not be tolerated. Any incidences will be dealt with by assigning a zero to the corresponding exam or homework assignment. Egregious cases may result in dismissal from the course with a failing grade. Also, the departmental chair and the appropriate deans will be notified.

Discourteous and/or disrespectful behavior towards the instructor and/or your classmates will not be tolerated. If your behavior prompts repeated warnings, the appropriate university administrators will be notified, and efforts will be undertaken to dismiss you from the course with a failing grade.

If you bring a cell phone to class or an exam, it must stay in your pocket, your purse or a book bag; alternatively, you may ask me to retain it for you. If I see you handling your cell phone during an exam, I will immediately collect your exam, and you will be given no further time to complete the exam. Texting or surfing during an exam is strictly forbidden; texting or surfing during lectures is strongly discouraged.

Weather Related Closures: In the event that the university administration decides to cancel classes due to extreme weather situations, closure information may be obtained from the Campus Closure Hotline (535-7100) as well as from local TV and radio stations. Students are urged to use caution and personal discretion to avoid undue risk when making travel decisions during extreme weather.

This course syllabus and any schedules of lecture topics provide only a general plan for the course; deviations may be necessary. The instructor reserves the right to make any changes he deems necessary.