

BEPP 305 / 805

Risk Management

Spring 2018

- Lectures** *Section 401:* Monday & Wednesday 1:30-2:50 (SHDH 1203).
Section 402: Monday & Wednesday 3:00-4:20 (SHDH 1203).
- Instructor** Deniz Selman (denizs@econ.upenn.edu)
Office Hours: Monday 4:30-5:30 and by appointment (SHDH 3008).
- TAs** Emily Fisher (emfi@wharton.upenn.edu), *Office Hours:* TBA.
Matthew Goodman (goodma@wharton.upenn.edu), *Office Hours:* TBA.
- Grader** Zahra Mohammadi (zahram@sas.upenn.edu).
- Overview** The last financial crisis and subsequent recession provide ample evidence that failure to properly manage risk can result in disaster. Individuals and firms confront risk in nearly all decisions they make. People face uncertainty in their choice of careers, their spending and saving decisions, family choices, and many other facets of life. Similarly, the value that firms create by designing and marketing good products is at risk from a variety of sources. The bankruptcy of a key supplier, a sharp rise in the cost of financing, the destruction of an important asset, the impact of global warming, or a liability suit can quickly squander the value created by firms. In extreme cases, risky outcomes can bankrupt a firm, as has happened recently to manufacturers of automobile parts and a variety of financial service firms. The events since the Global Financial Crisis also offer stark reminders that risk can impose significant costs on individuals, firms, governments, and society as a whole. This course explores how individuals and firms assess and evaluate risk, examines the tools available to successfully manage risk, and discusses real-world phenomena that limit the desired amount of risk-sharing. Our focus is primarily on explaining the products and institutions that will serve you better when making decisions in your future careers and lives. The first half of the course introduces the concept of risk, explores different measures of risk, presents the theory of optimal decision-making under uncertainty, and illustrates how asymmetric information and psychological considerations affect risk management. The second half touches on behavioral models, and then goes on to examine when firms do and do not have a motivation to manage risk. We also investigate the role of the legal system in corporate risk management.
- Participation** It is important that you come to class prepared to participate. Looking over the slides and doing the readings is not a substitute for attending and participating in class.
Course Electronic Device Policy: Experience has shown that use of the use of electronic devices during any class for non-educational purposes significantly disrupts learning for the students using the device and for others in the class. Accordingly, the following policies should be observed with penalties set by the instructor as deemed appropriate: Phones must be turned off and put away. If you must keep a phone on by reason of a personal emergency, please inform the instructor before class begins. The use of laptops and tablets is not allowed unless for educational purposes as permitted by the instructor.
- Prerequisites** There are no formal prerequisites for the class but students are assumed to have an introductory knowledge of statistics, microeconomics and finance, at the level of the Wharton undergraduate classes STAT 101, BEPP 250, and FNCE 100, respectively.
- Problem Sets** There will be four problem sets assigned and collected for grading during the semester. Problem sets will be posted on Canvas exactly one week prior to the due date and due at the beginning of lecture (no later than 5 minutes after class is scheduled to begin) on the day they are due. Each problem set will be due on the Monday before a Wednesday quiz, so the due dates are **29 January, 19 February, 26 March and 16 April** (all Mondays).
No late problem sets will be accepted. Working on problem sets diligently is the most effective way to prepare you for both exams and quizzes. I recommend you first work on your own and then meet to discuss the problems in groups. However, each student must turn in his or her own answers. Please write legibly and state which classmates you worked with on your submitted copy. Your lowest problem set grade will be dropped and the average of the other three problem sets will constitute the problem set portion of your grade.

Quizzes Four in-class quizzes, which will each last *at most* 20 minutes, will be held at the beginning of class on the following dates: **31 January, 21 February, 28 March and 18 April** (all Wednesdays).
NO MAKE-UP QUIZZES: *You will receive a zero for any quiz that you miss for any reason.* To accommodate students who must miss a quiz, your lowest quiz grade will be dropped and the average of the other three quizzes will constitute the quiz portion of your grade.

Exams **First Exam: Wednesday 28 February (6:00pm, location TBA).**
Second Exam: Wednesday 25 April (6:00pm, location TBA).
The TAs will hold a Review Session on the Monday evening before each of the two exams. The time and location of the sessions will be announced. There will be no lecture held on the exam dates.
The Second Exam is not cumulative, meaning it will only cover material from after the First Exam. There will be no final exam.

MAKE-UP POLICY FOR EXAMS: Only students who contact me *before* an exam *and* have a University-approved excuse are eligible to take a make-up exam. Valid excuses include direct conflicts with another course offered at Penn that cannot be rescheduled or a varsity (but not club) sport competition (but not practice). Job interviews are not a valid excuse. Students who miss an exam and are not eligible for a make-up exam will receive a zero for the exam.

EXAM REGRADES: To submit a regrade request for an exam, you must submit a completed regrade form (posted to Canvas) within five business days after the graded examination has been returned. Your entire exam will then be reviewed, and your grade may go down, go up or remain unchanged.

OTHER POLICIES & PROCEDURES: Apart from all of the stated specifics above, this course complies with the University of Pennsylvania's Code of Academic Integrity. It is the policy of the Department of Business Economics and Public Policy to immediately fail any student who is to be in violation of the Code. Cheating, in any manner, will result in failing the course. In addition to the sanctions imposed by the Department of Business Economics and Public Policy, the Office of Student Conduct may impose additional sanctions. Please review the Code of Academic Integrity on the below link as well as example of violations and possible sanctions:

<http://provost.upenn.edu/policies/pennbook/2013/02/13/code-of-academic-integrity>

Grading Problem Sets (15%), Quizzes (21%), First Exam (32%), Second Exam (32%)

Course Topics *(subject to minor changes)*

Overview of Probability
Law of Large Numbers and Risk Pooling
Central Limit Theorem and Value at Risk
Expected Utility Theory
Precautionary Saving
Principal-Agent Relationships
Adverse Selection (Lemons Problem, Screening)
Reclassification Risk
Moral Hazard In Insurance Markets
Subjective Expected Utility and Ambiguity
Behavioral Economics
Corporate Risk Management and Firm Value
Corporate Legal Liability
Corporate Risk Management Strategies
Insurance Markets and Pension Reform