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University of Pennsylvania ⬧ The Wharton School
BEPP 305 / 805
Risk Management
Fall 2020

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Lectures	Monday & Wednesday 3:00-4:20 <mark>(add Zoom link here)</mark>.
Instructor	**Deniz Selman** (denizs@wharton.upenn.edu) *Office Hours*: <mark>To be announced (add Zoom link here)</mark>.
TA	**Tomer Mangoubi** (mangoubi@wharton.upenn.edu) *Office Hours*: <mark>To be announced (add Zoom link here)</mark>.

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.

Lectures   Lectures will be held ***synchronously*** via Zoom with the possibility of a few short videos that may be prerecorded. 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.

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 on the following dates: **Wed 23 September, Wed 14 October, Wed 11 November, Mon 7 December**.
No late problem sets will be accepted. Working on problem sets diligently is the most effective way to prepare you for the exams. 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.

Exams   **Exam 1: Wednesday 21 October (during class—exact format TBA).**
Exam 2: Thursday 10 December (during class—exact format TBA).
Tomer will hold an evening Review Session leading up to each of the two exams. The date and time of the sessions will be announced.
Exam 2 is not cumulative, meaning it will only cover material from after Exam 1. 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-ofacademic-integrity

Grading Participation (10%), Problem Sets (20%), Two Exams (35% each).

Course Topics *(subject to minor changes)*

Overview of Probability
Value at Risk
Law of Large Numbers
Risk Pooling and Central Limit Theorem
Expected Utility Theory
Precautionary Saving
Subjective Beliefs
Adverse Selection: The Lemons Problem
Moral Hazard: The Principal-Agent Problem
Moral Hazard In Insurance Markets
Subjective Expected Utility and Ambiguity
Behavioral Economics
Corporate Risk Management and Firm Value
Corporate Risk Management Strategies