

Finance 341 SYLLABUS
Foundations of Risk Management and Insurance
University of South Carolina
Spring 2019

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Required Texts:

Principles of Risk Management and Insurance by G. Rejda and M. McNamara, 13th Edition, available as both a hardcopy (ISBN-13: 978-0-13-408257-8 and e-text (ISBN-13: 978-0-13-408344-5).

Foundations of Risk Management & Insurance (Custom Text), McGraw-Hill. Available as e-text only (ISBN-13: 9781307111712 or ISBN-10: 1307111718). You can purchase this e-text via the USC bookstore or at: <https://create.mheducation.com/shop/>

Overview

Finance 341 is the foundational course in risk management and insurance. The objective of this course is to provide students with a broad framework for evaluating all types of risk, along with conceptual tools for making risk management decisions rationally and consistently. It is intended for business students from all disciplines, including those who intend to take only one course in risk management and insurance. The course also serves as the introductory course for students wishing to pursue further studies in the field. The course focuses on the economics and science of risk and risk assessment and decision-making under uncertainty, and the methods for managing risk, including enterprise risk management (ERM). We analyze risk transfer markets in some detail, including issues of moral hazard, adverse selection, insurance pricing and the regulation of insurance markets. We will examine property and liability risks, morbidity/mortality/longevity risks common in life/health insurance markets as well as the increasing role capital markets in the transfer of risk. We also explore the rapidly changing landscape and the future of risk and risk management around the globe, from record natural disasters to cyber risks and drones to driverless vehicles, the “Sharing Economy” and the Internet of Things. The concept of systemic risk, its role in the global financial crisis and ensuing impact on financial market regulation will also be examined.

In addition to learning about risk, students should find themselves challenged. The broader aim is to strengthen critical thinking ability, and grow problem solving and decision making skills.

Class Schedule: TuTh: 8:30AM – 9:45AM (Section 1) in DMSB 127/128
 TuTh: 11:40AM – 12:55PM (Section 2) in HUMCB 201

Office Hours: Tuesdays and Thursdays: 10:00AM – 11:15AM or by appointment

Expectations

Students should expect to spend a considerable amount of time outside of class reading the required materials, working on problems, and studying for quizzes and exams. Expect to spend 6-9 hours outside of class each week. My strong recommendation is to avoid getting behind as we will move through a considerable amount of material fairly quickly. I encourage questions in class and outside of class. I also expect students to read and pay attention to news coverage of major issues related to risk, risk management and insurance being discussed in the media during the course of the semester. The media report on many such issues literally every day. I will frequently refer to current, real world situations to help illustrate points made in class and make what you are learning immediately applicable to this course and your major here at USC—no matter what that might be. Demonstrating knowledge of current events is a great way to do well on the class participation component of your grade. It also a great way to help prepare yourself for job and internships interviews. Do not settle for mediocrity.

Grading

Research Paper (Due Wed., Apr. 24 by 3PM)	20%
1 st Exam (Thurs., Feb. 21)	25%
2 nd Exam (Thurs., Mar. 28)	25%
Final Exam (Sect. 1: May 7, 9 – 11AM) (Sect 2: May 7, 12:30 – 2:30PM)	30%

Exams are cumulative in the sense that new material builds upon material covered earlier in the course. Exam emphasis will be placed on material covered since the last exam. Review sessions outside of the normal class will be held prior to exams.

All exams are graded on a scale of 100 points. The writing assignment is graded on a letter scale. You will receive the highest numeric grade corresponding to that letter grade. Late assignments will suffer a 10% penalty per day. All assignments will be graded on content and writing. Poorly written/illegible assignments will be returned and you will be required to rewrite.

Classroom Expectations

To encourage you to contribute to class, your grade depends, in part, on my subjective assessment of your contribution to class over the semester. You can positively impact that grade by contributing to class in a positive manner. You can decrease that grade by detracting from class. Arriving late for class or leaving in the middle of class disrupts other students; this behavior therefore will lower your contribution to class grade. Consistently missing class, by definition, will lower your contribution to class grade. Cell phones must be turned off in class, and texting is strictly prohibited. Failure to comply will negatively impact your class grade.

Grade Scale

If you achieve an overall percentage in the ranges below, you will receive at worst the letter grade associated with that range. It is possible that grades will be curved at the end of the semester, so that some scores in a particular range will obtain a letter grade associated with a higher range. For example, it is possible that a 78 overall average could result in a B grade.

90-100	A
87-89	B+
80-86	B
77-79	C+
70-76	C
60-69	D
< 60	F

Student Learning Objectives and Outcomes

By the end of this course, students will:

1. Understand various interpretations of risk
2. Be able to calculate various measures of risk
3. Know the risk management process and the various methods that are used to manage risk
4. Be able to explain the meaning of an enterprise risk management approach and its advantages and disadvantages
5. Understand how risk can be diversified away and the factors that influence the extent to which risk can be diversified
6. Understand how moral hazard, adverse selection, correlated losses, and transaction costs impact the extent to which risk can be traded
7. Be able to explain and calculate “fair” insurance premiums
8. Understand how insurance markets are regulated and how that regulation is evolving
9. Understand the payoffs on different types of derivative contracts
10. Apply general concepts to specific types of risk, including longevity risk, natural catastrophe risks and emerging technology risks (e.g., cyber risks)
11. Perform a cost-benefit analysis of hypothetical risk mitigation expenditures
12. Understand systemic risk and its role in the financial crisis.

Note about Numerical Examples in Class and Homework Problems

We will frequently use numerical examples in class and you will be required you to work through numerical problems on quizzes and exams. DO NOT view these examples just as simple math problems (which they are). The examples usually are designed to illustrate a conceptual point. After working through a numerical example, step back and ask whether there was a conceptual point that the problem illustrated. In other words, ask yourself what basic problem this exercise addresses or solves.

University of South Carolina Honor Code

It is the responsibility of every student at the University of South Carolina Columbia to adhere steadfastly to truthfulness and to avoid dishonesty, fraud, or deceit of any type in connection with any academic program. Any student who violates this Honor Code or who knowingly assists another to violate this Honor Code shall be subject to discipline.

This Honor Code is intended to prohibit all forms of academic dishonesty and should be interpreted broadly to carry out that purpose. The following examples illustrate conduct that violates this Honor Code, but this list is not intended to be an exhaustive compilation of conduct prohibited by the Honor Code:

1. Giving or receiving unauthorized assistance, or attempting to give or receive such assistance, in connection with the performance of any academic work.
2. Unauthorized use of materials or information of any type or the unauthorized use of any electronic or mechanical device in connection with the completion of any academic work.
3. Access to the contents of any test or examination or the purchase, sale, or theft of any test or examination prior to its administration.
4. Use of another person's work or ideas without proper acknowledgment of source.
5. Intentional misrepresentation by word or action of any situation of fact, or intentional omission of material fact, so as to mislead any person in connection with any academic work (including, without limitation, the scheduling, completion, performance, or submission of any such work).
6. Offering or giving any favor or thing of value for the purpose of influencing improperly a grade or other evaluation of a student in an academic program.
7. Conduct intended to interfere with an instructor's ability to evaluate accurately a student's competency or performance in an academic program.

Whenever a student is uncertain as to whether conduct would violate this Honor Code, it is the responsibility of the student to seek clarification from the appropriate faculty member or instructor of record prior to engaging in such conduct.

Suspected violations of the honor code will be reported to the Office of Academic Integrity. Violations of the honor code will result in disciplinary measures.

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Course Outline

(Required readings are in parentheses)

What is Risk & Risk Management (Rejda: Ch. 1 – 4)

- What is risk?
- The risk management process
- Enterprise risk management
- Objectives of risk management

Review of Probability Theory (Custom Text: Ch. 3)

- Probability distributions
- Expected value
- Variance, standard deviation, skewness, percentile values
- Value at risk
- Correlation

Pooling Arrangements & Diversification of Risk (Custom Text: Ch. 4)

- Impact of pooling on expected losses
- Impact of pooling on variability of losses
- Correlation and pooling arrangements

Insurance Companies: Their Organization, Management and Regulation (Rejda: Ch. 5 – 8)

- Mutual versus stock companies
- Distribution of insurance
- Insurer management of insolvency risk
 - Capital
 - Reinsurance and Insurance Linked Securities
 - Asset management
- History and Rationale for Insurance Regulation
- Risk-based capital and other solvency metrics

Insurance Pricing (Custom Text: Ch. 8)

Determinants of fair premiums
 Expected claims costs
 Administrative costs
 Capital costs
 Time value of money
Risk classification
Adverse selection
Underwriting cycles
Regulation
Residual markets
Metrics used to assess performance
 Loss ratio, expense ratio, combined ratio
Applications to Personal Auto Insurance

Legal Doctrines and Contract Provision in Insurance (Rejda: Ch. 9 – 10)

Moral hazard
Deductibles
Coinsurance
Policy limits
Exclusions
Indemnity principle
Subrogation

Property and Liability Risks (Rejda: Ch. 19 – 26)

Personal property and liability risks
 • Auto insurance
 • Home insurance
Commercial (Business) property and liability risks

Life Insurance (Rejda: Ch. 11, 12, 14 (annuity sections only))

Types and purpose of life insurance
Life insurance, disability and retirement products

Health Insurance (Rejda Ch. 15 plus supplemental assigned readings)

Health insurance products and markets
Affordable Care Act (“Obamacare”) including recent changes to the ACA
Social insurance programs
Healthcare reform

Applications to Specific Risk Exposures (Examples to be discussed throughout the semester)

Natural Catastrophe Risk

- Reinsurance vs. Catastrophe Bonds
- Catastrophe Models

Flood Insurance

- National Flood Insurance Program

Terrorism and Geopolitical Risk

- Terrorism Risk Insurance Program
- Political Risk Exposures/Coverages
- Active Shooter/Active Assailant Coverage

Emerging Technology Risks

- Cyber Risk
- Autonomous (Driverless) Vehicles
- Supply Chain Risk
- The Sharing Economy
- Internet of Things
- InsurTech
- Genetic Testing in Life/Health Insurance