Required Texts

- Foundations of Risk & Insurance (Custom Text)
  McGraw Hill, 2015

- Decision Traps: The Ten Barriers to Brilliant Decision-Making
  J. Edward Russo and Paul J.H. Schoemaker
  Simon and Schuster, 1990

Instructor

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Office Hours

- Tuesday: 3:00 - 4:30 PM
- Thursday: 3:00 - 4:30 PM

Course Description

This is the foundational course in risk management and insurance. The objective 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.

The course is structured to serve as core element of business literacy. 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 of risk, decision-making under uncertainty, and the methods for managing risk. It examines risk transfer markets, including both insurance markets and derivative markets.

The course opens with an exploration of the various meanings of risk, before settling on a twofold definition. The broad distinction between pure and speculative risk is introduced. The overlap between these categories is explored, and different methods of classifying risk are discussed.

Risk management is introduced as a rational method for identifying and treating risk all types of risk. Within this framework, we establish that the overall objective of risk management is to minimize the cost of risk.

As the course unfolds, students learn practical techniques for identifying, classifying and managing risk. They apply concepts from finance, probability and statistics to measure risk and to make better risk decisions. The student is also introduced to public policy issues involving risk. The goal is to build an appreciation of the difficult trade-offs that are required to resolve these issues.

The study of risk is a powerful example of how humans develop language, tools and concepts to manage a complex world. 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.

Course Objectives

The goals of the course are to:

1. Discover the behavioral biases that impact risk decisions. Build awareness of the pervasiveness of biases in our thinking. Illustrate the distorting influence of bias though case examples. Learn and apply methods to counteract the influence of biases and improve the quality of our decision-making.
2. Define and explain the meaning of risk. Distinguish between pure, speculative risk and other kinds of risk.

3. Introduce the risk management methodology. Learn how to identify, analyze and evaluate various kinds of risks faced by business firms and individuals.

4. Apply the risk management process to select among the alternative techniques for treating these risks.

5. Become familiar with the unique language of risk and insurance. Develop an understanding of the common characteristics of insurance contracts. Learn the institutional features of the insurance industry.

6. Integrate and apply knowledge from other business courses to solve risk management problems.

7. Help students become more knowledgeable and efficient consumers of both personal and business insurance.

**Student Learning Outcomes**

By the end of this course, students will be able to:

1. Understand various interpretations of risk
2. Calculate various measures of risk
3. Know the risk management process and the various methods that are used to manage risk
4. Understand the behavioral biases that impact individuals’ risk decisions
5. Understand how risk can be diversified away and the factors that influence the extent to which risk can be diversified
6. Know the types of insurance company ownership; understand the role of insurer capital and the factors affecting insurer capital decisions; explain how insurers reduce insolvency risk through underwriting diversification, reinsurance and investment choices.
7. Understand how moral hazard, adverse selection, correlated losses, and transaction costs impact the extent to which risk can be traded
8. Explain and calculate “fair” insurance premiums
9. Apply cost-benefit analysis to risk mitigation decisions
10. Understand the sources, variety and potential magnitude of legal liability, particularly for injury and property damage to the others
11. Understand insurability of risk, standard insurance contractual provisions and the fundamental legal doctrines underlying insurance contracts.
12. Understand the risk arising from the ownership and use of automobiles; learn major features of the personal auto policy: apply insurance pricing principles to the auto insurance rating and underwriting; explain the factors leading to residual markets, compulsory auto insurance and no-fault insurance
13. Understand risks arising from the ownership, use or rental of one’s home. Learn the major features of the Homeowners 3 policy; understand the insurance arrangements for high risk/catastrophic perils.
14. Explain systemic risk
15. Understand the payoffs on different types of derivative contracts
16. Select a derivative contract that would hedge a particular risk.

**Grading Requirements**

The course grade will be based on four components, consisting two exams given during the semester, the final exam. The weighting of the components is as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Quizzes</td>
<td>25%</td>
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<tr>
<td>Exam 1</td>
<td>25%</td>
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<td>Exam 2</td>
<td>25%</td>
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<tr>
<td>Final exam</td>
<td>25%</td>
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<tr>
<td>Total</td>
<td>100%</td>
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**Quizzes**
Quizzes will be given every Tuesday at the start of class, except the two weeks when an exam is scheduled during the semester. The overall grade assigned to quizzes will the average score of all the quizzes. The lowest quiz score will be counted.

**No make-up quizzes will be given in this course.**

**Exams**
There will be three exams in the course. Each exam will cover roughly one third of the course material. However, the final exam will be cumulative. The exam questions will cover the assigned chapters in the text, as well any background material covered in class and posted to Blackboard.

**No make-up exams will be given in this course.**

**Class Participation**
Class participation will not be a separate grade component. Rather, I will consider class participation as part of the final grade evaluation. I expect you to have read the material assigned for the class, prior to entering the classroom. Thus prepared, I assume you are ready to apply your knowledge to questions and issues that arise during the class discussion.

At the end of the semester, I will make an overall assessment of each student’s participation, using the following scale:

- -3: In class but sleeping, or reading the paper, texting, using electronics, surfing the internet, doing assignments for other classes, etc.
- -2: Absent from class
- -1: In class, but showed lack of preparation in response to questions
- 0: In class, but did not participate
- 1: In class and participated effectively
- 2: In class and added significant insight

Extra weight will be assigned to students who responded to questions with answers which reflected understanding of the material and to students who shared insight which advanced class discussion.

Students with a high class participation score may be eligible for an upward movement in their final grade of one half-grade level. The boundary for this type of consideration will be the point difference between the student’s aggregate grade and the next half-grade level. To be eligible, this difference can be no greater than 1.5 points.

To illustrate, a student whose composite grade average is 88.5 might be moved from B+ to A. This example is strictly by way of illustration. Any upward adjustment based on class participation remains the discretionary judgment of the instructor.

**Class Attendance**
Students are expected to attend all class sessions. Students who have more than 10% absences, whether excused or unexcused, are subject to at least a full letter grade deduction in their final course grade (that is, from an A to a B or B to C, etc.).

**Practice Homework Assignments**
Practice Homework assignments will provided to help students learn the material. The homework will not be graded. Students will evaluate their own answers to the homework. To assist students in this evaluation, I will post an answer key for each practice homework on Blackboard on the day following the due date shown for the homework assignment.
Grade Scale

If you achieve an overall percentage in the ranges below, you will receive the letter grade associated with that range.

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

Student Responsibilities

Consistent with the standards jointly developed and approved by the Student Leadership Council and the faculty of the Darla Moore School of Business, students are expected to:

- spend a minimum of two hours outside of class studying for each hour of classroom time;
- exhibit classroom behavior that is respectful to faculty and fellow students;
- refrain from the use of phones and other electronic equipment during class, unless permitted by the instructor;
- arrive at class on time, actively participate in class, and not leave class early;
- keep up with assigned readings and complete assignments on time;
- contribute fully to team assignments;
- respect the university’s staff and be responsible stewards of its facilities; and
- abide by the University of South Carolina Honor Code

University of South Carolina Honor Code

1. 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.
2. 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:
3. Giving or receiving unauthorized assistance, or attempting to give or receive such assistance, in connection with the performance of any academic work.
4. 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.
5. Access to the contents of any test or examination or the purchase, sale, or theft of any test or examination prior to its administration.
6. Use of another person’s work or ideas without proper acknowledgment of source.
7. 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).
8. 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.
9. 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.
The following course outline is ambitious. It is intended to be challenging. The schedule is subject to change at the instructor’s discretion. Students will be given prior notice. Abbreviation is defined as follows: CT = Custom Text

Class Overview; How Biases Impact Decision-Making; Risk and Risk Management (CT, ch. 1, 2)
Discuss biases impacting decision-making and methods to counteract their influence
Discuss different meanings of risk
Define risk in terms of two meanings
Identify the major types of business and personal risk
Compare pure risk to other types of risk
Introduce the risk management process and the major risk management methods

Objective of risk management (CT, ch. 3; Decision Traps, ch.1)
Define and explain the overall objective of risk management
Explain and understand the cost of risk concept
Explain how minimizing the cost of risk maximizes business value
Understand the possible conflicts between business and societal objectives
An Excellent Decision Making Process

Risk Identification & Risk Measurement; (CT ch. 4, Decision Traps, ch.2)
Introduce framework for identifying business and individual risk
Review basic concepts from probability and statistics
Review expected value, variance and standard deviation and practice calculations
Discuss normal distribution characteristic, skewness, percentile values
Explain value at risk and maximum probable loss
Correlation between random variables
Probability distributions for sums of random variables
Decision Framing

Pooling Arrangements & Diversification of Risk (CT ch.5)
Impact of pooling on expected losses
Impact of pooling on variability of losses
Correlation and pooling arrangements
Correlation between random variables
Probability distributions for sums of random variables

Insurer Ownership, Financial and Operational Structure (CT, ch. 6; Decision Traps, ch.3)
Mutual versus stock companies
Distribution of insurance
Insurer management of insolvency risk
Capital
Reinsurance
Asset management
Winning Frames

Insurance Pricing (CT, ch. 7, Decision Traps, ch.4)
Determinants of fair premiums
Risk classification
Adverse selection
Regulation and Residual markets
Metrics used to assess performance
Solvency measures
Knowing What You Don’t Know
Insurability of Risk, Contractual Provisions & Legal Doctrines (CT, ch. 8; Decision Traps, ch.5)
- Moral hazard
- Deductibles, Coinsurance, Policy limits
- Exclusions
- Indemnity principle
- Subrogation
- Improving your intelligence-gathering

Loss Control (CT, ch.10; Decision Traps, ch.6)
- Loss control
- Overview
- Various types
- Optimal amount of loss control using cost/benefit analysis
- Rationale for government safety programs
- Value of life calculations
- Making the Choice

Legal Liability for Injuries (CT ch. 10; Decision Traps, ch.7)
- Basic tort legal liability rules
- Gradations of liability (No liability, negligence, strict, absolute)
- Damages
- Joint and several liability
- Elements of negligence
- Economic objectives of the tort liability system
- Limited wealth and limited liability
- Tort liability and safety regulation
- Proposals for tort reform
- Group Decisions

Automobile Insurance, Part 1 (CT, ch. 11; ISO Personal Auto Policy)
- Overview of Auto Loss Exposures
- Personal Auto Policy (PAP)
- Liability coverage (split limits vs. combined single limit)
- Medical payments coverage
- Uninsured motorists’ coverage
- Damage to your auto

Automobile Insurance, Part 2 (CT, ch. 11; ISO Personal Auto Policy)
- Auto Insurance pricing and selection
- Rating factors
- Underwriting
- Residual markets
- Compulsory auto insurance – types, pros and cons
- No-fault auto insurance – types, pros and cons

Homeowners Insurance (Custom Text, ch. 12, ISO Homeowners 3 Policy; Decision Traps, ch.8)
- Types of Policies
- Description of Major Coverages
- Property Loss Settlement
- Pricing of Homeowners Policies
- Impact of Catastrophes on Property Insurance
- Why People Fail to Learn
Commercial Insurance Contracts (Custom Text, ch. 13)
- Major types of property & casualty business insurance contracts
- Introduction to Exposure Diagrams
- Deductibles and self-insured retentions
- Policy limits, primary coverage, excess coverage and umbrella liability coverage
- Key provisions – business property coverage
- Key provisions – general liability coverage, Occurrence versus claims made coverage

Hedging with Derivatives (H&N, ch. 14; Decision Traps, ch.9)
- Introduction to Derivatives and Hedging
- Basic Derivative Contracts (Options, Forwards, Futures and Swaps)
- Comparison: Insurance Contracts and Derivative Contracts
- Major types of risks typically hedged using derivatives
- Improving Feedback
The following course schedule is subject to change at the instructor’s discretion. Students will be given prior notice.

<table>
<thead>
<tr>
<th>DATE</th>
<th>KEY TOPICS /QUIZZES/EXAMS</th>
<th>READINGS/HOMEWORK</th>
</tr>
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<tbody>
<tr>
<td>January 10</td>
<td>Before You Make That Big Decision</td>
<td>Custom Text, chapters 1, 2</td>
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<tr>
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<td>Overview of Risk and Risk Management</td>
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<td>January 12</td>
<td>The objective of risk management</td>
<td>Custom Text, chapter 3</td>
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<td>Excellent decision making process</td>
<td>Decision Traps, chapter 1</td>
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<td>January 17</td>
<td>Risk Identification, Risk Measurement and Review of Probability Theory, part 1</td>
<td>Custom Text, chapter 4</td>
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<td>Practice HW 1 Due Date</td>
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<td>Quiz 1; Risk Identification, Risk Measurement and Review of Probability Theory, part 2</td>
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<td>Basic Probability Power Point (cont.)</td>
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<td>January 24</td>
<td>Pooling Arrangements &amp; Diversification of Risk</td>
<td>Custom Text, chapter 5</td>
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<td>Decision Traps, chapter 2</td>
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<td>January 26</td>
<td>Insurer Ownership, Financial and Operational Structure, part 1;</td>
<td>Custom Text, chapter 6</td>
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<td>January 31</td>
<td>Insurer Ownership, Financial and Operational Structure, part 2; Creating Excellent Decision Frames</td>
<td>Custom Text, chapter 6 (cont.)</td>
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<td>Decision Traps, chapter 3</td>
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<td>Quiz 2; Insurance Pricing, part 1</td>
<td>Custom Text, chapter 7</td>
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<td>Insurance Pricing, part 2</td>
<td>Custom Text, chapter 7 (cont.)</td>
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<td>February 14</td>
<td>Insurability of Risk, Contractual Provisions &amp; Legal Doctrines, Part 1</td>
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<td>February 16</td>
<td>Insurability of Risk, Contractual Provisions &amp; Legal Doctrines, Part 2; Knowing What You Don’t Know</td>
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<td>February 21</td>
<td>Loss Control, part 1</td>
<td>Custom Text, chapter 9</td>
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<td>Quiz 3; Loss Control, part 2</td>
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<td>February 28</td>
<td>Legal Liability for Injuries, part 1</td>
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<td>ISO Personal Auto Policy</td>
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<td>March 21</td>
<td>Automobile Insurance, part 3</td>
<td>Custom Text, chapter 11 (cont.)</td>
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<td>DATE</td>
<td>KEY TOPICS /QUIZZES/EXAMS</td>
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<td>Homeowners Insurance, part 2</td>
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<td>Group Decisions</td>
<td>ISO Homeowners 3 Policy (cont.)</td>
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<td>Decision Traps, Chapter 7</td>
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<td>Commercial Insurance Contracts, part 1</td>
<td>Custom Text, chapter 13</td>
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<td>April 6</td>
<td>Quiz 5; Commercial Insurance Contracts, part 2</td>
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<td>Why People Fail to Learn</td>
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<td>April 11</td>
<td>Hedging with Derivatives</td>
<td>Custom Text, chapter 14</td>
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<td>April 13</td>
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<td>Improving Feedback</td>
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<td>April 20</td>
<td>Class Summary and Review</td>
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