# Finance 341 – Sections 001 & 002  
## Foundations of Risk and Insurance  
## Fall Semester 2015 – Krempley

**Required Texts**  
- Foundations of Risk & Insurance (Custom Text)  
  McGraw Hill, 2015  
  - Winning Decisions: Getting It Right the First Time  
  J. Edward Russo and Paul J.H. Schoemaker  
  Crown Business, 2001

**Instructor**  
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**Office Hours**  
Monday 2:30-4:00 PM  
Wednesday: 230-4:00 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. Describe the behavioral biases that impact risk decisions. Raise awareness of the pervasiveness of biases in our thinking. Illustrate the distorting influence of bias though case examples. Learn 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. Apply the risk management process to select among the alternative techniques for treating these risks.

4. 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.

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

6. 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. Explain systemic risk
14. Understand the payoffs on different types of derivative contracts
15. Select a derivative contract that would hedge a particular risk.

**Grading Requirements**

Grading will be based on five requirements:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Homework Assignments</td>
<td>25%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>25%</td>
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<tr>
<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>
</tr>
</tbody>
</table>

Homework questions will include problems, short narrative responses and financial and statistical calculations. Late assignments will suffer a 10% penalty per day. All homework assignments will be graded on content and writing. **Assignments must be typewritten.** Poorly written or handwritten assignments will be returned and the student will be required to rewrite.

There will be three examinations in the course. Each exam will cover roughly one third of the course material. The exams 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.

**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 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

Use of Electronics

Students are not allowed to use any electronics in the classroom unless for an activity specifically sanctioned by the professor. Students who use phones, computers, and other devices in an unsanctioned manner (such as surfing the internet or sending text messages) are subject to a grade penalty (up to 10% of the total points available in the class).

Course Outline
(Readings are listed in parenthesis)

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.

Abbreviations are defined as follows: CT = Custom Text; R & S = Russo and Schoemaker

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; R & S, 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
Decision Traps Overview

Risk Identification & Risk Measurement; (CT ch. 4)
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

Pooling Arrangements & Diversification of Risk (CT)
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; R & S, ch.2)
   Decision Framing
   Mutual versus stock companies
   Distribution of insurance
   Insurer management of insolvency risk
      Capital
      Reinsurance
      Asset management

Insurance Pricing (CT, ch. 7, R & S, ch.3)
   Determinants of fair premiums
   Risk classification
   Adverse selection
   Regulation
   Residual markets
   Metrics used to assess performance
   Solvency measures
   Decision Framing (cont.)

Insurability of Risk, Contractual Provisions & Legal Doctrines (CT, ch. 8: R & S, ch.4)
   Moral hazard
   Deductibles, Coinsurance, Policy limits
   Exclusions
   Indemnity principle
   Subrogation
   Knowing What You Don’t Know

Loss Control (CT, ch.10; R & S, ch.5)
   Loss control
   Overview
   Various types
   Optimal amount of loss control using cost/benefit analysis
   Rationale for government safety programs
   Value of life calculations
   Improving your intelligence-gathering

Legal Liability for Injuries (CT ch. 10)
   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
Automobile Insurance (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
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; R & S, ch.6)

Types of Policies
Description of Major Coverages
Property Loss Settlement
Pricing of Homeowners Policies
Impact of Catastrophes on Property Insurance
Coming to Conclusions

Commercial Insurance Contracts (Custom Text, ch. 13; R & S, ch.6)

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
Learning from experience

Hedging with Derivatives (H&N, ch. 14)

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

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.