Course Objective:
Develop frameworks and tools for making business risk management decisions

Outline

- (Main book) indicates that the material is in the electronic book created for this course. See “Course Information.”

- (Prereq book) indicates material is from FINA341. The material from FINA341 that is used in this course is available in an electronic book through the Create website. See document “Course Information.”

- (BB) indicates item is or will be on Blackboard.

0. BACKGROUND ON PROBABILITY THEORY

Reading:  
Ch. 3 - Risk Identification and Measurement (Prereq book)
Ch. 4 – Pooling Arrangements (Prereq book)
New Appendix to Ch. 4 (BB)
Analyzing Uncertainty – Probability Distributions, pp 1-8 (Main Book)
Powerpoint slides: “basic probability theory – part 1 - 5” (BB)

Topics:

You will use the analytical concepts and tools listed below and covered in the readings throughout the semester. This material has been covered in several prerequisite courses, including FINA 341 and MGSC 291. The readings and powerpoint presentations above can help you enhance your understanding of this material. I will also provide study questions on this material. It is your responsibility to learn it, but I am available to help you.

Discrete and continuous random variables and probability distributions
Characteristics of probability distributions:
  - Expected value, standard deviation, variance, skewness, percentile values
The relationship between random variables
  - Covariance, correlation coefficients
Probability distributions for sums of random variables
The normal distribution and other probability distributions
1. **INTRODUCTION TO CORPORATE RISK MANAGEMENT**

**Reading:**
- Ch. 1 – Risk and its Management (Prereq book)
- Ch. 2 – Objective of Risk Management (Prereq book)
- Before you Make that Big Decision (Main book)

**Topics:**
- What is risk?
- The risk management process
- Objectives of corporate risk management
- Potential behavior biases that can impact risk management decisions
- Decision making with less-than-perfect information

2. **REVIEW OF BASIC VALUATION PRINCIPLES**

**Reading:**
- Review FINA 363 text

**Topics:**
- Discounted Cash Flow (DCF) Model
  - Expected Cash Flows
  - Cost of capital
- Impact of Risk on Value

3. **ESTIMATING THE PROBABILITY DISTRIBUTION OF CASH FLOWS**

**Topics:**
- Using historical data
- Simple models for Forecasting expected cash flows
  - Expected cash flow is constant over time
  - Expected cash flow follows a time trend
  - Expected cash flow depends on other variables
- Regression Analysis
- Forecasting the standard deviation of cash flow
- Forecasting the correlation between two variables

**Case Assignment 1:**
Teuer Furniture (A): Discounted Cash Flow Valuation (Main Book)
4. WHEN DOES REDUCING RISK INCREASE VALUE?

Reading: Ch. 20 – Risk Management and Shareholder Wealth (Main book)
        Ch. 21 – Tax, Regulatory, & Accounting Factors Affecting Corporate RM (Main book)
        Ch. 22 – Risk Retention/Reduction Decisions (Main book)

Topics:
- Effect of risk (expected loss) reduction on expected cash flows
- Effect of risk (variability) reduction on the cost of capital
- Effect of risk (variability) reduction on expected cash flows
- How Taxes can influence risk management decision

5. ENTERPRISE RISK MANAGEMENT & RISK IDENTIFICATION

Reading: Risk Management @ Royal Dutch Shell, Plc. (Main book)
        Enterprise Risk Management at Hydro One (Main book)
        Leadership and Risk Culture, Gandz and Seijts (Main book)
        American Electric Power Case (BB)

Topics:
- Enterprise risk management
- Common methods used to identifying risk
- ISO 31000
- Risk maps
- Risk appetite

6. RISK MITIGATION

Reading: Ch. 11 – Loss Control (Prereq book)
        Leadership and Risk Culture (Main book)
        Boeing Case (BB)

Topics:
- Effect of risk mitigation (reducing expected losses) on expected cash flows
  - Pre-event mitigation
  - Post-event mitigation
- Metrics
- Leadership and risk mitigation
- Organizational culture and risk mitigation
7. **RISK ASSESSMENT AND MODELING**

**Reading:**
- Value at Risk: Morgan Stanley (Main book)
- Analyzing Uncertainty – Probability Distributions, pp 9-13 (Main book)

**Topics:**
- Measuring Risk exposure
- Value-at-Risk
- Historical simulation
- Monte Carlo simulation
- @RISK Software for conducting simulations

**Case Assignment 2:** Construct the model in the Analyzing Uncertainty article using @RISK (BB)

8. **REDUCING RISK WITH INSURANCE**

**Reading:**
- Ch. 8 – Insurance Pricing (Prereq book)
- Ch. 23 – Commercial Insurance Contracts (Main book)

**Topics:**
- Insurance Pricing
- Contractual provisions (deductibles, limits, exclusions)
- Layering coverage
- Occurrence vs. claims made coverage
- Excess and surplus lines

**Case Assignment 3:** Simulation of payoffs on an Insurance Contract (BB)

9. **REDUCING RISK WITH DERIVATIVE CONTRACTS**

**Reading:**
- Ch. 24 – Hedging with Derivative Contracts (Main book)
- The Rise and Fall of AIG (Main book)
- Risk Exposure and Hedging (Main book)

**Topics:**
- Forward contracts
- Futures contracts
- Option contracts
- Swap contracts
- Over-the-counter market for derivatives
- Exchange traded derivatives
- Hedge ratios
- Comparison of derivative contracts with insurance contracts
- Credit Default Swaps, AIG and the Financial Crisis

**Case Assignment 4:** Risk Exposure and Hedging Case (Main book)
10. ALTERNATIVE RISK TRANSFER

Reading: Ch. 25 – Alternative Risk Transfer (Main book)

Topics:
- Loss sensitive insurance contracts
- Finite risk contracts
- Captive insurers
- Contingent financing arrangements
- Index linked notes
- Catastrophe bonds

11. ENTERPRISE RISK MANAGEMENT CASE

Reading: Ch. 27: Enterprise Risk Management: A Case Study (Main book)

Topics:
- Enterprise risk management
- Managing weather risk
- Advantages and disadvantages of bundling multiple exposures

Case Assignment 5: United Grain Growers Case

12. AVOIDING RISK MANAGEMENT MISTAKES

Reading: The Six Mistakes Executives Make in Risk Management, Taleb et al. (Main book)
- Dirty White Swans: Could Unexpected Extreme Events put you out of Business? (Main bk)
- Six Ways Companies Mismanage Risks, Stulz (Main book)