Finance 4335, Fall 2018 Synopsis

1. Decision Theory

   (a) Expected Value Rule

   (b) Expected Utility Rule

      i. Special case 1: Mean-variance
      ii. Special Case 2: Stochastic Dominance

2. Demand for insurance

   (a) Bernoulli principle – if insurance is actuarially fair, risk averters full insure

   (b) Mossin's theorem – if insurance is actuarially unfair, risk averters partially insure

   (c) Arrow's theorem – other things equal, the optimal partial insurance contract is the deductible contract

3. Asymmetric Information

   (a) Moral Hazard (hidden action)

   (b) Adverse Selection (hidden information)

4. Portfolio Theory

   (a) Mean-variance efficiency

   (b) Asset allocation

5. Capital Market Theory – pricing of risk (e.g., CAPM)

6. Option Pricing Theory

   (a) Binomial (discrete time) model

   (b) Pricing options based upon delta hedging, replicating portfolio, and risk neutral valuation approaches

   (c) Black-Scholes-Merton (continuous time) model

   (d) Application of the Black-Scholes-Merton (continuous time) model to evaluate credit risk

7. Corporate Risk Management; determinants include

   (a) Tax asymmetries (e.g., progressive marginal tax rates, incomplete tax-loss offsets) create a demand for risk management

   (b) Moral hazard (specifically, the underinvestment problem) can be mitigated by coordinating the firm's risk management and financing decisions

Finance 4335 Learning Objectives (source: course syllabus)

After completing this course, students should:

- Understand the various measures of risk (Decision Theory).

- Be able to calculate various measures of risk for individual risk exposures and portfolios of risk exposures (Decision Theory, Portfolio Theory).

- Understand the steps of the risk management process (The Entire Course); i.e.,

  - Identify risks;

  - Measure risks;

  - Evaluate different methods for managing risk; and

  - Implement an appropriate risk management strategy.

- Understand the methods that businesses use to allocate and manage risk (Demand for insurance, Corporate Risk Management); e.g., risk modeling, risk financing (insurance and hedging), choice of insurance and financial contract mechanisms (e.g., deductibles, coinsurance, compensation contract design, security design, organizational design, etc.).

- Understand the factors (e.g., moral hazard, adverse selection, and transaction costs) which limit the extent to which risk can be diversified or traded from one counterparty to another (Asymmetric Information).

- Understand the types of insurance and derivative contracts and how they can be used to reduce the cost of risk (Demand for insurance, Corporate Risk Management).

- Understand basic financial valuation models and how risk is incorporated in these models (Capital Market Theory, Option Pricing Theory).

- Understand the reasons why diversifiable risk can affect firm value (Option Pricing Theory, Corporate Risk Management).

- Be able to determine circumstances under which risk management will enhance firm value (Corporate Risk Management).