Aims and Objectives

The objective of this course is to provide a solid grounding in the principles and practice of financial markets and develop the understanding of the tools necessary to make good financial decisions. The course will cover modern capital markets theory and its applications to corporate finance.

Topics

1) Financial Markets and Management
   a) Financial Markets
   b) Opportunity Cost of Capital
   c) Role of Financial Markets
   d) Role of Management
   e) Arbitrage Pricing

2) Present Value
   a) Valuing Cash Flows
      i) The Time Value of Money
      ii) Future Value
      iii) Present Value
      iv) Value Additivity
   b) Project Evaluation
      i) Net Present Value
      ii) The Net Present Value Rule
   c) Shortcuts to Special Cash Flows
      i) Perpetuities - Growing Perpetuities
      ii) Annuities - Growing Annuities
   d) Compound Interest Rates
      i) Compound Interest versus Simple Interest
      ii) Discrete Compounding
      iii) Continuous Compounding
      iv) Effective Annual Yield
   e) Adjusting for Inflation

3) Project Appraisal and Capital Budgeting
   a) Capital Budgeting and the NPV Rule
   b) Payback
   c) Internal Rate of Return
   d) Profitability Index

4) Introduction to Risk and Return
   a) Risky Asset Returns
   b) Characterizing Asset Returns
   c) Risk and Horizon
d) The IID Assumption and its implications

e) Empirics on Risk and Return

5) Portfolio Selection
   a) Portfolios of Two Assets
   b) Diversification
      i) The Importance of Correlation
      ii) Systematic and Unsystematic Risk
      iii) Significance of Diversification
   c) Optimal Portfolio Selection
      i) Portfolio Frontier with Two Assets
      ii) Portfolio Frontier with Multiple Assets
      iii) Portfolio Frontier with a Safe Asset
      iv) Frontier Portfolios
   d) Main Points of Modern Portfolio Theory

6) The Capital Asset Pricing Model
   a) The Market Portfolio
   b) From Portfolio Selection to the CAPM
   c) Implications of CAPM
   d) Estimating Betas
   e) Understanding Betas
   f) Calculating the Risk Adjusted Discount Rate of a Project
   g) The Weighted Average Cost of Capital
   h) Empirical Evaluation of CAPM

7) Financing and Capital Structure
   a) Empirical Evidence on Capital Structure
   b) Modigliani-Miller Irrelevance Proposition
      i) Cheap Debt Fallacy
      ii) How leverage Affects the Cost of Capital
      iii) Calculating the Cost of Capital
   c) Capital Structure and Corporate Taxes
      i) Debt Tax Shield
      ii) Modigliani-Miller with Corporate Taxes
      iii) Implications
   d) Cost of Financial distress
   e) Optimal Capital Structure

8) Interest Rates and the Valuation of Bonds
   a) Fixed-Income Markets. US Government Bonds
   b) Information in Bond Prices
      i) Spot Interest Rates. Term Structure of Interest Rates.
      ii) Discount Bond
      iii) Coupon Bonds
      iv) Yield to Maturity
      v) Forward Interest Rates
   c) Properties of Bond Prices
   d) Interest Rate Risk - and Maturity - and Coupon Rates
      i) Measures of Interest Rate Risk (Duration and Modified Duration)
e) Credit Risk and Corporate Bonds
   i) Default Risk

9) Options and Option Pricing
   a) Options
      i) Definitions
      ii) Payoff of Options
   b) Put-Call Parity
   c) Option Strategies
   d) American Options and Early Exercise
   e) Option Pricing
      i) One Period; Two Periods Binomial Model
      ii) Black-Scholes Formula

10) Corporate Securities as Real Options
    a) Real Options
    b) Applications to Corporate Securities
       i) Zero-Coupon Bonds
       ii) Senior and Junior Zero coupon Bonds
       iii) Warrants
       iv) Convertibles
    c) First Passage Time Methods
       i) Black and Cox Decomposition
       ii) Risk Neutral Valuation
    d) Capital Structure Valuation Models
       i) Coupon Paying Debt with a Safety Covenant
       ii) Optimal Bankruptcy Decision
       iii) Link with the Standard Real Options Approach

11) The Valuation of Companies and Stocks
    a) Characteristics of Common Stock
    b) Valuation Using Dividends
    c) Modeling Cash Flows
       i) with Constant Growth
       ii) with Multiple Growth
       iii) Commonly Employed Ratios
       iv) Growth and New Investments
    d) Growth Opportunities and Growth Stocks
    e) Stock Price and Earnings per Share

12) Agency Problems
    a) Revisiting the Capital Structure Trade-off Theory
    b) Incentive Problems
       i) Moral Hazard and Credit Rationing
       ii) Jensen Meckling. Effort and Risk shifting problems
    c) Investment Problems
       i) Debt holders vs. Equity holders. Debt Overhang Problem
13 Financial Distress
   a) Irrelevance Theorem
   b) Asset Sales and Liquidation
   c) Reorganization and Workouts
   d) Formal Reorganization

Assessment
There will be a 2-hour written exam for both F100 and F200.

Readings

Prerequisites
The prerequisites for the course include working knowledge of calculus, probability, statistics, linear algebra.