

**Spring 2012**  
**Corporate Finance FNCE 100**  
**Wharton School of Business**

***Syllabus***

**Course Description**

This course provides an introduction to the theory, the methods, and the concerns of corporate finance. It forms the foundation for all subsequent courses such as speculative markets, investments and corporate finance. The purpose of this course is to develop a framework for analyzing a firm's investment and financing decisions. Since the emphasis is on the fundamental concepts underlying modern corporate finance, the approach will be analytical and rigorous, and some familiarity with accounting, mathematical, and statistical tools are advantageous. The topics covered in the course include: (1) discounted cash flow (time value of money); (2) capital budgeting techniques; (3) portfolio analysis and the Capital Asset Pricing Model (CAPM); (4) security market efficiency; (5) corporate financing and optimal capital structure, and (6) option pricing.

**Grading:**

There are two midterms, each counting 30%, and a final exam, counting 40%. The midterms are scheduled for Monday, February 20 and Monday, April 2. Both midterms will be given from 6:15 – 8:15 PM.

In addition, there will be two cases. Each student must perform satisfactorily in the cases to pass the course. More will be said about the cases in class.

**Required Reading:**

The textbook used is *Corporate Finance by Ross, Westerfield, and Jaffe, 9<sup>th</sup> edition* and the accompanying solutions manual.

**Readings:**

- a) Value and Capital Budgeting

Firms and individuals invest in a large variety of assets. The objective of these investments is to maximize the value of the investment. In this part, we will develop tools that can be used to determine the best investment from several alternatives.

- Ch. 4 Discounted Cash Flow Valuation
- Ch. 5 Net Present Value and Other Investment Rules
- Ch. 6 Making Capital Investment Decisions
- Ch. 8 Interest Rates and Bond Valuation
- Ch. 9 Stock Valuation

### **b) Capital Structure**

As with capital-budgeting decisions, firms seek to create value with their financing decisions. Therefore, firms must find positive NPV financing arrangements. However, to maximize NPV in financial markets, firms must consider taxes, bankruptcy costs, and agency costs. In this part, we will develop the methodology to maximize the value of the financing decision.

- Ch. 14 Efficient Capital Markets and Behavioral Challenges
- Ch. 16 Capital Structure: Basic Concepts
- Ch. 17 Capital Structure: Limited Use of Debt
- Ch. 18 Valuation and Capital Budgeting for the Levered Firm

### **c) Risk and Portfolio Analysis**

In this part, we will investigate the relationship between expected return and risk for portfolios and individual assets. This relationship determines the shareholders' required (expected) return and the firm's cost of equity capital. The capital-asset-pricing model is used to measure risk and expected return.

- Ch. 10 Risk and Return: Lessons from Market History
- Ch. 11 Return and Risk: The Capital-Asset-Pricing Model (CAPM)
- Ch. 13 Risk, Cost of Capital, and Capital Budgeting

### **d) Options**

In this part, we study both the principles and uses of options.

- Ch. 22 Options and Corporate Finance

## **DETAILED DESCRIPTION OF TOPICS**

The first four topics deal with the time value of money and its application to capital budgeting:

## TOPIC I – FUTURE AND PRESENT VALUE

This topic examines one of the most important concepts in all of corporate finance, the relationship between \$1 today and \$1 in the future.

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| Chapter 4    | Compounding – the one period case                 |
| Assignment 1 | Discounting – the one period case                 |
|              | Compounding beyond one year                       |
|              | Discounting beyond one year                       |
|              | Compounding more rapidly than once a year         |
|              | Annual percentage rate vs. effective annual yield |
|              | Continuous compounding                            |
|              | Multiperiod valuation                             |
|              | Short cuts for multiperiod valuation:             |
|              | Perpetuity  |
|              | Growing perpetuity                                |
|              | Annuity   |
|              | Growing annuity                                   |
|              | Examples  |
|              | Pension fund and Mortgage                         |

## TOPIC II – THE RULES OF CAPITAL BUDGETING

This topic examines alternative approaches to capital budgeting.

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| Chapter 5   | Definition of capital budgeting                 |
| Case: NETCO | The justification for net present value         |
|             | Independent vs. mutual exclusive projects       |
|             | Simple net present value example                |
|             | Payback example                                 |
|             | Problems with payback                           |
|             | Internal rate of return (IRR)                   |
|             | Problems of IRR with independent projects       |
|             | Borrowing vs. lending                           |
|             | Multiple rates of return                        |
|             | No internal rates of return                     |
|             | Problems of IRR with mutually exclusive returns |
|             | Timing  |
|             | Scale   |
|             | Replacement chains                              |
|             | Profitability index                             |

### TOPIC III – THE PRACTICE OF CAPITAL BUDGETING

This topic considers the practical application of capital budgeting techniques. Most of the emphasis here is on the determination of cash flows.

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| Chapter 6 | <ul style="list-style-type: none"> <li>Brief review of capital budgeting</li> <li>Relation between cash flow and accounting income</li> <li>Important considerations in determining cash flows <ul style="list-style-type: none"> <li>Incremental cash flows</li> <li>Opportunity costs</li> <li>Taxes</li> <li>Stockholders vs. tax books</li> </ul> </li> <li>Working capital and capital budgeting</li> <li>Inflation and capital budgeting <ul style="list-style-type: none"> <li>Interest rates and inflation</li> <li>Cash flow and inflation</li> <li>Discounting: nominal vs. real</li> </ul> </li> <li>Direct cash flow effects of purchase and sale of capital assets <ul style="list-style-type: none"> <li>Initial outlay</li> <li>Depreciation</li> <li>Resale of used asset</li> </ul> </li> </ul> |
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### TOPIC IV – VALUATION OF STOCKS AND BONDS

This topic uses earlier techniques (present value and future value) to value stocks and bonds.

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| Chapter 8  | Stocks  |
| Including appendix at <a href="http://www.mhhe.com/rwj">www.mhhe.com/rwj</a> | <ul style="list-style-type: none"> <li>Brief discussion of discount rate</li> <li>Relationship between short-term investor and long-term investor</li> <li>Dividends vs. capital gains</li> </ul>   |
| Chapter 9  | <ul style="list-style-type: none"> <li>Estimating growth</li> <li>Difference between income and growth stocks</li> </ul>  |
| Assignments 2 and 3  | <ul style="list-style-type: none"> <li>Growth opportunities</li> <li>Price-Earnings ratio</li> <li>Pitfalls in applying dividend discount model and related approaches</li> </ul>   |
|  | Bonds   |
|  | <ul style="list-style-type: none"> <li>Pure discount bonds</li> <li>Coupon bonds</li> <li>Interest rates and bond prices</li> <li>Coupon vs. yield to maturity</li> <li>Term structure of interest rates <ul style="list-style-type: none"> <li>Spot rates and yield to maturity</li> <li>Forward rates</li> <li>Explanation of term structure</li> </ul> </li> </ul> |

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| Corporate Debt |
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The next five topics deal with capital structure decisions.

**TOPIC V – EFFICIENT CAPITAL MARKETS AND CAPITAL STRUCTURE**

This topic defines efficient capital markets, presents empirical evidence, and shows why timing decisions on capital structure are suspect.

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| Chapter 14 | Definition of efficient capital markets<br>Types of market efficiency<br>Empirical evidence<br>Implications for corporate managers |
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**TOPICS VI AND VII – CAPITAL STRUCTURE WITHOUT TAXES AND WITH TAXES**

Topic VI and VII examine the basic issues of capital structure, finishing with the Modigliani-Miller relationship without taxes. Topic VII extends the Modigliani-Miller relationships to the world of corporate taxes.

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| Chapter 16<br>(pp. 488 - 504)<br>Assignment 4            | The goal of the manager: Maximizing the value of the firm<br>The relationship between firm value and stock price<br>How to maximize value: The traditionalist's approach<br>A counter-example to traditionalist approach <ul style="list-style-type: none"> <li>The effect of leverage on value: Modigliani-Miller (MM) Proposition I</li> <li>The effect of leverage on required equity return: Modigliani-Miller (MM) Proposition II</li> </ul> Justification for equality between personal and corporate borrowing rate<br>Example when inequality between rates occurs<br>The concept of market value balance sheets |
| (pp. 504 – 513)<br>Assignment 5<br>Case: Central Express | The basic paradigm: The pie chart<br>Why the IRS treats interest more favorable than dividends<br>The value of the tax shield<br>The value of the levered firm: MM Proposition I<br>The effect of leverage on required equity return: MM Proposition II<br>Market value balance sheets<br>Effect of leverage on stock prices   |

## TOPIC VIII – ADJUSTED PRESENT VALUE, WEIGHTED AVERAGE COST OF CAPITAL AND FLOWS TO EQUITY

This topic shows how the earlier material on capital structure can be used to perform capital budgeting on levered firms.

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| Chapter 18<br>(excluding 18.7) | Adjusted Present Value (APV)<br>The base case: Review of capital budgeting<br>Tax shield<br>Market Value Balance Sheets<br>Weighted average cost of capital (WACC)<br>The cost of equity<br>The cost of debt<br>Calculating WACC<br>Flows to Equity<br>Determining cash flows<br>Determining discount rate<br>EPS and shareholder risk<br>Comparison of WACC and APV<br>The scale enhancing project<br>The known debt level case<br>A suggested guideline<br>Recapitalization<br>LBO Example |
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## TOPIC IX – COSTS OF DEBT AND OPTIMAL CAPITAL STRUCTURE

Topic IX shows why firms must balance the tax benefits of debt with agency costs of debt when considering capital structure.

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| Chapter 17<br>(excluding 17.8 and 17.9) | Relationship between MM theory with taxes and real world behavior<br>The search for costs of debt: Bankruptcy<br>Direct costs of financial distress<br>Indirect costs of financial distress<br>Who bears costs of financial distress<br>Taxes vs. bankruptcy costs: The tradeoff<br>The three determinants of debt level<br>Decision-Making in the real world<br>Agency costs of equity<br>Application to LBOs<br>Bonding the managers<br>How LBOs reduce agency costs<br>The future of LBOs |
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## TOPIC X – ALTERNATIVE VALUATION METHODS

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| Review of APV<br>Review of WACC<br>Review of Flow to Equity<br>Price / Earnings Ratio<br>Market / Book Value Ratio<br>Breakup Value<br>Liquidation Value |
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The next three topics deal with the relationship between risk and returns in its application to the determination of the discount rate in capital budgeting.

## TOPIC XI – STATISTICAL CONCEPTS AND AN OVERVIEW OF CAPITAL MARKETS

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| Chapter 10 | Preview of the next three topics<br>Review of definition of return<br>Risk statistics for an isolated stock<br>Variance<br>Standard deviation<br>Risk statistics for a diversified investor<br>Covariance<br>Correlation<br>An historical perspective to risk and return |
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## TOPIC XII – RETURN AND RISK

The topic develops the relationship between the expected return on a stock and its risk.

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| Chapter 11 | Statistical parameters for a portfolio<br>Expected return on a portfolio<br>Variance and standard deviation of a portfolio<br>The efficient frontier<br>Efficient set for 2 assets<br>Efficient set for many assets<br>Efficient set and diversification<br>Efficient frontier and riskless borrowing and lending<br>The relationship between risk and return |
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| Beta: The measure of risk for individual security in context of a large portfolio<br>Expected return as compensation for beta<br>The capital asset pricing model (CAPM)<br>Empirical evidence on CAPM<br>Determining beta in the real world<br>Formula for calculating beta |
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### TOPIC XIII – THE CAPM AND CAPITAL BUDGETING

This topic shows how discount rates for projects can be determined from the relationship between risk and return.

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| Chapter 13 | Review of rationale for choosing a discount rate<br>Relationship between beta of a stock and beta of a project<br>Determinants of beta of a project<br>Practical application of CAPM to capital budgeting |
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### TOPIC XIV – OPTIONS

This topic discusses both the principles and uses of options.

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| Chapter 22 | Definition of calls and puts<br>Combinations of options<br>Covered calls<br>Put-call parity<br>Other option strategies |
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