Spring 2016
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 is necessary. The topics covered in the course include (1) discounted cash flow (time value of money), (2) capital budgeting, (3) valuation of stocks, (4) valuation of bonds, (5) security market efficiency, (6) corporate financing and optimal capital structure, (7) portfolio analysis and the Capital Asset Pricing Model (CAPM), and (8) options.

Grading:

There are two midterms, each counting 30%, and a final exam, counting 40%. The midterms are scheduled for Monday, February 22 and Monday, April 4. Both midterms will be given from 6:15 – 8:15 PM.

Attendance:

Students are responsible for all material presented in class. You must attend the section in which you are enrolled.

Required Reading:

The textbook is *Corporate Finance by Ross, Westerfield, Jaffe, and Jordan, 11th edition*, customized for FNCE 100.

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 Valuation

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.

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.

Chapter 5	Definition of capital budgeting
(Excl. Sect. 5.6)	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

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.

Chapter 6	Brief review of capital budgeting
	Relation between cash flow and accounting income
	Important considerations in determining cash flows
	Incremental cash flows
	Opportunity costs
	Taxes
	Stockholders vs. tax books
	Working capital and capital budgeting
	Inflation and capital budgeting
	Interest rates and inflation
	Cash flow and inflation
	Discounting: nominal vs. real
	Direct cash flow effects of purchase and sale of capital assets
	Initial outlay
	Depreciation
	Resale of used asset

TOPIC IV – VALUATION OF STOCKS AND BONDS

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

Chapter 9	Stocks	
(Excl. Sect. 9.5)		Brief discussion of discount rate
		Relationship between short-term investor and long-term investor
Assignment 2		Dividends vs. capital gains
		Estimating growth
		Difference between income and growth stocks
		Growth opportunities
		Price-Earnings ratio
		Pitfalls in applying dividend discount model and related approaches
Chapter 8,	Bonds	
including appendix		Pure discount bonds
		Coupon bonds
		Interest rates and bond prices
Assignment 3		Coupon vs. yield to maturity
		Term structure of interest rates
		Spot rates and yield to maturity

	Forward rates
	Explanation of term structure
	Corporate Debt

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.

Chapter 14	Definition of efficient capital markets
	Types of market efficiency
	Empirical evidence
	Implications for corporate managers

TOPICS VI AND VII – CAPITAL STRUCTURE WITHOUT TAXES AND WITH TAXES

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

Chapter 16 (pp. 490 - 506) Assignment 4	The goal of the manager: Maximizing the value of the firm
	The relationship between firm value and stock price
	How to maximize value: The traditionalist's approach
	A counter-example to traditionalist approach
	The effect of leverage on value: Modigliani-Miller (MM) Proposition I
	The effect of leverage on required equity return: Modigliani-Miller (MM) Proposition II
	Justification for equality between personal and corporate borrowing rate
	Example when inequality between rates occurs
	The concept of market value balance sheets
(pp. 506 – 515) Assignment 5	The basic paradigm: The pie chart
	Why the IRS treats interest more favorable than dividends
	The value of the tax shield
	The value of the levered firm: MM Proposition I
	The effect of leverage on required equity return: MM Proposition II
	Market value balance sheets
	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.

Chapter 18	Adjusted Present Value (APV)
(Excluding 18.7)	The base case: Review of capital budgeting
	Tax shield
	Market Value Balance Sheets
	Weighted average cost of capital (WACC)
	The cost of equity
	The cost of debt
	Calculating WACC
	Flows to Equity
	Determining cash flows
	Determining discount rate
	EPS and shareholder risk
	Comparison of WACC and APV
	The scale enhancing project
	The known debt level case
	A suggested guideline
	Recapitalization
	LBO Example

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.

Chapter 17	Relationship between MM theory with taxes and real world behavior
(Excluding 17.7 and	The search for costs of debt: Bankruptcy
17.8)	Direct costs of financial distress
	Indirect costs of financial distress
	Who bears costs of financial distress
	Taxes vs. bankruptcy costs: The tradeoff
	The three determinants of debt level
	Decision-Making in the real world
	Agency costs of equity
	Application to LBOs
	Bonding the managers
	How LBOs reduce agency costs
	The future of LBOs

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 X – STATISTICAL CONCEPTS AND AN OVERVIEW OF CAPITAL MARKETS

Chapter 10	Preview of the next three topics
	Review of definition of return
	Risk statistics for an isolated stock
	Variance
	Standard deviation
	Risk statistics for a diversified investor
	Covariance
	Correlation
	An historical perspective to risk and return

TOPIC XI – RETURN AND RISK

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

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

TOPIC XII – THE CAPM AND CAPITAL BUDGETING

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

Chapter 13	Review of rationale for choosing a discount rate
(Excl. Sect. 13.11)	Relationship between beta of a stock and beta of a project
	Determinants of beta of a project
	Practical application of CAPM to capital budgeting

TOPIC XIII – OPTIONS

This topic discusses both the principles and uses of options.

Chapter 22	Definition of calls and puts
(Excl. 22.8 – 22.11)	Combinations of options
	Covered calls
	Put-call parity
	Other option strategies

RECOMMENDED END-OF-CHAPTER PROBLEMS (Not to be handed in)

While attending class and reading the textbook are obviously necessary for learning the FNCE 100 material, doing end-of-chapter problems is also an extremely important way to understand and reinforce the material. Students should work through the following end-of-chapter problems. While I strongly urge all students to attempt both the suggested and additional problems, students should, at the very least, tackle the suggested ones.

Chapter 4

Suggested:

Basic: # 3, 4, 6, 12, 13, 14, 15, 16
Intermediate: # 21, 24, 25, 26, 27, 28, 30, 34, 38, 40, 41, 45, 46, 49
Challenge: # 52, 54, 56, 57, 65, 66, 67, 68, 69, and 70

Chapter 5

Suggested:

Basic: # 1, 5
Intermediate: # 11, 13
Challenge: # 23, 28

Additional Practice Problems:

Basic: # 6
Intermediate: # 14, 17

Chapter 6

Suggested:

Basic: # 1, 3, 4, 5, 9
Intermediate: # 14, 15, 23, 25
Challenge: # 30, 31, 33, 34

Additional Practice Problems:

Intermediate: # 19
Challenge: # 38a

Chapter 9

Suggested:

Basic: # 1, 4, 9
Intermediate: # 13, 14, 15, 16, 18, 21, 23
Challenge: # 30, 33, 34

Additional Practice Problems:

Intermediate: # 17, 24, 25
Challenge: # 31

Note:
#25 − the P/E ratio that you are asked to calculate is the trailing P/E ratio.

Chapter 8

Suggested:

Basic: # 3, 4
Intermediate: # 17, 18, 19, 20, 21
Challenge: #31

and # 1 − 6 in Appendix to Bond Chapter

Additional Practice Problems:

Intermediate: # 24, 26

Chapter 14

Suggested:

Concept Questions: # 2, 3, 5, 6, 7
Basic: # 2, 3, 4

Additional Practice Problems:

Concept Questions: # 11

Chapter 16

Suggested:

Basic: # 1, 2, 12, 13, 14, 15, 16
Intermediate: # 17, 18, 19, 23, 24, 25
Challenge: #26

Note:
#26 – while this is a theoretical question, the rudiments of this question will be discussed
in class.

Chapter 18 (excluding the CAPM questions which will not be on the second midterm)

Suggested:

Basic: # 1, 3
Intermediate: # 10, 11, 12
Challenge: # 15, 16, 17

Chapter 17

Suggested:

Concept Questions: # 1, 2, 4
Intermediate: #8

Chapter 10

Suggested:

Basic: # 1, 2, 12, 17
Intermediate: #23

Additional Practice Problems:

Basic: # 4, 6

Chapter 11

Suggested:

Basic: # 1, 2, 3, 5, 10, 12, 16
Intermediate: # 26, 28, 29, 30, 31
Challenge: # 34, 36, 37, 38

Note:
#37 – the sentence "Assume the CAPM holds" should be ignored.
#38 – uses calculus which will not be on exam.

Additional Practice Problems:

Basic: # 6, 9
Intermediate: # 22

Chapter 13

Suggested:

Basic: # 1, 3, 5, 10, 11, 12, 13
Intermediate: # 16, 19, 21
Challenge: #24 (ignore part e and flotation cost)

Note:
#24 – this is a good problem to go over but ignore calculations of flotation cost, which
you will not be responsible for on the final

Chapter 18 (CAPM questions which can be on the final exam but not on the second mid-
term)

Suggested:

Basic: #4
Intermediate: #13

Chapter 22

Suggested:

Concept Questions: # 1, 2, 3, 4, 5, 6, 7, 11, 12, 13
Basic: #2, 3