

Course Description

This three-credit course explores the current theory and practice related to alternative approaches to meeting the financial needs of the firm. *The emphasis is on strategic, long-term financial strategy and policy.* The course stresses financial analysis and planning, from a managerial perspective. We emphasize the decision-making criteria and tools for dealing with topics such as the valuation of stocks and bonds, financial planning, capital budgeting, determining the firm's cost-of-capital, the use and management of financial leverage (debt capital management), the lease-versus purchase and make-versus-buy decisions, and managing financial risk.

Prerequisites and Other Conditions

The prerequisite course is CR 501 (Financial and Managerial Accounting). Hence, FD 503 (Accounting for Decision Makers), and FD 504 (Managerial Finance) *or their equivalents* are also required. You may have received credit for the two foundations courses based on prior work.

The key knowledge and skills that I expect you to import into CR 506 from this background include:

- The ability to establish and manipulate relationships that can be represented as straight lines in the form $y = mx + b$ and variants thereof (as used, for example, in linear breakeven analysis);
- the knowledge of what constitutes the key information available from a *balance sheet*, an *income (P&L) statement*, and a *cash flow statement*, and ability to extract that information as required for financial analysis and prediction (one chapter review is included in course textbook);
- a basic understanding of the concept of the time value of money, and the discounting of future expected cash flows to their present values; and,
- the knowledge of the vocabulary of accounting and finance as presented in these foundation courses;
- the ability to determine and explain *means* (the average value of some variable), *standard deviations*, and *expected values*.

As a supplement to the text, and a way to recover concepts that you were exposed to in your basic accounting and finance work, I strongly recommend that you visit www.studyfinance.com. Go through the lectures on the Time Value of Money, Valuation, and Depreciation, as well as the self-paced overviews Time Value of Money, Valuation of Corporate Securities, Basic Financial Statements, and Ratio Analysis. For material on straight lines, try the algebra resource

www.purplemath.com/modules/strtlneq.htm. For statistics, try www.durham.ac.uk/stat.web/contents.htm (StatWeb at the University of Durham in England) and www.statsoftinc.com/textbook/stbasic.html (StatSoft).

Other web resources are useful. Go to www.investorwords.com or the Business Owner Toolkit (www.toolkit.cch.com) to find definitions and methods of calculation for things like operating leverage. Of course, you can always try to Google it (that is how I found these two sites).

Course Objectives

Bodie and Merton have suggested that the unifying theme of a course in corporate finance in the “3 Pillars of Finance.”¹ These three pillars are:

1. Optimization over time
2. Asset Valuation
3. Risk Management

For Bodie and Merton, these elements represent the basic laws and principles that apply across all the subfields of finance. The student in CR 506 should be able to explain and apply these three pillars to the key aspects of corporate finance. In that light, the more detailed learning objectives for the student in this course, in the sense of key skills and abilities, are the following:

- Student will be able to explain and demonstrate the concept of present value.
- Student will understand the aggregate concept of risk as applied to a financial asset, and its two components – systematic and unsystematic risk. Student will be *able to apply various tools to measure and evaluate risk*, such as the development of probability distributions for asset returns, the calculation of coefficients of variation, the Capital Asset Pricing Model, and Decision Tree analysis.
- Student will be able to value stocks and bonds, and to explain those values (and changes in those values) using the principles of financial asset valuation.
- Student will be able to *estimate and explain the Weighted Average Cost of Capital* for a firm, and explain what kinds of investment opportunities it should and should not be applied to.

¹ Bodie, Zvi and Robert C. Merton. *Finance*. New York: Prentice Hall Business Publishing, 2000.

- Student will be able to *evaluate capital investment projects* by applying the standard analytical tools like Net Present Value, Internal Rate of Return, and Payback Period calculations, as well as more sophisticated variants of these tools. (These tools require a thorough understanding of the concepts and calculations related to the *time value of money*.) This skill is needed to enable the financial manager to help make decisions about what assets to acquire, and how to finance them.
- Student will be able to determine if, and by how much, a firm will need to raise new funds (from debt and/or equity sources) in external markets in order to support its sales growth objectives. This *financial forecasting and planning concept that is typically called “Additional Funds Needed” (AFN) “Required New Funds Analysis” (RNF) or “External Financing Needed Analysis” (EFN)*.
- Student will be able to *determine a firm’s “sustainable growth rate,”* which is the rate of sales growth that the firm can support without new external equity financing while maintaining a constant debt-to-equity ratio (i.e., new external debt financing is possible if retained earnings increase the firm’s equity),² *and the firm’s optimal growth rate*.
- Student will be able to *analyze financial risk, and make management decisions related to risk mitigation* such as hedging to reduce a firm’s exposure to price, exchange rate, interest rate, and other fluctuations.
- The student will be able to explain the nature and role of the financial system in a capitalist market economy, and how various government policies (including taxation and the federal budget, as well as the actions of the Fed) affect the firms in the economy.
- Student will be able to discuss the key concepts of *financial ethics*.

AS A GENERAL POINT, REMEMBER THAT THE GOAL, AND DECISION-MAKING CRITERION, FOR ALL YOUR ACTIONS IS WEALTH-MAXIMIZATION FOR THE SHAREHOLDER.

Organization and Pedagogy³

This advanced (MBA-level) course in corporate financial management must structure, for you, a mass of information, illuminate basic theories and concepts, give examples of relevant applications of theories and concepts, afford extensive opportunities to practice

² In order to perform these RNF, EFN and Sustainable Growth analyses, the student will need to be able to do effective financial statement analysis, as covered in chapter 4 of the assigned text.

³ This section borrows very liberally from “The Lecture: a Powerful Tool for Intellectual Liberalization” by Kenneth R. Stunkel (*The Chronicle of Higher Education*, 26 June 1998, page A52).

what you are learning, and present relevant issues and debates regarding the discipline. How will we do this?

- Some of this work is done via LECTURE.
- Some of the work will be PRACTICE IN PROBLEM-SOLVING, using the development, presentation and debriefing of *homework problems*⁴. Since our classes are usually small, some *collaborative learning exercises* will be used, in addition to your individual work. Such work will be done in class.
- Another element will be DISCUSSION OF CURRENT TOPICS AND EVENTS in corporate finance, using the tools of the course to explain these phenomena and suggest resolutions to imbedded problems.
- Students will PREPARE A PORTFOLIO of analytical essays dealing with 5 topics, as a part of the graded work.
- A MID-TERM EXAM will be given, WITH A FULL DEBRIEFING the week after the exam (at which time the graded exams will be returned).

Interactive parts of the course will involve instructor-student and student-to-student conversation regarding certain questions that appear in the text. The instructor will indicate which of those questions and problems will be fair game, in advance of the class meetings in which such conversations will be held. Again, certain problems will be *assigned as homework*, then will be reviewed in class by the professor.

You will also be asked to *bring stories with you*, say from the popular press, that are related to the topics we are discussing, and to discuss how course concepts can be used to explain the story and/or make decisions about the explicit or implicit problems in the story.

Materials

The course text is *Corporate Finance: a Focused Approach* by Michael Ehrhardt and Eugene F. Brigham, a 2003 copyright published by Thomson Southwestern. ISBN is 0-324-18035-7.

Handouts and web exercises for financial ethics.

Additionally, you will be asked to identify and utilize information in hardcopy sources/on-line sources, especially *The Wall Street Journal* (can be accessed through Pro-quest via Trexler Library, either on-campus in Center Valley or from off-campus

⁴ Many of the problems have numerical answers in Appendix B. But your charge is to answer them by showing the process as well as the outcome (use the answers to the ST problems, per Appendix A, as guidance).

with appropriate code). You can gain access to all these Trexler resources from off-campus if you have a Trexler Library card.

Grading

The following opportunities for securing the grade that you desire will be offered:

- MID-TERM EXAM (the full class period of the 6th class will be devoted to the mid-term exam). This examination is weighted at 30% of the grade. *It is open book, open note, and you may use a calculator.* Since the final exam will be comprehensive, assessing the level of the student's skills and knowledge is at the end of the course, this condition will hold: IF THE SCORE ON THE FINAL EXAM EXCEEDS THE SCORE ON THE MID-TERM, THE MID-TERM GRADE SCORE WILL BE RAISED TO THE LEVEL OF THE FINAL EXAM SCORE.
- FINAL EXAMINATION (the full class period of the last class will be devoted to the final exam). This is a comprehensive examination, and is weighted at 40% of the grade. *It is open book, open note, and you may use a calculator.*
- PORTFOLIO (a collection of 5 current financial news from articles and other material, with written evaluations and explanations of the material by the student, due per schedule on page 8). Grade weight is 30%.

Homework assignments will be suggested, and will mostly involve the “problems” at the end of each chapter. Many of these have answers that are numerical, given to you in Appendix B. In those cases, your homework task is to show that those numbers are correct. Answers to all the end-of-chapter questions and problems will be posted on the Blackboard site, so that you might approach homework in a programmed study mode.

We will review these assignments in class, and handle questions /problems / issues that you have. We will then build on that learning base with additional discussion and problem-solving during class time.

The average grade in percentage terms will be converted to a letter grade per the following scale:

93-100%	A	73-76%	C
90-92%	A-	70-72%	C-
87-89%	B+	67-69%	D+
83-86%	B	60-66%	D
80-82%	B-	Below 60%	F
77-79%	C+		

Students *are expected* to attend, and participate in class regularly. There is no direct grade penalty for missing a class, but it may be difficult to make up for the work missed in a class. The instructor may provide bonus points based on the student's attendance and class participation.

Statement of Mutual Responsibility

Students and the instructor are partners in learning and incur important mutual obligations in this or any course. The instructor is obliged to plan and conduct the course to meet course objectives; assign readings, homework, and exams appropriate to those objectives; and grade students' work fairly and promptly. Students are obliged to properly prepare for and attend all classes, actively engage the material presented and one another (students) in discussion, and complete all assignments. Students are reminded that presenting the work, ideas, writings or concepts of another as one's own is a serious violation of fundamental academic trust, and is unacceptable at the college – such dishonesty will result in a failing grade, for assignments and perhaps for the course. Finally, students are expected to show respect for the views and opinions of others.

CR 506
Schedule of Classes and Activities

Class Meeting	Topics and Activities	Assigned Readings and Other Homework (see footnote on page 4)
1	Introduction and Overview; Review of Financial Accounting; Comparing and contrasting finance and accounting.	Read Chapter 1. Try to read problems 1-7 and 1-12 (we will solve them in class).
2	Time Value of Money. Risk and Return.	Read Chapters 2-3. Do problems 2-5, 2-6(a), 2-14, 3-7, and 3-13.
3	Bond and Stock Valuation	Read Chapters 4 and 5. Do problems 4-1, 4-6, 5-2, 5-5, 5-14, and 5-19.
4	Cost of Capital, and Capital Budgeting	Read Chapters 6 and 7. Do problems 6-8, 6-9, 6-11(b), 7-1, 7-4, 7-8.
5	Cash Flow Estimation and Risk Analysis	Read Chapter 8. Do problems 8-4 and 8-8.
6	MIDTERM EXAM	Cumulative
7	The Doctor is in: Financial Statement Analysis	Read Chapters 9-10. Do problems 9-1, 9-7, 9-8(a), 9-9(d), 10-8, 10-9 (parts a and c), and 2 problems to be assigned.
8	Financial Forecasting & Planning	Read Chapter 11. Do problems 11-5 (a and b), 11-6(a), 11-9, and a problem to be assigned later.
9	Corporate Financing	Read Chapters 12. In Chapter 13, read pp. 477-87, including the whole of

		Table 13-1, stopping at “Capital Structure Theory, and pp. 491-3 on “signaling theory.” Do problems 12-1, 12-3, 12-4, 12-6 (value of operations calculation only), 12-9, 13-1.
10	Real Options, Lease versus Purchase Decisions, and Make versus Buy Decisions.	Read Chapters 17, pp. 634-41 on real options only. Additional materials and problems will be distributed.
11	International Finance	Read Chapter 15. Do problems 15-1, 15-3, 15-4, 15-8, 15-9, and 15-10..
12	FINAL EXAM	COMPREHENSIVE

CR 506 Portfolio

Do an essay for each item numbered 1-5. Each essay will have from 1-2 standard typewritten pages of text, plus additional space if graphs, table, or other such items are needed. The essay should be submitted as a Word document via e-mail.

You must provide me with a copy or transcript of each story on which you base your portfolio item (or give me a detailed citation with title, source, date(s) of publication or presentation, page numbers as appropriate, and name of author or other presenter). The stories may be in hard copy sources like magazines and newspapers, broadcast media sources like NPR “Marketplace” show or CNN’s “Moneyline”, Internet sites, personal interviews, et al. You may need to search for supplementary material to develop a good portfolio piece.

Remember, you need to apply the theories and techniques of corporate financial management to analyze these stories.

- Item 1 will be due at Class #4.
- Item 2 will be due at Class #5.
- Item 3 will be due at Class #8.
- Item 4 will be due at Class #10
- Item 5 will be due at Class #11.

1. Find a current story that discusses a change in the market price of a segment of the bond market (e.g., high-yield bonds, government agency bonds, U.S. Treasury bonds, corporation bonds, etc.). Show how the information in the article confirms and explains the nature of the price change.

2. Find a story that deals with a recent change in firm's stock price, either an event-driven story (e.g., a firm reports a lower-than-expected quarterly earnings statement) or a trend story (e.g., the change in the market price of WWF Entertainment) over the last 12 months). Explain the price change, using empirical information and course concepts.
3. Find a current story that deals with a change in the level of capital expenditure (increase or decrease) by a firm or an industry, and explain why this change has occurred (again, apply course concepts to the empirical info).
4. Locate a story about a firm that has changed its dividend policy, explaining the nature of and reasons for the change, and critiquing the change.
5. Explain a recent example in which a rating agency like Moody's Investor Services (www.moody.com) or Standard & Poor's (www.standardandpoors.com) changes the rating on a corporate bond or another organizations bond (e.g., a university). You may want to get the bond rating guides of either Moody's or S&P, or both.

Example pieces for some of the topics are presented on the next 2 pages.

HOME DEPOT'S CAPITAL BUDGET

The 21 February 2001 issue of *The Wall Street Journal* ran an article by Chad Terhune entitled, "Home Depot Trims Store Openings as Profit Sags." Home Depot has reportedly "slashed planned store openings by 11% this year."

This seems to clearly signify a reduction in the firm's capital budget.

One reason for this shift appears to be a re-assessment of the cash flow potential associated with capital projects that added more stores and the profit potential from operating expenses designed to boost existing store profitability. There is a strategic shift and it now "appears that Home Depot's earnings growth will rely on aggressive pursuit of improved operating efficiency rather than just the traditional formula of more stores and higher sales." CEO Robert Nardelli states, "We want to increase the efficiency and overall productivity of the assets we have."

This condition implies that the opportunity cost of putting capital funds into new stores is higher – the alternative application of operating funds⁵ now has a higher perceived potential return, so the offset to cash flows generated by a new store addition is higher than before. This change will cause the IOS schedule (the firm's demand for capital) to shift left, i.e., to decrease.

Another reason for this budget reduction is heightened "concerns of potential market saturation." The current weakness in the economy bodes poorly for the near term performance of any new store that is opened, while market saturation would reduce long term revenue and income potential for new stores. These factors combine to reduce the profit and cash flow potential, hence the NPV, of prospective new store investments. As with the increase in opportunity costs, this development would decrease the demand for capital.

On the supply side, the strategic shift seems to be raising the cost of capital to Home Depot by decreasing the supply of capital to the firm. One analyst notes that the strategic shift from sales to margin may cause the price-earnings ratio to "moderate [decline] a little [as investors] typically pay more for a sales story than a margin story." Moreover, "investors may have to readjust [downwards] their expectations for the retailer's growth." These items would cause the cost of equity capital to rise for any level of investment.

(Thus, your graph would show leftwards shifts in the demand and supply for capital, indicating that the quantity of capital expenditures would decline.)

LUCENT TECHNOLOGIES INC. RATING THE DEBT

⁵ Examples cited are increased sales initiatives aimed at contractors, and reduced requirements for employees to stock merchandise during the day to let them become full time sales people (meaning more expense for part-time stockers).

Lenders are worried about rising delinquencies and defaults amid a slowing economy in the United States. In December, Lucent reported a \$1.02B loss in the company's first quarter, affected at least in part by a slowing telecommunications market.

In February, *The Wall Street Journal* reported⁶ that both Standard and Poor's and Moody's downgraded Lucent's debt to one notch above "junk bond" status, "raising the company's cost of financing [and] adding to the growing nervousness among investors that [Lucent] is facing tough challenges turning its fortunes around.

For the short run, the firm's "cash position seems adequate" and the firm has taken other financial structuring decision "to take the liquidity issue off the table." It would seem, therefore, that the downwards revision was not due to a worsening of the current ratio or to the interest expense/current assets ratio. But the article states, "The new ratings, however, reflect a growing pessimism about Lucent's near term prospects." A Moody's executive argues that, "This is a company that clearly has operating difficulties. Revenue fell dramatically and they experienced a very large loss."

Thus, certain other liquidity ratios like interest expense/cash flow and times interest earned have declined, heightening the short-term vulnerability of the firm in a market that continues to weaken, causing even more distress.

The firm's losses and declining share price would have increased the leverage ratios, whether measured on market value (value of stock has declined) or book value (losses reduce the amount of equity). Moreover, the firm is working on adding more debt, further leveraging the company and adding risk for both creditors and shareholders.

Additionally, "Moody's expressed skepticism about Lucent's ability to successfully restructure. In particular, Lucent will have trouble getting back to profitability as the market for its core products shrink." This anticipated reduction in the firm's long term earnings capacity further increases Lucent's *leverage*.

Moreover, the reduced earnings and cash flow potential, along with the fact that Lucent is "finding it more expensive to tap financing" and having to "pay through the nose for financing" will quickly cause the interest expense/cash flow, interest expense/current assets, and times interest earned ratios to degrade ... negatively affecting *liquidity*. And, if Lucent has to draw down on its existing credit line (Lucent "recently renewed an existing \$2 billion credit facility"), that will reduce the current ratio.

Thus, we can demonstrate that Lucent creditors have become more vulnerable due to heightened leverage, greater liquidity risk, and a reduction in overall solvency (as Z-

⁶ Gregory Zuckerman and Dennis K. Berman. "Lucent Debt Is Downgraded by Rating Agencies." Tuesday, 13 November 2001.

scores will decline), and that their vulnerability is likely to increase even further. These conclusions justify the downgrading of Lucent's debt ratings.

FINANCE WEBSITES

- www.cme.com/market/prices/currencies.html futures, forwards
- converting convertibles www.cfo.com/toolbox
- www.wsj.com, www.forbes.com, www.cfo.com (Forbes and CFO magazine sites are free; WSJ site can be scanned but detailed look at articles is not free)
- www.moodys.com
- www.stls.frb.org/fred, www.frb.gov (Federal Reserve Board)
- <http://netec.wustl.edu> (WebEc)
- www.slate.com, www.fastmoney.com
- www.careers.wsj.com
- www.cob.ohio-state.edu/~fin/osujob.htm skills and reqs for careers in finance
- www.teachmefinance.com
- www.bondsonline.com The Bond Professor, SEC EDGAR database, corporate bond FAQs
- www.bondmarkets.com
- www.mcsba.com for pv, fv, etc.
- www.finpipe.com stocks and bonds valuation
- www.studyfinance.com (U. AZ)
- <http://csep1.phy.ornl.gov/mc/mc.html> Monte Carlo Simulation
- www.smartmoney.com
- www.olin.wustl.edu/faculty/back/general.htm "Optimal capital structure spreadsheets"
- www.cob.ohio-state.edu/finance/resources_education/educourse.htm and clips.htm in place of educourse.htm
- www.yahoo.com, <http://bonds.yahoo.com> (Bonds 101)
- www.ExploreMath.com (select a category, like quadratics, then a problem or tool to experiment with. Animated equations show how changing variables show how something like the slope of a line changes)
- <http://valuation.ibbotson.com> Cost of Capital for 5000 firms
- www.investopia.com