

Corporate Finance (Honors)
Finance 100
Sections 301 and 302
The Wharton School, University of Pennsylvania
Fall 2016

Course Description

The purpose of this course is to introduce techniques of financial analysis, with applications to corporate finance. The concepts developed in Finance 100 form the foundation for all elective finance courses. The main topics covered include (1) the time value of money and the net present value rule; (2) valuation of bonds and stocks; (3) capital budgeting decisions; (4) uncertainty and the tradeoff between risk and return; (5) corporate financing decisions; and (6) options. The honors sections will take a more analytical and quantitative approach compared to other sections, and will cover some topics in more depth.

Professor

Jessica A. Wachter
Email: jwachter@wharton.upenn.edu

Teaching Assistants

Jack Fenton
Email: fentonj@wharton.upenn.edu

Teresa Heung
Email: heungt@wharton.upenn.edu

Course Material

- Required: Course notes, links to relevant articles, and past exams available on Canvas: <https://canvas.upenn.edu>.
- Recommended: Corporate Finance by Ross Westerfield and Jaffe, 11th edition.
There is a special edition for Finance 100 that includes only chapters we use in the course that less expensive.
- A scientific or business calculator. It will be necessary for your calculator to have a x^y function.

Problem Sets

Problem sets are due on the day given in the syllabus. You will be rewarded full credit on the problem set if you have made a good-faith effort to answer all of the questions, and if you hand in the problem set on time. Late problem sets will not be accepted.

Grading

Grades will be based on the midterm exams (20% for the first, 25% for the second), the problem sets (10%), the computer assignment (5%), and the final exam (40%). The second midterm will integrate material from before the first midterm. The final exam, which is held on the date and time determined by the registrar, will be fully cumulative. You will be allowed one double-sided page of notes for the first midterm, two double-sided pages for the second, and three double-sided pages for the final. Class participation can help determine the grade if the student is on the margin between grades.

Exam Schedule:

- First Midterm: Tuesday September 27, in class.
- Second Midterm: Tuesday November 8, in class.
- Final: Monday December 19, 6–8 pm. Location TBD.

Note that there will not be any make-up exams except as required by university policy.

All regrade requests must be made in writing within one week of the day the exams are returned. Any exam submitted for regrading of a question can be subjected to a complete regrading.

Study Groups

You are encouraged to work in groups on the problem sets, but you must hand in your own answers. It is also highly recommended that you regularly review the readings and class notes with your study group.

Office Hours

Jessica Wachter's office hours will be held in SH-DH 2459. Note: It is my policy not to answer questions about problem sets before they are due. Please carefully look at the solutions before asking questions about a problem set has been handed in, since you may find the answer to your question there.

Teaching Assistant office hours will be held in the TA cubicles (SHDH 2305).

Times will be announced by the beginning of the second week of classes. All office hours begin the second week of classes.

Changes to office hour times and locations in any given week will be posted on Canvas.

Course Schedule

Notes: RWJ denotes optional textbook readings. Please see the Files section of Canvas for lecture notes, topic summaries, and optional readings organized by topic. Dates are approximate.

Tues. 08/30	Topic 1: Introduction and NPV rule RWJ: 4.1	
Thurs. 09/01	Topic 2: Present Value RWJ: 4.2 - 4.4	
Tues. 09/06	Topic 3: Fixed Income Valuation RWJ: 8.1	
Thurs. 09/08	Topic 3: Fixed Income Valuation	PS 1 due
Tues. 09/13	Topic 4: Equity Valuation RWJ: 9.1, 9.2	
Thurs. 09/15	Topic 4: Equity Valuation RWJ 9.3	PS 2 due
Tues. 09/20	Topic 5: NPV vs. IRR RWJ: 5.4, 5.5	
Thurs. 09/22	Topic 5: NPV vs. IRR	PS 3 due
Tues. 09/27	First Midterm	
Thurs. 09/29	Topic 6: Capital Budgeting in Practice RWJ: 6.1–6.5	
Tues. 10/04	No class	
Tues. 10/11	Topic 6: Capital Budgeting in Practice	
Thurs. 10/13	Topic 7: Expected returns and risk RWJ: 10.1–10.6	PS 4 due
Tues. 10/18	Topic 7: Expected return and risk RWJ: 11.2	

Course Schedule (Continued)

Thurs. 10/20	Topic 8: Portfolio Analysis RWJ: 11.3, 11.4	
Tues. 10/25	Topic 8: Portfolio Analysis RWJ: 11.5, 11.6, 11.7	
Thurs. 10/27	Topic 9: Capital Asset Pricing Model RWJ: 11.8, 11.9	PS 5 due
Tues. 11/1	Topic 9: Capital Asset Pricing Model RWJ: 13.1–13.3	
Thurs. 11/3	Topic 10: Market Efficiency (not covered on midterm) RWJ: 14.1–14.4, 14.6	PS 6 due
Tues. 11/8	Second Midterm	
Thurs. 11/10	Topic 11: Capital Structure RWJ: 16.1, 16.3, 16.4	
Tues. 11/15	Topic 11: Capital Structure RWJ: 16.5, 17.1, 17.2, 17.4	
Thurs. 11/17	Topic 12: Valuation and Capital Budgeting with Leverage RWJ: 18.1, 18.3, 18.4	PS 7 due
Tues. 11/22	Topic 12: Valuation and Capital Budgeting with Leverage RWJ: 18.5 – 18.7	
Tues. 11/29	Topic 13: Option Definitions and Strategies RWJ: 22.1–22.4	
Thurs. 12/1	Topic 13: Option Definitions and Strategies RWJ: 22.6	PS 8 due
Tues. 12/6	Topic 14: Option Valuation RWJ: 22.7, 22.8	
Thurs. 12/8	Topic 14: Option Valuation (cont.) RWJ: 22.8	PS 9 due
Tues. 12/13	Computer Assignment due (hand in via Canvas)	
Mon. 12/19	Final Exam from 6–8pm	

Detailed Outline

1. Introduction and Net Present Value (NPV) Rule
 - (a) Present value concepts
 - (b) NPV rule
 - (c) Separation theorem
2. Present Value
 - (a) Simple vs. compound interest
 - (b) Annuities and perpetuities
 - (c) Growing annuities and perpetuities; delayed annuities and perpetuities
 - (d) Compounding within the year and the effective annual interest rate
3. Fixed Income Valuation
 - (a) Bond definitions
 - (b) Valuation of pure discount bonds
 - (c) Yield to maturity vs. holding period return
 - (d) Prices and returns on coupon bonds
 - (e) Semi-annual bonds
 - (f) The yield curve
 - (g) Forward rates
4. Equity Valuation
 - (a) Using present value methods to value equity
 - (b) Applying infinite horizon formulas
 - (c) Determining dividend growth
 - (d) Net present value of growth opportunities
5. NPV vs. Internal Rate of Return
 - (a) Definition of Internal rate of return (IRR)
 - (b) Comparing NPV and IRR: Accept or reject decision
 - (c) Comparing NPV and IRR: Mutually exclusive projects
6. Capital Budgeting in Practice
 - (a) Overview of capital budgeting
 - (b) Depreciation
 - (c) Inflation and capital budgeting
 - (d) Investments of different lives: EAC method
 - (e) Working capital

7. Expected Returns and Risk
 - (a) Return definitions
 - (b) Overview of portfolio theory
 - (c) Mean, standard deviation, and correlation
8. Portfolio Analysis
 - (a) Two risky assets
 - (b) One riskless and one risky asset
 - (c) One riskless and two risky assets
 - (d) The general case: one riskless and multiple risky assets
9. Capital Asset Pricing Model (CAPM)
 - (a) Statement of the CAPM
 - (b) Proof of the CAPM
 - (c) Capital market line vs. Security market line
 - (d) Evidence for and against the CAPM
 - (e) Application to capital budgeting
10. Market Efficiency
 - (a) Efficient markets hypothesis
 - (b) Evidence for and against market efficiency
 - (c) Joint hypothesis problem
11. Capital Structure
 - (a) Preliminaries
 - (b) Modigliani and Miller propositions in a frictionless market
 - (c) Corporate taxes
 - (d) Costs of financial distress
12. Valuation and Capital Budgeting with Leverage
 - (a) Adjusted present value (APV)
 - (b) Unlevering and levering beta
 - (c) Weighted average cost of capital (WACC)
 - (d) APV vs. WACC
13. Option Definitions and Strategies
 - (a) The options contract
 - (b) Payoffs and profits at expiration
 - (c) Option strategies
14. Option Valuation
 - (a) Bounds on option prices prior to expiration
 - (b) Factors affecting option prices
 - (c) Put-call parity
 - (d) The Black-Scholes formula