

**Corporate Finance (Honors)**  
Finance 100  
Sections 301 and 302  
The Wharton School, University of Pennsylvania  
Fall 2014

---

**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](mailto:jwachter@wharton.upenn.edu)

**Teaching Assistants**

Ben Biran  
Email: [benbiran@wharton.upenn.edu](mailto:benbiran@wharton.upenn.edu)

Karen Sun  
Email: [karensun@wharton.upenn.edu](mailto:karensun@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.  
There is a special edition that includes only chapters we use in the course that is a bit cheaper than the entire text.
- 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 (25% for the first and second, 30% for the third), the problem sets (10%) and on the final project (10%). The second and third midterms will integrate material from earlier in the class. 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 third. final. Class participation can help determine the grade if the student is on the margin between grades.

Exam Schedule:

- Midterm Exam 1: Wednesday, September 24, in class.
- Midterm Exam 2: Wednesday, October 22, in class.
- Midterm Exam 3: Monday, November 24, in class.

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: Wednesdays 3:45 - 4:45 in SHDH 2459

Note: It is my policy not to answer questions about problem sets before they are due. Please look at the solutions before asking questions about a problem set after it is due, since you may find the answer to your question there.

Ben Biran: Mondays 4:30 - 6:00 in the Finance Department TA cubicles (SHDH 2305)

Karen Sun: Fridays 1:30 - 3:00 in the Finance Department TA cubicles (SHDH 2305)

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.

---

Wed. 08/27	Topic 01: Introduction and NPV rule RWJ: [1–3], 4.1	
Wed. 09/03	Topic 02: Present Value RWJ: 4.2 - 4.4 [4.5, 4.6]	
Mon. 09/08	Topic 02: Present Value (cont.)	
Wed. 09/10	Topic 03: Fixed Income Valuation RWJ: [8]	PS 1 due
Mon. 09/15	Topic 03: Fixed Income Valuation (cont.)	
Wed. 09/17	Topic 04: Equity Valuation RWJ: 9.1, 9.2	PS 2 due
Mon. 09/22	Topic 04: Equity Valuation (cont.) RWJ: 9.3, [9.4, 9.5]	
Wed. 09/24	Midterm I	
Mon. 09/29	Topic 05: NPV vs. Internal Rate of Return RWJ 5.1, 5.4, 5.5, [5.7]	
Wed. 10/01	Topic 06: Capital Budgeting in Practice RWJ: 6.1–6.5	
Mon. 10/06	Topic 06: Capital Budgeting in Practice (cont.)	
Wed. 10/08	Topic 07: Expected Returns and Risk RWJ: 10.1–10.6, [10.7, 10.8]	PS 3 due
Mon. 10/13	Topic 08: Portfolio Analysis RWJ: 11.3–11.5	
Wed. 10/15	Topic 08: Portfolio Analysis (cont.) RWJ: 11.6, 11.7	PS 4 due
Mon. 10/20	Topic 08: Portfolio Analysis (cont.)	
Wed. 10/22	Midterm II	

---

## Course Schedule (Continued)

---

Mon. 10/27	Topic 09: Capital Asset Pricing Model RWJ: 11.8, 11.9	
Wed. 10/29	Topic 09: Capital Asset Pricing Model (cont.) RWJ: 13.1–13.4	
Mon. 11/03	Topic 10: Market Efficiency RWJ: 14.1–14.4, [14.5], 14.6, [14.7–14.8]	
Wed. 11/05	Topic 11: Capital Structure RWJ: 16.1, [16.2], 16.3, 16.4	PS 5 due
Mon. 11/10	Topic 11: Capital Structure (cont.) RWJ: 16.5, 17.1, 17.2, 17.4, [17.5–17.10]	
Wed. 11/12	Topic 12: Valuation and Capital Budgeting with Leverage RWJ: 18.1, [18.2], 18.3–18.7	PS 6 due
Mon. 11/17	Topic 12: Valuation and Capital Budgeting with Leverage (cont.)	
Wed. 11/19	Catch-up and Review	
Mon. 11/24	Midterm III	
Mon. 12/1	Topic 13: Option Definitions and Strategies RWJ: 22.1–22.4, [22.5], 22.6	
Wed. 12/3	Topic 14: Option Valuation RWJ: 22.7, 22.8, [22.9–22.10]	
Mon. 12/8	Topic 14: Option Valuation (cont.)	
Thur. 12/11	Final Project due at 5pm	

---

## 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