

The Wharton School
University of Pennsylvania

FUNDING INVESTMENTS

FNCE 738/238 Fall 2004

Professor Gary Gorton

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- **Overview:** This course is about the design, pricing, and trading of corporate securities, particularly fixed income securities, equity-linked bonds, and structured products such as asset-backed securities, credit derivatives, and collateralized debt obligations. Basic tools such as swaps and options are studied and used to address security design, trading, and pricing questions. Other topics covered include distressed workouts, bankruptcy restructuring, and tax arbitrage.
 - **Goal of Course:** The goal of this course is to introduce ways of thinking about fixed income and structured product markets from practical and conceptual points of view. The idea is to think seriously about designing financial products. The goal is NOT to prepare for your first day on the job, but to provide a set of tools, concepts, and ideas that will serve you over the course of a career.
 - **Level of Course:** This is an upper level elective finance course, not an introductory course. The course is not designed for all students; it is aimed at students who want to be finance professionals.
 - **Prerequisites:** A thorough knowledge of FNCE 601, basic statistics (e.g., regression analysis, conditional probability), basic mathematics (e.g., algebra, matrix algebra) and a working knowledge of a spreadsheet package are required.
 - **Course Materials:** Required: Bulk Pack. Recommended Texts: Financial Markets Rates and Flows, by James C. Van Horne; and Principles of Finance, by R. Brealey and S. Myers. (Any other introductory text is acceptable in place of Brealey and Myers.)
 - **WebCafe:** The webcafe for FNCE 738 and FNCE 238 can be found at:

<http://webcafe.wharton.upenn.edu/eRoom/fnce/738-fa04-1>

- **Course Mechanics:** Lecture format with class discussion of cases. Class participation is encouraged and can affect (positively or negatively) your grade at the margin.
- **Workload:** Intensive. There are 6 cases and 10 homework problems. The readings, cases, and homework require roughly 12-15 hours per week. Homework is **not** graded, but is preparation for exams. Cases are graded. All cases are due at the beginning of class on the date indicated on the course schedule.
- **Groups:** Cases (and homework problems, if you choose) are to be done in groups of three, four, or five students. There are no exceptions. Once formed, groups cannot be changed during the semester.

- **Cases and Homework:** Do all cases and homework on your own, from scratch. You are **not** to use other students' attempts as your starting point. **Answers to cases are not handed out.** Homework problems are not graded, but are preparation for exams. Answers are provided.
- **Rules:** With regard to homework, cases and exams of this course, you should **not** consult any material from previous years or from other courses. All cases and (if you wish) homework problems are to be done by your group. Only the old exams supplied in the bulk pack should be consulted in preparation for exams in this course.
- **Office Hours:** The course is designed so that you are forced to learn the material on your own. There is no private tutoring. The week before each exam there will be limited office hours for answering specific questions. If you miss a lecture, it is up to you to learn the material – material is not reviewed during office hours.
- **Typos:** There are invariably typos in the bulk pack. From year to year these are corrected, but material is also changed from year to year, resulting in new typos. If you find typos, please send me an email so that I can correct it for next year. I will announce serious typos.
- **Grades:** Case write-ups count 33.3%; two mid-term exams, each one counts 33.3%. **No make-up exams are given.** There is no final exam.
- **Readings:** You are responsible for **all** the readings in the bulk pack. I may deviate from the lecture notes in the bulk pack, or I may not finish all the material in a lecture note. But, you are still responsible for that material.
- **Handout Fees:** You will be charged a fee for any handouts (but I don't expect there will be much).

Schematic Outline of the Course

Part 1: Tools

1. Basic Fixed Income Mathematics
2. Interest Rate Swaps
3. Introductory Options

Part 2: Understand and Pricing Corporate Securities

1. Option Pricing and Corporate Securities
2. Designing Corporate Securities
3. Callable Bonds
4. Convertible Bonds

Part 3: Understanding and Pricing Credit Risk

1. Bond Ratings and Credit Spreads
2. Pricing Default Risk
3. Credit Derivatives
4. Financial Distress: Exchange Offers and Consent Solicitations
5. Chapter 11 and Workouts

Part 4: Introduction to Structured Finance

1. Securitization 1: Pooling of Cash Flows
2. Securitization 2: Tranching

Part 5: Tax Arbitrage, Hybrid Securities, and Financial Engineering

Designing securities to minimize taxes.

Course Topics, Readings, and Schedule

1. Sept. 9, Thursday: Introduction

Brealy and Myers, Chapter 24, “The Many Different Kinds of Debt”

2. Sept. 14, Tuesday: Bond Prices, Yields, and the Term Structure

Van Horne, Chapter 4, “Prices and Yields for Bonds and Money Market Instruments”

Van Horne, Chapter 6, “The Term Structure of Interest Rates”

Van Horne, Chapter 7, “Price Volatility, Coupon Rate, and Maturity”

HBS, “The U.S. Debt Market and the Structure of Interest Rates”

HBS, “Bond Math”

3. Sept. 16, Thursday: No Class

4. Sept. 21, Tuesday: Swaps

Van Horne, Chapter 11, “Derivative Securities: Swaps”

5. Sept. 23, Thursday: Case #1: Arbitrage in Government Bond Markets Case write-up due at the beginning of class.

6. Sept. 28, Tuesday: Introduction to Options

Brealy and Myers, Chapter 20, “Corporate Liabilities and the Valuation of Options”

Van Horne, Chapter 10, “Derivative Securities: Options”

Garbade, “Options and Related Securities”

Garbade, “Equilibrium Call Option Prices”

7. Sept. 30, Thursday: Option Pricing and Corporate Securities

Garbade, “Equilibrium Price of Risky Debt”

8. Oct. 5, Tuesday: Case #2: Coca Cola Harmless Warrants Case write-up due at the beginning of class.

9. Oct. 7, Thursday: Bond Design

FitchIBCA, “Loan Preserver: The Value of Covenants”

Pratt and Livingston, “Effects of Super Poison-Put Clauses on Industrial Debt”

Laber, “Bond Covenants and Forgone Opportunities: The Case of Burlington Northern Railroad”

Altman and Eberhart, “Do Seniority Provisions Protect Bondholders’ Investments?”

10. Oct. 12, Tuesday: Callable Bonds/Swaptions

Crabbe, “Callable Corporate Bonds: A Vanishing Breed”

11. Oct. 14, Tuesday: Convertible Bonds

Brealy and Myers, Chapter 22, “Warrants and Convertibles”
 Brennan and Schwartz, “The Case for Convertibles”
 HBS, “Convertible Securities”

12. Oct. 19, Thursday: Case #3: Avon Products
Case write-up due at the beginning of class.

Arzac, “Percs, Decs, and other Mandatory Convertibles”

13. Oct. 21, Thursday: In-Class Mid-term Examination

14. Oct. 26, Tuesday: No Class: Fall Break

15. Oct. 28, Thursday: Bond Ratings and Credit Spreads

Brealy and Myers, p. 662-666.
 Cantor and Packer, “The Credit Rating Industry”

16. Nov. 2, Tuesday: Case #4: Marriott Corporation-Restructuring
Case write-up due at the beginning of class.

Mitchell, “Marriott Plan Enrages Holders of Its Bonds”

17. Nov. 4, Thursday: Pricing Default Risk

Brealy and Myers, p. 667-670.
 Fons, “Using Default Rates to Model the Term Structure of Credit Risk”

18. Nov. 9, Tuesday: Credit Derivatives

Chisese, “Understanding the Latest Credit Derivative Products”
 HBS, “An Overview of Credit Derivatives”

19. Nov. 11, Thursday: Exchange Offers and Consent Solicitations

Fridson, “Coercive Exchange Offers”

20. Nov. 16, Tuesday: Chapter 11 and Workouts

HBS, “Note on Bankruptcy in the United States” (9-292-062)
 Goad, et. al., “Debts to Society”
 Gilson, “Managing Default: Some Evidence on How Firms Choose Between Workouts and Chapter 11”
 Eberhart and Weiss, “The Importance of Deviations from the Absolute Priority Rule in Chapter 11 Bankruptcy Proceedings”
 Keenan, “Picking Up the Pieces”
 S&P, “Recovering Your Money: Insights into Losses from Defaults”
 Moody’s, “Debt Recoveries for Corporate Bankruptcies”

21. Nov. 18, Thursday: Case #5: Marvel Comics

Case write-up due at the beginning of class.

22. Nov. 23: Tuesday: Securitization 1 – Pooling Cash Flows

FitchIBCA, “ABCs of Credit Card ABS”

Howard, “Credit Card ABS”

23. Nov. 25, Thursday: No Class -Thanksgiving

24. Nov. 30, Tuesday: Securitization 2 -- Tranching

25. Dec. 2, Thursday: Tax Arbitrage and Hybrid Securities

HBS, “Debt v. Equity: Definitions and Consequences”

Novack and Saunders, “The Hustling of X-Rated Tax Shelters”

Van Horne, Chapter 15, “The Influence of Taxes”

Levy, “Taxation of Securities: An Overview”

Sheppard, “Sand Castles of Debt Classification”

26. Dec. 7, Tuesday: In-Class Mid-term Examination

27. Dec. 9, Thursday: Case #6 Due (Times Mirror PEPS)

PEPS Case write-up due at the beginning of class.