

NEW YORK UNIVERSITY STERN SCHOOL OF BUSINESS

**Debt Instruments and Markets**  
Syllabus for C15.0026.01, Spring 2009

**Professor Jennifer N. Carpenter**

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**Course Description**

The goals of this course are to describe important fixed income securities and markets, and develop tools for valuing fixed income securities and managing interest rate risk. The course covers traditional bonds and term structure concepts as well as fixed income derivatives and interest rate modeling.

**Tentative Schedule of Lectures**

Jan 20 Zeroes and coupon bonds  
Jan 22 Zero rates and rate of return  
Jan 27 Rate of return and yield to maturity  
Jan 29 Yield to maturity  
Feb 3 Forward contracts  
Feb 5 Forward rates  
Feb 10 Duration  
Feb 12 Duration  
Feb 17 Convexity  
Feb 19 Floating rate notes and Swaps  
Feb 24 No arbitrage pricing  
Feb 26 Risk-neutral probabilities  
Mar 3 Dynamic trading strategies  
Mar 5 Midterm  
Mar 10 Interest rate models  
Mar 12 Hedging  
Mar 24 Options  
Mar 26 American options  
Mar 31 Callable bonds  
Apr 2 More on callable bonds  
Apr 7 Swaptions  
Apr 9 Introduction to credit risk  
Apr 14 Mortgage-backed securities  
Apr 16 IOs and POs  
Apr 21 CMOs  
Apr 23 Futures  
Apr 28 Futures  
Apr 30 Caps, floors, and collars  
  
May 12 Final Exam 2:00-3:50 PM

## **Warning**

The study of fixed income securities is quantitative by nature and the material in this course is very technical. Students should have a background in basic finance and should be comfortable using math and working with numbers. Please keep this in mind in deciding whether to take the course.

## **Course Materials**

### Required

Lecture notes and problem sets

### Recommended

Bruce Tuckman, *Fixed Income Securities*, Wiley, 2002, 2<sup>nd</sup> ed.

## **Course Requirements**

Grades will be based on the following.

Class Participation (5%)

Problem Sets (5%)

Midterm (40%)

Final (50%)

### Problem Sets

Because the material is analytical and new concepts build on old ones, it will be essential to do the problem sets in order to follow the lectures and succeed on the exams. To facilitate learning, I encourage students to work together on these problem sets. Groups of students working together should submit just one assignment. All students in the same group will get the same grade. I will not accept late assignments.

### Exams

Please bring a financial calculator, one 8.5x11 inch page of notes (both sides) for the midterm, and two 8.5x11 inch pages of notes for the final.

You must take each of your exams as scheduled. Otherwise, with the following two exceptions, your grade for the exam will be zero.

- 1) In case of a legitimate, foreseeable conflict, in order to take the exam at a different time, you must make a request in writing or by email at least one week prior to the exam, and obtain my written or email permission prior to the exam.
- 2) In case of an emergency, you must provide formal, written verification, such as a letter from a doctor.