

NEW YORK UNIVERSITY STERN SCHOOL OF BUSINESS

Debt Instruments and Markets

Syllabus for FINC-UB 26 Fall 2019

Tuesday-Thursday 3:30-4:45

Professor Jennifer N. Carpenter

After class or by appointment

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Course Description

This course describes important debt instruments and markets in the US and China and develops analytical methods for pricing and hedging bonds and fixed income derivatives, and for managing and evaluating bond portfolio performance.

Tentative Schedule of Lectures

Sep 3 Overview of Debt Markets in the US and China

Sep 5 Coupon Bonds and Zeroes

Sep 10 Yield to Maturity

Sep 12 Duration

Sep 17 Immunization

Sep 19 Convexity

Sep 24 Rate of Return vs. Yield

Sep 26 Forward Contracts

Oct 1 Forward Rates

Oct 3 Repos and Floating Rate Notes

Oct 10 Interest Rate Swaps

Oct 15 Review Session

Oct 17 Midterm

Oct 22 Introduction to Fixed Income Portfolio Management

Oct 24 Level and Slope Factors in Bond Returns: Evidence from the US and China

Oct 29 Factor-Based Bond Portfolio Performance Evaluation: Evidence from US ETFs

Oct 31 Bonds with Embedded Options

Nov 5 Option Pricing by Replication

Nov 7 Pricing Multi-Period Options with Dynamic Trading Strategies

Nov 12 Fixed Income Option Models

Nov 14 American Options and Callable Bonds

Nov 19 Swaptions

Nov 21 The US Mortgage Market

Nov 26 Mortgage-Backed Securities: Passthroughs

Dec 3 Mortgage-Backed Securities: CMOs

Dec 5 Caps, Floors, and Collars

Dec 10 Distinguished Industry Expert Speakers

Dec 12 Review Session

Dec 19 Final Exam 4:00-5:50 PM – to be confirmed

Course Materials

Required: Lecture notes and problem sets

Optional: B. Tuckman and A. Serrat, *Fixed Income Securities*, Wiley, 2012, 3rd ed.

Course Requirements

Grades will be based on the following.

Class Participation (5%)

Problem Sets (5%)

Midterm (40%)

Final (50%)

Exams

Closed note, closed book. Please bring a calculator.

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.

Bi-Weekly Problem Sets

Because the material is technical 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. I cannot accept late assignments.

TA Office Hours

My TA, Tianrui Xu, will hold office hours on Mondays before problem set due dates at 5-5:50 PM in a room TBA. I encourage students to make the most of this opportunity to work together and get regular help and feedback.

Warning

The study of fixed income securities is quantitative by nature and this course will be taught very rigorously.

Course Evaluations

Course Evaluations will be open from Sunday, December 1 at 12 a.m. to Sunday, December 15 at 11:59 p.m.

Grading

At NYU Stern, we strive to create courses that challenge students intellectually and that meet the Stern standards of academic excellence. To ensure fairness and clarity of grading, the Stern faculty have agreed that for elective courses the individual instructor or department is responsible for determining reasonable grading guidelines.

The Finance Department has elected to use the following grading guidelines for this course and all other elective courses. Instructors should award grades of “A” or “A-” to approximately 35% of students in elective courses with enrollments of more than 25 students. In elective classes of less than 25 students, the instructor is at liberty to give whatever grades they think the students deserve, while maintaining rigorous academic standards.

Academic Integrity

Integrity is critical to the learning process and to all that we do here at NYU Stern. As members of our community, all students agree to abide by the NYU Stern Student Code of Conduct, which includes a commitment to:

- Exercise integrity in all aspects of one's academic work including, but not limited to, the preparation and completion of exams, papers and all other course requirements by not engaging in any method or means that provides an unfair advantage.
- Clearly acknowledge the work and efforts of others when submitting written work as one's own. Ideas, data, direct quotations (which should be designated with quotation marks), paraphrasing, creative expression, or any other incorporation of the work of others should be fully referenced.
- Refrain from behaving in ways that knowingly support, assist, or in any way attempt to enable another person to engage in any violation of the Code of Conduct. Our support also includes reporting any observed violations of this Code of Conduct or other School and University policies that are deemed to adversely affect the NYU Stern community.

The entire Stern Student Code of Conduct applies to all students enrolled in Stern courses and can be found here: www.stern.nyu.edu/uc/codeofconduct

General Conduct & Behavior

Students are also expected to maintain and abide by the highest standards of professional conduct and behavior. Please familiarize yourself with Stern's Policy in Regard to In-Class Behavior & Expectations (<http://www.stern.nyu.edu/portal-partners/current-students/undergraduate/resources-policies/academic-policies/index.htm>) and the NYU Disruptive Behavior Policy (<http://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/bullying--threatening--and-other-disruptive-behavior-guidelines.html>).

Students with Disabilities

If you have a qualified disability and will require academic accommodation of any kind during this course, you must notify me at the beginning of the course and provide a letter from the Moses Center for Students with Disabilities (CSD, 998-4980, www.nyu.edu/csd) verifying your registration and outlining the accommodations they recommend. If you will need to take an exam at the CSD, you must submit a completed Exam Accommodations Form to them at least one week prior to the scheduled exam time to be guaranteed accommodation.