

FNCE 235/725: Fixed Income Securities

Fall 2012

Syllabus ***Tentative***

Instructor

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Course Description

The course covers the valuation of a wide variety of fixed income securities and derivatives including discount bonds, coupon bonds, forwards and options on fixed income securities, interest rate swaps, floating rate notes and mortgages. The course focuses on analytic tools used in bond portfolio management and interest rate risk management. These tools include yield curve construction, duration and convexity, and formal term structure models.

Among topics not covered in the course are the relation between macroeconomic variables and interest rates, taxes, multi-factor models of the term structure, and credit risk.

Prerequisites

Students must have taken introductory corporate finance and statistics.

FNCE 235: FNCE 100 and STAT 101

FNCE 725: FNCE 601 and STAT 621

Corequisite

FNCE 235: FNCE 101

Materials

1. The course pack contains lecture notes and is available on the *canvas* website. Physical copies can also be purchased from study.net. The course pack was created by Prof. Michael Gibbons during the many years he taught this course. We will follow it closely. See course schedule below for outline of the chapters we will cover.

As lectures will be following the notes in the course pack, you will need to bring the

relevant chapters of the course pack to class. Additional handouts will be distributed during the course via *canvas* as necessary.

2. There is a supplementary textbook, available at the bookstore:

Pietro Veronesi, 2009. Fixed Income Securities: Valuation, Risk, and Risk Management

This is a new textbook, and its way of presenting the material differs somewhat from the way it is done in the course. Although students are not responsible directly for the material in this book that is not covered explicitly in class, it is very helpful in mastering the material and solving homework/exam problems, as well as a general reference on the subject.

3. Announcements, problem sets, solutions, and other materials will be posted on the course *canvas* website. Note that Wharton computing accounts are required in order to access *canvas*. Enrolled non-Wharton students may obtain an account starting on the first day of the class at:

<http://accounts.wharton.upenn.edu>

Special Drop/Add Dates for Undergraduates

The Finance Departments Drop and Add Deadlines are different than the University's. It is September 20th, 2012 and it only applies to undergraduates.

Should you decide to drop this course, you must do so through Penn In Touch by the Finance Departments drop deadline.

Those who decide to add the course after the drop deadline above need to see Andrea Rollins in the Finance department.

Requirements

1. There are three exams given in class (see Schedule for the dates). The first and second exams are each worth 30% of the final grade and the third is worth 40%. They are discussed in more detail later in the syllabus.

2. Problem sets will be assigned on a near-weekly basis. They are discussed in more detail later in the syllabus. A student whose final score is just below the margin between two letter grades may have their grade adjusted upward based on their work in problem sets and class participation. No student will have their grade adjusted downward based on problem sets and class participation.

3. Students are expected to complete the required readings listed in the course pack for each lecture.

Attendance and Class Participation

1. Attendance at lectures is encouraged but optional. The background of each student in the course differs, and I provide a few sessions that may be viewed by some students as review material. For most lectures, the course pack contains a preface which should help you decide whether you know the material.

2. You must attend the lecture for the section for which you are registered. There are too many students in each section to allow students to move around.
3. During class I encourage you to ask questions. Questions from you help me better judge how the class is absorbing the material.
4. To make it easier for me to get to know you, please sit in the same seat at each class session (this will take some time to work out, with drops and adds). Please bring a name plate to class.
5. Eating and drinking are allowed until further notice. No laptops.

Problem Sets

Many problem sets will be assigned during the semester. For all of the problem sets you may work with other students in the class. You are to turn in your answers *before* class begins. Late answers will not be accepted.

A team of people need only submit one copy of their solution for a particular problem set. Every member of the team will receive the same grade. No team may have more than five students.

Solutions to each problem set will be available after your answers have been turned in. Your graded answers will be returned to a file cabinet in the Finance Department in Steinberg-Dietrich Hall. The problem sets will be graded by giving a “check-plus”, “check,” “check-minus,” or “no credit.” Most of the questions on the problem sets will not be discussed in class. Office hours will handle questions about the problem sets.

The main purpose of the problem sets is to increase your understanding of the material and help you prepare for the exam.

Examinations

There will be three in-class examinations during the semester. The (tentative) dates are listed on the course schedule. They will be closed-book. For the first exam, you may bring an 8 $\frac{1}{2}$ x 11 piece of paper of notes. You may write on both sides. For the second and third exams, you may bring two such pieces of paper. The second exam concentrates on material taught since the first exam, but material presented earlier may also appear on this exam. The same is true for the third exam. You may bring a calculator to each exam, but not a computer.

There are no makeup exams for exam one or exam two. If a student is unable to take the first exam, it will be skipped, and exam three will be worth 70% of the student’s grade. If a student is unable to take the second exam, again, exam three will be worth 70% of the student’s grade. If a student is unable to take the first and the second exam, then exam three will be worth 100% of the student’s grade.

Following university rules, exam three may be postponed because of illness, a death in the family, or some other unusual event. If such a circumstance arises, undergraduates must petition their dean’s office for a makeup exam. MBA students must petition the MBA Program Office.

Since the drop deadline is before the first midterm exam, I will sign any student’s withdrawal form who contacts me on or before Oct 9th to withdraw.

Course Schedule (preliminary and subject to change)

Class	Date	Topic (Chapters refer to the course pack)
1	Aug 29	Ch 3: Overview of Fixed Income Securities Ch 4: The Grammar of Fixed Income Securities
2	Sept 3	Ch 5: Data for a Recurring Illustration Ch 6: Bond Valuation Using Synthetics
3	Sept 5	Ch 7: Interpreting Bond Yields
4	Sept 10	Ch 8: Bond Values and the Passage of Time Ch 9: Forward Contracts
5	Sept 12	Ch 10: Dollar Delta 1: Risk Measurement Ch 11: Dollar Delta 2: Risk Management
6	Sept 17	Ch 12: Dollar Gamma Ch 13: Delta, Gamma, and Theta
7	Sept 19	Problem Solving
8	Sept 24	Exam 1 Review
9	Sept 26	Exam 1
10	Oct 1	Ch 15: Vasicek 1: Properties of the Short-Term Rate
11	Oct 3	Ch 16: Vasicek 2: The Term Structure
12	Oct 8	Ch 17: Vasicek 3: More Term Structure
13	Oct 15	Ch 18: Vasicek 4: The Greeks
14	Oct 17	Ch 19: Valuation by Monte Carlo Methods
15	Oct 22	Ch 20: Introduction to Bond Options
16	Oct 24	Ch 21: European Bond Options Ch 22: American Bond Options
17	Oct 29	Problem Solving
18	Oct 31	Exam 2 Review
19	Nov 5	Exam 2
20	Nov 7	Break
21	Nov 12 (10)	Ch 23: Deja Vu Ch 24: Bonds with Embedded Options 1
22	Nov 14	Ch 25: Bonds with Embedded Options 2
23	Nov 19 (10)	Ch 26: Floating Rate Notes Ch 27: Interest Rate Swaps
24	Nov 21 (10-15)	Ch 28: Options on Yields Ch 29: Floating Rate Notes with Embedded Options
25	Nov 26	Ch 30: Home Mortgages
26	Dec 3	Problem Solving
27	Dec 5	Exam 3 Review
28	Dec 10	Exam 3