

## Course Syllabus

### Instructor Information:

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Class Room/Time: STZ 103/ MW Periods 3 and 4

### Course Objectives and Description

Debt and Money Markets (also sometimes referred to as Fixed Income Markets) play a critical role in modern finance. For examples of recent important events involving these markets and their impact on the overall economy, students are strongly encouraged to read the following articles prior to the start of the course:

- The rotten heart of finance, published in *The Economist*, July 07, 2012:  
<http://www.economist.com/node/21558281>
- LIBOR scandal: Yep, It's as Bad as We Thought, published in *Time*, December 20, 2012:  
<http://business.time.com/2012/12/20/libor-scandal-yep-its-as-bad-as-we-thought/#ixzz2GMlJbblk>

This 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. A list of topics covered in this course is provided in the tentative course outline below.

### Course Pre-requisites

Fixed-income security analysis by its nature is mathematical. Students should have a solid background in basic finance concepts and also knowledge of college-level calculus in order to understand pricing and hedging formula of interest-rate derivatives. The material in this course is very technical. Please keep this in mind when deciding whether to take the course.

**Textbook material**

No textbook is required for this course and lecture notes will be posted online (Sakai). However, for those students interested in reference textbooks, the following are recommended. The first (by Fabozzi) is a classic and is less mathematical than the second (by Veronesi). However, the latter contains more institutional details and provides a richer perspective on the 2008 financial crisis.

**Recommended Textbooks**

- Text 1: Frank Fabozzi, *“Bond Market: Analysis and Strategies,” Eighth Edition*, Prentice Hall.
- Text 2: Pietro Veronesi, *“Fixed-Income Securities: Valuation, Risk and Risk Management”*, Wiley.

**Class Format**

This course will mainly use the lecture method of instruction. The lectures, supplemented by notes, examples and assignments are intended to familiarize students with the basic concepts, quantitative techniques, pricing, and institutional details necessary for making decisions involving fixed-income instruments.

**Assessment and Course Grade**

There will be assignments throughout the semester and students may work on these in groups. The purpose of these assignments is to help you better understand the material presented during lecture and you are strongly encouraged to work on them individually, or at least participate fully in your group discussions. These assignments will be made based on our progress through the course topics.

Additionally, there will be a mid-term exam and a final exam. The maximum score for a given assignment, the mid-term exam, or the final exam is 100. A student’s final score is the weighted sum of three evaluation scores, where the weights are 15% (average of the assignment scores), 35% (mid-term exam), and 45% (final exam), together with class participation and attendance, which contribute 5%.

Final course grades will be based on the following numeric scale indicating the number of total points (out of 100) needed to achieve each letter grade

Minimum Points	Course Grade
90	A
87	A-
84	B+
80	B
77	B-

74	C+
70	C
67	C-
64	D+
60	D
57	D-

### Note UF grading policy and GPA

A = 4.0; A- = 3.67; B+ = 3.33; B = 3.0; B- = 2.67; C+ = 2.33; C = 2.0, C- = 1.67;  
D+ = 1.67; D = 1.0; D- = 0.67

### Assignments

The assignment will consist of either several end-of-chapter problems (problem sets), case or computer assignments (using EXCEL.) These assignments should be treated as equivalent to take-home exams. The report should be typed. **Late report will incur a significant penalty and any assignment that is more than two days late will not be accepted.**

### Midterm and Final Exam

The exams will be closed book, but you will be allowed to bring one 8.5in by 11in sheet with formulas and other useful information. You can use both sides and you can handwrite or type. The exams will consist of numerical and qualitative conceptual questions. The questions will be similar to the problems discussed in class, assignments submitted, and the sample exams, though not exactly the same. You should therefore be prepared to be challenged and think of new ways of approaching some questions.

### Attendance and Make-up Policy

Attendance is mandatory. Each unexcused absence will result in a point penalty. Further, if you have an unexcused absence on an exam date, the quiz will be scored as a zero. An absence from class or missing a quiz is considered excused only if there is an acceptable reason according to UF guidelines, such as an unexpected medical situation, religious holidays, etc. The UF guidelines are here:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>. According to the policy, it is the student's responsibility to notify me of an excused absence and provide documentation in a timely fashion.

### Class Participation and Attendance

For each class, students should read the assigned chapters and also attempt the problem(s) that are given. Working in groups to solve the assigned problems is allowed. It is highly recommended that students ask questions and actively participate in the class.

**Note Regarding In-Class Distractions**

Out of respect for fellow students, it is requested that all cell-phones, pagers, beepers, alarms, etc. be switched off or silenced before the beginning of each class. Also, you should not use your computer unless we are working on a problem or project that requires the use of the computer. You should bring your laptop to class.

**Students with Disabilities**

Students requesting testing accommodations must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodations. Please note that the Dean of Students Office requires a 7-10 day lead time to process your request after they receive the form back from you. More information is available on the DRC website, <http://www.dso.ufl.edu/drc/>.

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## **Tentative Schedule of Topics (Preliminary and subject to change)**

- **Traditional tools for fixed-income valuation and risk management:**
  - Overview of fixed-income securities
  - Bond values and the passage of time
  - Interpreting bond yields
  - Bond valuation using synthetics
  - Forward contracts
  - Interest-rate risk management: the Delta, Gamma, and Theta approaches
  
- **Term-structure of interest rates:**
  - Vasicek model,
  - The Greeks in the Vasicek model
  - Binomial trees
  
- **Mid-Term Exam** (in class)
  
- **Interest-rate derivatives:**
  - European and American Bond Options
  - Bonds with Embedded Options
  - Floating-Rate Securities
  - Interest-rate Swaps
  - Options on Yields
  - Floating Rate Notes with Embedded Options
  
- **Home Mortgages:**
  - Overview of Credit Default Risk
  
- **Final Exam**  
(In class and to be held on date scheduled by registrar)  
\*\*\* NO make-up date allowed \*\*\*