CALIFORNIA POLYTECHNIC STATE UNIVERSITY
ORFALEA COLLEGE OF BUSINESS

FIXED INCOME SECURITIES AND MARKETS

BUS439
Fall 2013

SECTION 1&2, Room 03-302
Tues. & Thurs. 9-11 & 2-4

Instructor: Mahdi Rastad  (http://www.cob.calpoly.edu/faculty/mahdi-rastad/)
Office Location: 03 – 321
Office Hours: Tuesdays and Thursdays: 12-1 or by appointment
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Email: mrastad@calpoly.edu
Prerequisite: BUS342

COURSE OBJECTIVE

Students passing this course will learn:

• Features of fixed-income securities
• Techniques to value different types of fixed income securities
• How to estimate yield curves, spot rates and forward rates and incorporate in valuation process
• Theories of interest rate term structure and their implications
• Strategies to manage credit and interest rate risks
• How to manage risks associated with bond portfolio investment
• To generate creative and practical solutions by applying decision tools and research methodology

BRIEF COURSE DESCRIPTION

The course provides an opportunity for students to gain a deep understanding of the growing field of fixed income securities. The course reviews theoretical and practical contributions to the field of fixed income securities in the following areas: debt instruments, fixed income securities markets, techniques to value default-free and defaultable debt securities with or without embedded options, measuring and managing risks associated with investing in fixed income securities, with emphasis on the analysis of interest rate and credit risks. This is a required course for finance concentration and provides the foundation for higher-level required and elective finance courses.
COURSE METHODS

The course involves a combination of teaching and learning methods:
1. Readings of textbook to preview concepts and establish advanced terminology (mandatory)
2. Pre-class online quizzes covering the reading assignments and other materials
3. Short lectures to review specific concepts and the toolbox of fixed income securities
4. In-class problems (labs) to be solved in groups
5. Mini-presentations on current financial and economic issues
6. Excel workshops as an application of the skills learned in the course toward real world problems using spreadsheet environment
7. Two midterms and a final exam

TEXT and MATERIALS

Required Textbook


Recommended Textbooks

*Interest Rate and Credit Risk Derivatives* by Peter Ritchken of Case Western Reserve University. This is a yet-to-be-published book which will be available through PolyLearn.


Other Readings

I also strongly recommend that you subscribe to a financial newspaper such as the *Wall Street Journal* and its CFO Journal section. Other good examples are Business and Deal Book sections of NY Times, Economist, and APM Marketplace podcast.

Mini-presentations

Each student is required to form a group of 3 to 4 to make a brief presentation. The presentation is limited to no more than 10 minutes per team. The topic must be a current event relating to the subject matter of the course. Typically your presentation will be based on an *analytical* article from a current business publication. Please verify with me if your proposed topic meets the above criterion. You are required to provide a hard copy of the reference you are using for presentation to me on the day of presentation.

IMPORTANT DATES

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>September 29</td>
<td>Deadline to Schedule Your Presentation</td>
</tr>
<tr>
<td>October 17</td>
<td>First Midterm</td>
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<tr>
<td>November 14</td>
<td>Second Midterm</td>
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<tr>
<td>December 10</td>
<td>Final Exam</td>
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GRADING POLICY

<table>
<thead>
<tr>
<th>Assignment Type</th>
<th>Percentage</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Assignments</td>
<td>20%</td>
<td>Pre-class quizzes and post-class homework</td>
</tr>
<tr>
<td>Mini-presentations</td>
<td>10%</td>
<td>Group presentation on a related current topic</td>
</tr>
<tr>
<td>First Midterm Exam</td>
<td>20%</td>
<td>Covers topics 0, 1 and 2</td>
</tr>
<tr>
<td>Second Midterm Exam</td>
<td>20%</td>
<td>Covers topics 3, 4 and 5 (non-cumulative)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>30%</td>
<td>Covers everything (cumulative)</td>
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All submissions for the assignments must be done online thorough the PolyLearn.

Grading and Regrading
I follow Finance area guidelines for grading (see below). There will be no makeup exam and no partial grading for this course, i.e., only final answer matters. Please note that to get a full credit for quantitative multiple choice questions you need to show your work; guessing does not help. If you think there has been an error regarding your grade, you may submit a written grade appeal within a week after the grades are posted. An appeal will involve regarding the whole exam, and may lead to both a lower or higher grade.

Area Grading Policy
The finance area currently uses a standardized grading policy for all finance classes. That is, the proportion of A’s, B’s, C’s, etc. must adhere to general guidelines. Specifically, the policy is:

- A’s Maximum of 25%
- C’s Range of 20% to 40%
- D’s and F’s combined: Expected minimum of 10%, but could be 0%.

The policy is employed to insure that (i) the grade of A is reserved for outstanding performance, and (ii) any student who performs poorly will receive a D or F. If all students perform well, no D’s or F’s will be given.

The phrase “Expected minimum of 10%” is used in the “D’s and F’s” category because history has shown that approximately 10% to 20% of the class typically underperforms. However, the 10% minimum is a “soft” target. That is, if the entire class performs well, then the number of D’s and F’s will be 0%. Of course, if there are a large number of poor performing students, then the combined number of D’s and F’s can exceed 10%.

Exam Session Policy
Exams are closed-book and closed-notes. You are only allowed to bring a one page handwritten cheat sheet to each exam (one-sided for midterm and two-sided for the final). The cheat sheet will be graded with the exam. You may bring a basic business calculator to the exam (neither a cell phone nor a programmable calculator) but should also be prepared to use the formulas instead of the financial functions of your calculator. All other electronic devices including cell phones must be tuned off and put away during the exam.
CLASS ATTENDANCE
I strongly encourage you to attend all classes and actively participate in class discussions. You should bring a *name card* to class. I may not formally take attendance every session but tend to remember faces and names. If you are repeatedly absent from classes it will materially affect your grade. If you miss a class, it is your responsibility to check with a classmate on what took place during that class. Use of computers, laptops, tablets, and smart phones is not generally allowed in this class unless it is authorized by the instructor.

COMMUNICATION PROTOCOL
All online communications should be done thorough PolyLearn (not e-mail). If a question is potentially of interest of the other students you are encouraged to post it on the forum under the related topic. Important/urgent announcement are sent to you via e-mail. Please make sure that you are on my mailing list. If not, please let me know.

ACADEMIC INTEGRITY POLICY
Strict adherence to the highest standards of academic honesty is essential for a trusting and productive learning environment. I expect that you will explicitly make it clear whenever you want to use someone else’s ideas in your work. This includes your work on both final project and the class assignments such as homework and labs. The vast majority of students at Cal Poly does their work honestly, and expects that all will be graded on merit. In order to ensure fair grades, cheating and plagiarism will not be tolerated. We will abide by Cal Poly’s Office of Student Rights and Responsibilities (OSRR). You are responsible for knowing what plagiarism is. If you have questions, please see the OSRR website at [http://www.osrr.calpoly.edu/plagiarism/](http://www.osrr.calpoly.edu/plagiarism/). The sanctions for cheating and plagiarism will be an “F” for the course and the misconduct will be reported to the OSRR.

STATEMENT OF DISABILITY
If you require using Disability Resource Center (DRC) please let me know during the first week of the class.

COURSE SCHEDULE
This is a tentative outline for the course. Changes may be made as the course progresses. Please make sure you check the course website on PolyLearn regularly for any updates. Throughout the course, I may cover materials that are not from the textbook, including articles and video clips on current events, and Excel modeling. It is ultimately students’ responsibility to track ALL the material covered in class AND the textbook.
Course Topics

Topic 0: Preview of the Course
Overview of the Syllabus and Course Website
Overview of Fixed-Income Security Markets
Review of Bond Pricing

Topic 1: Overview of Debt Instruments, Sectors and Risks
Features of Debt Securities
Risks Associated with Investing in Bonds
Overview of Bond Sectors and Instruments
*Chapters 1, 2 and 3*

Topic 2: Introduction to Bond Pricing, Yields and Spreads
Understanding Yield Spreads: U.S. Treasuries, STRIPS
Introduction to the Valuation of Debt Securities
Yield Measures, Spot Rates, and Forward Rates
*Chapters 4, 5 and 6*

Topic 3: Interest Rate Risk, Volatility and Term Structure
Introduction to the Measurement of Interest Rate Risk
Duration and Convexity Measures
Term Structure and Volatility of Interest Rates
Swap Curves
*Chapter 7 and 8*

Topic 4: Valuing Bonds with Embedded Options
Valuation Using Binomial Models
Callable and Putable Bonds
Convertible Bonds
*Chapter 9*

Topic 5: Credit and Interest Rate Risks and Derivatives
General Principles of Credit Analysis
Credit Risk Models
Credit Derivatives
Interest Rate Derivative Instruments
*Chapter 13 and 15*

Topic 6: Bond Portfolio Management and Immunization Strategies
Introduction to Bond Portfolio Management
Measuring a Portfolio’s Risk Profile
Managing Funds against a Bond Market Index
Portfolio Immunization and Cash Flow Matching
*Chapters 16, 17, 18 and 19*