

FBE 535 – Applied Finance in Fixed Income Securities

Syllabus, Fall 2017

Class Lectures: Tuesdays 6:30pm – 9:30pm

Professor: Mark D Griffiths

Office Hours: M&W 10-11:30; 4-5:30; Tu. 5-6 and by appointment.

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Online communication regarding this course will be via Blackboard.

Prerequisite: 1 from ([GSBA 521](#) or [GSBA 521b](#) or [GSBA 548](#))

Course Description

The global market for fixed income securities and their derivatives continues to grow and evolving at a rapid pace. This course is designed to develop an understanding of fixed income valuation and hedging methods and a familiarity with major markets and instruments. Tools for quantifying, hedging, and speculating on risk are emphasized. The emphasis of the course will be on conceptual issues as opposed to the institutional aspects (although the basic institutional aspects will be covered). By all standards this is a quantitative class and a good background in calculus and statistics is highly desirable, if not necessary. Prior knowledge of Excel will be useful (though not required) as some analysis will be done in Excel.

Objective

The fixed income market is the largest source of financing for governments, corporations, and households alike. Because of the central role that these markets play in the world of finance, this course will provide you with an in-depth understanding of essential ideas about how debt markets function from the viewpoint of a finance professional. My goal is to teach you to think like a bond professional.

Learning to think like a fixed income professional requires two levels of analysis: one level is micro and the other level is macro. The first part you will learn by working problems in the workbook where you will learn the details that make up the micro knowledge of fixed income securities. The macro part focuses on economy and market-wide factors that influence interest rate levels, risk, and interest rate spreads. We will spend a great deal of class time on these macro factors.

The level of this class prepares you for the CFA level I. For those of you who want to specialize in the field of investments, I strongly urge you to consider taking the CFA examinations. In my conversations with finance professionals of all types, a CFA charter

(or passing a part 1 or 2 of the exam) will help you make the cut for the hard to get investment jobs. These exams are hard to pass (a fail rate above 60%), but they put you in very select company.

Specifically, this course serves as your introduction to the world of fixed income (bond) finance. Primary topics include:

- What are the different markets for fixed income instruments?
- How do we value different types of bonds?
- How do we measure the risk in fixed income instruments?
- How do we hedge or mitigate the risk in fixed income instruments?
- How are fixed income instruments traded in the market place?

We will emphasize the underlying principles and theories that pertain to each of these areas while at the same time presenting the context in which they operate. What we observe in the "real" world of finance results from the interaction of underlying principles with the current financial environment. The financial environment is bound to change; however, basic principles will remain the same. Understanding these basic principles will prepare you to operate in the financial environment of tomorrow, whatever tomorrow brings! Our objective, therefore, will be to understand *why* things happen in finance as opposed to memorizing historical facts.

Note: This is a highly mathematical course involving financial modelling. You cannot memorize or 'cram' the material, you must learn it! This can only be done through adequate preparation and review.

Attendance Policy

Every student will be deemed to be present for every class. Should a student fail to submit an assignment or fail to write a mid-term examination, it will be deemed that the student voluntarily chose this course of action. The only exception to this policy is if the instructor has received an official notice of the student's withdrawal from the course.

Grading

Students will be required to complete two in-class exams, and one major (group) project contributing 30% each to the final grade. In addition, participation grades of up to 10% will be awarded. Final grades are a function of overall performance. *Students with unsatisfactory performance will receive failing grades.*

There will be **NO** make-up exams during the semester. Students missing the mid-term exam(s) will have the weight for the missing exam added to the remaining course requirements.

Schedule your time carefully. Pay particular attention to the timing of the mid-term examinations and the project. There will be no extensions for any reason. *You (and only you) are responsible for managing your time and your work load.*

The schedule below indicates the ordering of the course material, the chapters for which you are responsible and the dates on which project is due and mid-term exams are to be written. *Arrange your schedules accordingly.*

Preparing for Class

There is too much material in this course for you to cram or to learn by osmosis, you must prepare adequately. **Review** the Instructor's Lecture Notes that are posted *in advance* of class. Take notes and ask questions. It is highly recommended that you attend class. The Instructor's Lecture Notes do not contain full and complete explanations of the material presented – this is only available by attending class. Do all of the homework assignments and self-test quizzes. Review the material after class and seek help immediately if you need it.

Preparing for Examinations

Review again the Instructor's Lecture Notes that are posted. Make sure you know where all the numbers come from and why things are calculated as they are. Review the text book chapters, they will give you an alternate way of looking at the material. Solve the questions and problems at the end of each chapter. The answers are laid out in the Workbook that accompanies the text. The examinations will draw some questions from the Instructor's Test Bank – these questions are highly similar and comparable in difficulty to those at the end of each chapter.

FAQs:

1. Is there an opportunity to do additional work for extra credit?

No, to provide some students with extra credit options and not all students would be discriminatory. Discrimination is illegal. To provide extra credit options to all students is unnecessary; there are more than enough grading points with the project and mid-term exams.

2. Why are there no make-up mid-term exams?

Any mid-term exam would have different questions and problems compared to the one missed. Hence, the make-up exam would be either easier or harder. This would be discrimination either in favor or against the student writing the make-up exam. Discrimination is illegal.

3. Am I entitled to 'special consideration' if something happens outside of my control such as my internet went out, I was called home unexpectedly, my house burned down, my grandmother died . . .?

No, this syllabus covers how any missed assignments or mid-terms are to be handled. It is unfortunate that you had difficulties but I cannot and will not determine which 'special circumstances' are sufficiently deserving and which are not. Accordingly, the only fair solution for all students is to treat all students exactly the same as laid out in this syllabus. Any alternative would be

discrimination either in favor or against at least one other student. Discrimination is illegal.

4. Do job interviews or attending speaker sessions assigned by other professors constitute “excused” absences?

No, but you will be treated as adults. You have the right to attend class or not. In either case, you are responsible for all the material covered.

5. Do I have to notify you or provide documentation if I am going to miss class?

No, but you will be treated as adults. You have the right to attend class or not. In either case, you are responsible for all the material covered.

6. The schedule below is entitled “Tentative Class Schedule” what exactly does that mean?

It means that, in the past, this is the pace at which the class has progressed. You should note that while there may be some slippage in terms of the material covered on any given day, the Exams and Project are *always* going to be held on the indicated date. This gives you much more certainty for planning purposes.

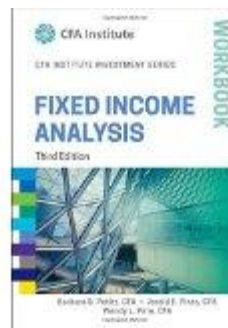
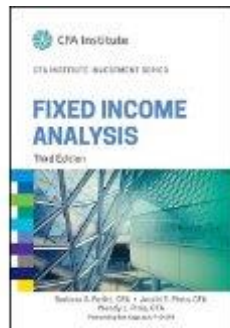
7. If I choose to withdraw from the course, can I change my status to ‘Audit?’

No, I do not allow students to audit this class. If you are going to sit in the classroom then, you have to take the course for credit. If you are not sitting in the classroom then, obviously, you are not auditing.

8. Why is BlackBoard NOT the “official” grade book?

Due to reported instances of keyboard loggers hacking the BlackBoard system, the “official” grade book is kept off of the site so that it cannot be compromised. The off-site grade book is the “official” grade book upon which final grades are determined. You are entitled to review your scores at any time.

Required Materials



Fixed Income Analysis, 3rd edition, Petitt, Pinto and Pirie, CFA Institute

And (because this book contains the solutions to chapter questions)

Fixed Income Analysis, Workbook, Petitt, Pinto and Pirie, CFA Institute

Note: since we will not be reviewing every chapter in the book, you may wish to share a copy or get a used version. The workbook is very helpful.

A financial calculator is **required**. It should have the ability to do Time Value of Money (TVM) problems including continuous compounding and discounting problems.



I recommend the Hewlett Packard 10BII



The Texas Instruments BAII Plus is also acceptable.

Graphing calculators are also acceptable as long as they can handle TVM (Time Value of Money) problems.

Calculator Tutorials

http://www.tvmcalcs.com/calculator_index

http://h10025.www1.hp.com/ewfrf/wc/useCategory?lc=en&cc=us&dlc=en&product=61751&dest_page=product

Note: Calculators come with instruction manuals – read it.

Lecture Notes:

To reduce your note-taking, the Instructor's lecture notes will be available on the class BlackBoard web-site. I strongly advise you to augment the slide decks with your own notes. **Note:** these Instructor's lecture notes are a very poor substitute for actually attending class – the notes that are posted on the website do not contain any solutions.

Homework

The CFA Institute's Workbook that is required for this course contains relevant questions and problems for every chapter covered – do them! In addition, I will be posting additional self-test quizzes (with solutions) to expand on the text book material. Make sure you stay up to date.

Major Project

You will work in teams for the project. Teams will comprise no more than three persons. Your team project determines 30% of your grade, so choose with whom you work and how you organize your team wisely. Since you have teammates, I expect high quality work that reflects the human resources available for the work. I will hold each of you accountable for the quality of your team projects. Sloppy and incomplete work will be graded down accordingly. *See the detailed explanation of the project which has been posted on BlackBoard.* The requirements of the project and the means by which successful submission is made as outlined in the Project Description posted on BlackBoard forms part of this syllabus.

Form a team early. It is your responsibility to find and work with a team and to divide and manage the work accordingly.

Team Rules

All team members will receive the same project grade no matter their contribution to the work. However, at any time prior to noon on Thanksgiving Day, a team may vote (a simple majority) to “fire” a team member for a lack of contribution. *Any team member who gets “fired” and cannot find another team with which to work will have to perform the project independently.* Team members can choose to split-off and reform a new group as well. No matter what happens in your team, all team members are responsible for the project. *That is, even if you did not work on a particular section of the report, if it has a major error (or*

contribution) in it – you are also responsible! I DO NOT MONITOR YOUR TEAM. IT IS YOUR RESPONSIBILITY TO GET THE WORK DONE.

DISABILITY SERVICES AND PROGRAMS ANNOUNCEMENT

Please be aware of the following policy regarding disabled student accommodations:

"Any student requesting academic accommodations based on a disability are required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or my TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776." www.usc.edu/disability

Statement on Academic Integrity

USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *SCampus*, the Student Guidebook, (www.usc.edu/scampus or <http://scampus.usc.edu>) contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A.

Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty. The Review process can be found at: <http://www.usc.edu/student-affairs/SJACS/>. Failure to adhere to the academic conduct standards set forth by these guidelines and our programs will not be tolerated by the USC Marshall community and can lead to dismissal.

Support Systems

Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* (www.usc.edu/disability) provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* (<http://emergency.usc.edu/>) will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

Emergency Preparedness/Course Continuity

In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies.

Course Outline

The following course outline will be followed in a lecture format, but with sufficient flexibility to alter allotted time and emphasis as questions arise. From time to time, class will be conducted on a discussion format. You are required to follow the economic news in the press and participate in the class discussions. Regardless of which format is employed, questions and comments are always encouraged.

08/22; Introduction to the Course; Introduction to Money Markets	08/22: Introduction to Money Markets (cont'd)
08/29: Bond Market Overview Read: Foreword & Chapter 1	08/29: Bond Market Overview (cont'd) Read: Chapter 1
09/05: Bond Pricing Read: Chapter 2	09/05: Bond Pricing (cont'd) Read: Chapter 3
09/12: Bond Pricing (cont'd) Read: Chapter 3	09/12: Bootstrapping & Duration Read: Chapter 4
09/19: Bootstrapping & Duration Read: Chapter 4	09/19: Bootstrapping & Duration (cont'd) Read: Chapter 4
09/26: Rolling Yields & Total Returns Read: Chapter 4	09/26: Understanding Credit Risk Read: Chapter 5
10/03: Exam 1; held in class.	10/03:
10/10: Understanding Credit Risk (cont'd) Read: Chapter 5	10/10: Understanding Credit Risk (cont'd) Read: Chapter 5
10/17: COVERS Inc.	10/17: COVERS Inc.
10/24: Understanding FRAs	10/24: Understanding STIRS
10/31: Understanding Bond Futures	10/31: Hedging Bonds & Portfolios
11/07: Discount Functions	11/07: Discount Functions (cont'd) Read: Chapter 10
11/14: Understanding Swaps Read: Chapter 10	11/14: Understanding Swaps (cont'd) Read: Chapter 10
11/21: Exam 2 held in class.	11/21:
11/28: Major Project Review	11/28: Major Project Review

N.B. Every topic/section is supported by Lecture notes available on BlackBoard

*- All details in this schedule are subject to change with adequate notice.