

FBE 435: Applied Finance in Fixed Income Securities

Mon/Wed 2:00-3:50p.m. JFF 239

4 units

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Office Hours: Wed 12:30-1:30 pm (or by appointment)

Course Description

This course is a study of fixed income analysis, investment, and portfolio management. The course will cover an overview of the fixed income markets, the distinguishing features and risks of various fixed incomes securities, and their role in different types of portfolios. Students will learn fundamental fixed income security and portfolio analysis and calculations such as discounting cashflows to calculate yield, duration, and convexity, and develop familiarity with the breadth of instruments and fixed income nomenclature. The course will follow and review the macro and micro economic drivers of fixed income returns and how to construct diversified bond portfolios relative to investment goals. Classes will include regular review of current market topics and events and include guest lectures from fixed income market practitioners.

Learning Objectives

Upon successful completion of this course, students will be able to:

- Explain the role of debt instruments in financial markets.
- Interpret the term structure of interest rates (yield curves).
- Assess the impact of macroeconomic developments on fixed income portfolios.
- Articulate distinguishing characteristics and risks associated with debt instruments.
- Compute and interpret analytics used in the management of fixed income portfolios.
- Measure performance of bonds and portfolios and attribute to contributing factors.
- Develop critical thinking and communication skills in a financial context.

Required Course Reading and Course Notes:

- Assigned readings from Fabozzi, Handbook of Fixed Income Securities, Ninth Edition.
- Assigned readings from Fabozzi, Fixed Income Mathematics, Fifth Edition.
- Supplemental materials posted on Blackboard to be provided by instructor.
- Reading/listening to financial news such as the Wall Street Journal, Financial Times, CNBC, and Bloomberg are strongly recommended to maximize learning.

Prerequisites and/or Recommended Preparation:

Prerequisites for this course are as follows:

Choose one from the ([BUAD 215](#) or [BUAD 306](#) or [BUAD 308](#))

Grading Policies:

The class average grade will be 3.5. Students will be ranked and awarded their grades accordingly.

Exam and Deliverable Dates:

Assignments	Points	% of Overall Grade
Class Participation & Analysis of Current Events	15	15%
Team Project	20	20%
Mid-Term Exam	25	25%
Final Exam	40	40%

Class Participation:

Please see Appendix III

Homework:

- Weekly readings
- Monitor financial markets via financial journals and news sources and arrive at class prepared to discuss current course topics and live market events
- Develop Excel model(s) to compute price, accrued interest, yield, spread and duration

Team Project:

Teams will assess market conditions and build a model portfolio that they believe will provide the best risk-adjusted return outcome for a hypothetical client taking account of the current and future macro-economic environment. Teams will compute projected yield, analytics, and run stress analysis of these portfolios through various market scenarios (interest rates and spread shocks) and prepare and deliver a mock presentation to a prospective investor. Team members may receive different grades based on their respective individual contributions and understanding of the matters being presented. Team members are expected to document the specific contributions of team members. See Appendix II.

Use of AI Generators:

AI generators such as ChatGPT may be used for research and preparation for homework and class project(s) however: (a) you must site where and how it was used in any deliverables; and (b) you are ultimately responsible for the content and understanding it when questioned.

Exams/Make-up Exams:

Exams are closed book/notes and in class. Students may utilize a standard financial calculator such as a TI-BAIL.

Except in extraordinary circumstances, make-up exams will not be allowed. If a student must miss an exam, he/she normally will be given a zero for that exam. If there extenuating circumstances (generally medical) that prevents a student from taking an exam, he/she should inform the instructor and obtain prior written permission for a make-up. Make-ups will not be given merely for a student's convenience or lack of adequate preparation. Unexcused absences from exams will result in a zero except in the most extreme emergencies. Emergencies arising

late in the term may result in a grade if incomplete (IN) in the course. Class work to complete the course should be completed within one calendar year from the date the IN was assigned. The IN mark will be converted to an F grade should the course not be completed. In all of these cases, it is the responsibility of the student to document the extenuating circumstances. No student is permitted to take an exam before its normally scheduled time.

Technology Policy:

Laptop and cell phone usage is not permitted during class except for note-taking and when and as requested by the professor and/or staff as necessary to participate in class exercises. Use of personal communication devices during academic or professional sessions is considered unprofessional and is not permitted. ANY e-devices (cell phones, iPads, other texting devices, laptops, I-pods) must be completely turned off during class time.

The Importance of Course Evaluation:

The student course evaluations are valuable. This course is continuously improved, based on feedback from students and instructor observations.

Emergency Preparedness:

In case of a declared emergency if travel to campus is not feasible, the USC Emergency Information web site (<https://emergency.usc.edu/>) will provide safety and other information, including electronic means by which instructors will conduct class using a combination of USC's Blackboard learning management system (blackboard.usc.edu), teleconferencing, and other technologies.

Use of Recordings:

Pursuant to the *USC Student Handbook* (<https://policy.usc.edu/studenthandbook/>, page 57), students may not record a university class without the express permission of the instructor and announcement to the class. In addition, students may not distribute or use notes or recordings based on USC classes or lectures without the express permission of the instructor for purposes other than personal or class-related group study by students registered for the class. This restriction on unauthorized use applies to all information that is distributed or displayed for use in relationship to the class. Violation of this policy may subject an individual or entity to university discipline and/or legal proceedings.

Course Outline and Assignments:

See Appendix I

Open Expression and Respect for All:

An important goal of the educational experience at USC Marshall is to be exposed to and discuss diverse, thought-provoking, and sometimes controversial ideas that challenge one's beliefs. In this course we will support the values articulated in the USC Marshall "[Open Expression Statement](https://www.marshall.usc.edu/about/open-expression-statement)" (<https://www.marshall.usc.edu/about/open-expression-statement>).

Statement on Academic Conduct and Support Systems

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Academic Integrity:

The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, comprises the integrity of the person who commits the act and

can impugn the perceived integrity of the entire university community. It stands in opposition to the university's mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see [the student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#). Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Students and Disability Accommodations:

USC welcomes students with disabilities into all the university's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-5086 or (213) 821-8298

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

[USC Emergency](#) - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

[USC Department of Public Safety](#) - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call

Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - (323) 442-2850 or otfp@med.usc.edu

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.

Appendix I

COURSE OUTLINE AND ASSIGNMENTS			
Dates	Topics	Readings	Book
Week 1: 1/8 and 1/10	Fixed Income Market Overview	Overview of the Types and Features of Fixed Income Securities (Chapter 1)	Handbook of Fixed Income Securities
	Fixed Income Security Basics	Risk Associated with Investing in Fixed Income Securities (Chapter 2)	Handbook of Fixed Income Securities
	Careers in Fixed Income	Bond Indexes and Bond Portfolio Management (Chapter 45, Pages 1125-1140)	Handbook of Fixed Income Securities
Week 2: 1/17	Basic Bond Valuation	Bond Pricing, Yield Measures, and Total Return (Chapter 4)	Handbook of Fixed Income Securities
	Excel Cash-flow Modeling	Future Value, Present Value, and Yield (Internal Rate of Return) (Chapters 2, 3 & 4)	Fixed Income Mathematics
Week 3: 1/22 and 1/24	The Yield Curve and Interest Rates	The Yield Curve, Spot Rate Curve, and Forward Rates (Chapter 7)	Fixed Income Mathematics
	Central Banks	The Structure of Interest Rates (Chapter 3)	Handbook of Fixed Income Securities
	Duration and Convexity	Bond Yield Measures (Chapter 6)	Fixed Income Mathematics
	Return Calculation	Measuring Interest-Rate Risk (Chapter 5)	Handbook of Fixed Income Securities
	Portfolio Construction	Potential Sources of Dollar Return (Chapter 8)	Fixed Income Mathematics
		Total Return (Chapter 9)	Fixed Income Mathematics
		Historical Return Measures (Chapter 10)	Fixed Income Mathematics
Week 4: 1/29 and 1/31	US Treasuries	U.S. Treasury Securities (Chapter 7)	Handbook of Fixed Income Securities
	Municipal Bonds	Agency Debt Securities (Chapter 8)	Handbook of Fixed Income Securities
	Investment Grade and High Yield Bonds	Municipal Bonds (Chapter 9)	Handbook of Fixed Income Securities
	Leveraged Loans	Corporate Bonds (Chapter 10)	Handbook of Fixed Income Securities
	Money-Markets	Leveraged Loans (Chapter 11)	Handbook of Fixed Income Securities
	TIPS	Convertible Securities (Chapter 38, Pages 881-888)	Handbook of Fixed Income Securities
	Global bonds and EM	Structured Notes and Credit-Linked Notes (Chapter 12)	Handbook of Fixed Income Securities
	Floating-Rate Securities	Commercial Paper (Chapter 13)	Handbook of Fixed Income Securities
	ETFs	Floating-Rate Securities (Chapter 14)	Handbook of Fixed Income Securities
		Inflation-Linked Bonds (Chapter 15)	Handbook of Fixed Income Securities
		Non-U.S. Sovereign Bonds (Chapter 16)	Handbook of Fixed Income Securities
		The Emerging Markets Debt (Chapter 17)	Handbook of Fixed Income Securities
		Fixed Income Exchange Traded Funds (Chapter 18)	Handbook of Fixed Income Securities

Week 5: 2/5 and 2/7	Mortgages Backed Securities	An Overview of Mortgages and the Mortgage Market (Chapter 21)	Handbook of Fixed Income Securities
	Agency and Non-Agency RMBS	Agency Mortgage Passthrough Securities (Chapter 22)	Handbook of Fixed Income Securities
	Pre-Payments and Convexity	Agency Collateralized Mortgage Obligations (Chapter 23)	Handbook of Fixed Income Securities
	Modeling Mortgage Credit	Stripped Mortgage-Backed Securities (Chapter 24)	Handbook of Fixed Income Securities
	Collateralized Mortgage Obligations	Cash Flow Characteristics of Fixed-Rate Amortizing Mortgage Loans (Chapter 25)	Fixed Income Mathematics
		Cash Flow Characteristics of Mortgage-Backed Securities (Chapter 26)	Fixed Income Mathematics
		Analysis of Agency Mortgage-Backed Securities (Chapter 27)	Fixed Income Mathematics
		Non-Agency Residential Mortgage-Backed Securities: Legacy, RMBS 2.0, and Non-QM (Chapter 25)	Handbook of Fixed Income Securities
Week 6: 2/12 and 2/14	Structured Products	Commercial Mortgage-Backed Securities (Chapter 27)	Handbook of Fixed Income Securities
	Commercial Agency and Non-Agency CMBS	Credit Card Asset-Backed Securities (Chapter 28)	Handbook of Fixed Income Securities
	Asset-Backed Securities	Securities Backed by Auto Loans and Leases, Equipment Loans and Leases, and Student Loans (Chapter 29)	Handbook of Fixed Income Securities
	Collateralized Loan Obligations	Collateralized Loan Obligations (Chapter 30)	Handbook of Fixed Income Securities
Week 7: 2/21	Mid-Term Review		
Week 8: 2/26 and 2/28	Mid-Term Exam (2/26)		
	Introduction to Team Project		
Week 9: 3/4 and 3/6	Interest Rate Futures	Introduction to Interest-Rate Futures and Options Contracts (Chapter 61)	Handbook of Fixed Income Securities
	Interest Rate Options	Pricing Futures and Portfolio Applications (Chapter 62)	Handbook of Fixed Income Securities
	Interest Rate Swaps	Controlling-Interest Rate Risk with Futures and Options (Chapter 63)	Handbook of Fixed Income Securities
	Hedging Rate Risk	Interest Rate Swaps (Chapter 64)	Handbook of Fixed Income Securities
		The Valuation of Interest-Rate Swaps and Swaptions (Chapter 65)	Handbook of Fixed Income Securities
		The Basics of Interest-Rate Options (Chapter 66)	Handbook of Fixed Income Securities
		Interest-Rate Caps and Floors (Chapter 67)	Handbook of Fixed Income Securities
Week 10: 3/11 and 3/13	Spring Break (No Class)		
Week 11: 3/18 and	The Forward Curve	Overview of Forward Rate Analysis (Chapter 31)	Handbook of Fixed Income Securities

3/20			
	Key Rate Duration	A Framework for Analyzing Yield-Curve Trades (Chapter 32)	Handbook of Fixed Income Securities
	Bonds with Embedded Options	Valuation of Bonds with Embedded Options (Chapter 36)	Handbook of Fixed Income Securities
	The Yield Curves Through Economic Cycles	Credit Analysis for Corporate Bonds (Chapter 40)	Handbook of Fixed Income Securities
	Yield Curve Trades	Credit Derivatives (Chapter 68)	Handbook of Fixed Income Securities
Week 12: 3/25 and 3/27	Performance Attribution	Principles of Performance Attribution (Chapter 70)	Handbook of Fixed Income Securities
	Distressed Securities	Performance Attribution for Portfolios of Fixed Income Securities (Chapter 71)	Handbook of Fixed Income Securities
	The Utilization of Leverage	Financing Positions in the Bond Market (Chapter 60)	Handbook of Fixed Income Securities
Week 13: 4/1 and 4/3	Team Project Preparation – Working Sessions with Professor		
Week 14: 4/8 and 4/10	Team Project Presentations		
Week 15: 4/15 and 4/17	Team Project Presentations		
Week 16: 4/22 and 4/24	Finals Review		
Week 17: 5/1	Final Exam (5/1)		

Appendix II

SAMPLE PEER EVALUATION FORM

Grades for individual student contributions to team projects are assigned by me, based on my observations of the team's working dynamics, my assessment of the team's project quality, and thoughtful consideration of the information provided through your peer evaluations.

Please complete the following **Peer Input/Evaluation Form** for your team. In the first section, list all team members, their specific role on the project (areas of assigned responsibility), specific contributions, and constructive recommendations in the provided columns for the Project(s) that you worked on. Include yourself.

Then, in the second table, rate each of your team members, *including yourself*, for each type of contribution (rows) using a scale of 0 – 2, based on the **contributions** of each team member for the selected assignment according to the following criteria:

- 0 indicates the team member did not meet expectations;
- 1 indicates the team member met expectations;
- 2 indicated the team member exceeded expectations.

Lastly, add up the points for each person and provide your name and the date.

Peer Input/Evaluation Form

*Complete one row in first table and one column in lower table for each of your teammates/group members, **including yourself.***

#	Name	Describe your teammate's (or your) specific role on and contributions to the assignment:	How might your teammate (or you) have made more effective contributions to the assignment?
1			
2			
3			
4			
5			
6			
7			
8			

Assess your teammate's contributions on a scale of 0-2 <i>0 = Does Not Meet Expectations</i> <i>1 = Meets Expectations</i> <i>2 = Exceed Expectations</i>		Team Member 1	Team Member 2	Team Member 3	Team Member 4	Team Member 5	Team Member 6	Team Member 7	Team Member 8
Attended and was engaged in team meetings from beginning to end									
Asked important questions									
Listened to and acknowledged suggestions from every team mate									
Made valuable suggestions									
Took initiative to lead discussions, organize and complete tasks									
Contributed to organizing the assignment									
Contributed to writing the assignment									
Reliably completed tasks on time in a quality manner									
Demonstrated commitment to the team by quality of effort									
Was cooperative and worked well with others									
I would want to work with this team member again.									
TOTAL									

Your Name:	Date:
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Appendix III

CLASS PARTICIPATION STATEMENT

Class participation is an extremely important part of the learning experience in this course as the richness of the learning experience will be largely dependent upon the degree of preparation by *all* students prior to each class session.

A course that incorporates the frequent use of case analyses to illustrate the practical application of concepts and practices requires the student to prepare cases diligently and thoroughly and actively offer the results of the analyses and conclusions derived as well as recommendations during each class session. My expectation and that of your classmates are that you are prepared for *all* classes and will actively participate in and meaningfully contribute to class discussions. In-class participation is also a critical part of this course's learning experience. Cold calling may take place to encourage active participation and to gain multiple perspectives and points of view, thus lending itself to the richness of the learning experience. In-class participation grading will be based on students' demonstrated willingness to participate, and the quality of the comments expressed, rather than quantity.

While some students are far more comfortable than others with class participation, *all* students must make an effort to contribute meaningfully. Students will offer their opinions in group settings many times in their careers; thus, class participation serves to prepare students for this business experience.

The evaluating of in-class participation is based on the following:

- *Relevance* – Does the comment or question meaningfully bear on the subject at hand? Irrelevant or inappropriate comments can detract from the learning experience.
- *Responsiveness* – Does the comment or question connect to what someone else has said?
- *Analysis* – Is the reasoning employed consistent and logical? Has data from course materials, personal experience, or general knowledge been employed to support the assertions/findings?
- *Value* – Does the contribution further the understanding of the issues at hand?
- *Clarity* – Is the comment concise and understandable?

During class sessions, I frequently assume the role of a facilitator to encourage a discussion that includes perspectives from a variety of viewpoints and, secondly, to help pull together prevailing analyses and recommendations. The direction and quality of a discussion is the *collective responsibility of the class*.

To underscore the importance of participation, 15% percent of the course grade or 15 of 100 points are allocated to class participation.

Class Participation—Behavioral Anchor Rating Scale:

Excellent Performance

- Initiates information relative to topics discussed
- Accurately exhibits knowledge of assignment content
- Clarifies points that others may not understand
- Shares personal experiences or opinions related to topic
- Offers relevant / succinct input to class
- Actively participates in class exercises
- Demonstrates ability to apply, analyze, evaluate & synthesize course material.
- Demonstrates willingness to attempt to answer unpopular questions
- Builds on other students' contributions

Average Performance

- Participates in group discussions when asked
- Demonstrates knowledge of course material
- Offers clear, concise, “good” information on class assignments
- Offers input, but tends to reiterate the intuitive
- Attends class regularly

Unacceptable Performance

- Fails to participate even when directly asked
- Gives no input to discussions
- Does not demonstrate knowledge of the readings
- Shows up to class: does nothing
- Distracts group / class
- Irrelevant discussion

Appendix IV

SAMPLE MIDPOINT COURSE EVALUATION QUESTIONS

Faculty are encouraged to give students midpoint course evaluations to gauge student concerns and adjust the course early on. Student feedback is for instructor use only and not a part of the formal performance review process. Instructors are encouraged to review the comments and discuss in the following class session.

In order to continuously improve the effectiveness of our class, could you please take a few moments to answer the following questions:

1. How well do the course objectives support your general business knowledge and personal career goals?
2. What have you liked about this course so far?
3. Do you have any suggestions for improving the course experience?