

## Fixed Income Securities (Postgraduate)

### FIN-ISS409

#### *Course Description*

This course covers the valuation and application of a wide variety of fixed income securities and their derivatives. Fixed income securities are financial claims including pure discount bonds, coupon bonds such as Treasury notes and corporate bonds, floating rate notes, callable bonds, among many others, issued by public or private entities. In the first half of the course, we focus on yield curve construction, duration and convexity, and formal term structure models. The goal is to introduce you to at least one equilibrium model and one no-arbitrage model, and to analytical tools used in interest rate modeling and risk management. In the second half of the course, we first focus on interest rate derivatives such as interest rate swaps, bond options and interest rate options, including caps, floors and swaptions, and the management of callable debt. We then look beyond interest rate risk, and study other risks that can be inherent in fixed income securities such as credit risk, illiquidity risk, and the risks stemming from securitization.

#### *Required Texts*

*Bond Markets, Analysis, and Strategies, 9th Edition* by Frank J. Fabozzi

*Other Reading materials will be provided through your student center*

#### *Prerequisite*

Financial Management and postgraduate status needed. Please consult your advisor if you are a non-degree seeking student

#### *Course Requirements*

Course Component	Weight
Midterm Exam	30%
Final Exam	40%
Project	20%
Class Participation	10%

## *Learning Outcomes*

- Identify and distinguish between the different types of fixed income securities;
- Demonstrate how to apply derivative instruments to hedge the risks and enhance the returns of fixed income securities;
- Make use of analytic tools in bond portfolio management and interest rate risk management;
- Identify various sources of credit risk and apply structural models to estimate the risk;
- Critically evaluate structured products related to fixed income securities and derivatives.

## *Evaluation and Grading*

A	93-100	B-	80-82	D+	67-69
A-	90-92	C+	77-79	D	63-66
B+	87-89	C	73-76	D-	60-62
B	83-86	C-	70-72	F	0-59

## *Course Hours*

The course has 20 class sessions in total. Each class session is 150 minutes in length, for a total of 3000 minutes of in-class time. Students are expected to spend 15-20 hours per week outside of class. The University awards **4** credits for this course. Different universities may count course credits differently. Consult officials at your own home institution.

## *Attendance*

Occasionally, due to illness or other unavoidable circumstance, a student may need to miss a class. The University's policy requires a medical certificate to be excused. Any absence may impact on the student's grade. Moreover, **the University's policy is that a student who has more than 3 absences will fail the course. Arriving late or leaving early will count as a partial absence.**

## *Academic Honesty*

The University expects all students to do their own work. Instructors will fail assignments that show evidence of plagiarism or other forms of cheating and will also report the student's name to the University administration. A student reported to the University for cheating is placed on disciplinary probation; a student reported twice is suspended or expelled.

## ***Disability Accommodation***

Any student who needs special accommodation due to the impact of disability should inform the University within 10 days before the program starts.

## ***Tentative Schedule***

Class	Contents	Readings
1	<ul style="list-style-type: none"> <li>• Introduction to the Course</li> <li>• Pricing of Bonds</li> </ul>	Chapter 1-2
2	<ul style="list-style-type: none"> <li>• Measuring Yield</li> </ul>	Chapter 3
3	<ul style="list-style-type: none"> <li>• Bond Price Volatility</li> </ul>	Chapter 4
4	<ul style="list-style-type: none"> <li>• Factors Affecting Bond Yields and the Term Structure of Interest Rates</li> </ul>	Chapter 5
5	<ul style="list-style-type: none"> <li>• Treasury and Federal Agency Securities</li> <li>• Corporate Debt Instruments</li> <li>• Municipal Securities</li> <li>• International Bonds</li> <li>• Residential Mortgage Loans</li> </ul>	Chapter 6-10
6	<ul style="list-style-type: none"> <li>• Agency Mortgage Pass-Through Securities</li> <li>• Agency Collateralized Mortgage Obligations and Stripped Mortgage-Backed Securities</li> <li>• Nonagency Residential</li> <li>• Commercial Mortgage Loans and Commercial Mortgage-Backed Securities</li> <li>• Asset-Backed Securities</li> </ul>	Chapter 11-15
7	<ul style="list-style-type: none"> <li>• Pooled Investment Vehicles for Fixed Income Investors</li> <li>• Interest-Rate Models</li> </ul>	Chapter 16-17
8	<ul style="list-style-type: none"> <li>• Bond Portfolio Management Strategies</li> <li>• Bond Portfolio Construction</li> </ul>	Chapter 24-25
9	<ul style="list-style-type: none"> <li>• Corporate Bond Portfolio Management</li> </ul>	Chapter 26
	Midterm Exam	
10	<ul style="list-style-type: none"> <li>• Liability-Driven Strategies</li> </ul>	Chapter 27
11	<ul style="list-style-type: none"> <li>• Analysis of Bonds with Embedded Options</li> <li>• Analysis of Residential Mortgage-Backed Securities</li> <li>• Analysis of Convertible Bonds</li> </ul>	Chapter 18-20
12	<ul style="list-style-type: none"> <li>• Securitization I</li> </ul>	Handouts
13	<ul style="list-style-type: none"> <li>• Bond Performance Measurement and Evaluation</li> <li>• Interest Rate Futures</li> </ul>	Chapter 28-29

14	• Interest Rate Options	Chapter 30
15	• Interest-Rate Swaps, Caps, and Floors	Chapter 31
16	• Credit Default Swaps	Chapter 32
17	• Analysis of Bonds with Embedded Options	Chapter 18
18	• Callable Debt	Handouts
19	• Measuring Credit Spreads • Corporate Bond Credit Analysis	Chapter 21-22
20	Final Exam	