

**FINN 6211 Fixed Income Securities and Credit Risk  
Spring 2021**

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Class Meeting Day/Time: Monday 5:30pm - 8:15pm, synchronous class via Zoom  
Office Hours: Tuesday 10:00am - 11:00am or by appointment via Zoom  
Prerequisite: FINN 6210 Derivatives I: Financial Elements of Derivatives  
Required Text: *Bond Markets, Analysis, and Strategies*, by Frank J. Fabozzi, 9<sup>th</sup> edition, 2015, Pearson.  
Optional Text: *Fixed Income Securities: Tools for Today's Markets*, by Bruce Tuckman and Angel Serrat, 3<sup>rd</sup> edition, 2012, Wiley.

**Course Objective:**

The purpose of this course is to introduce the students to various aspects of the fixed-income securities and markets. Topics include the basic concepts of the fixed income securities, interest rates and yield curve, bond volatility measures, major fixed income sectors, mortgage-backed securities, bonds with embedded options, credit risk analysis, bond portfolio management, hedging, and financial risk management.

The material in this course is inherently quantitative. We will also introduce institutional details of the markets and market participants. Overall, you will get a big picture of the fixed income securities and markets. By the end of the course, you should expect to be able to

- Master the basic concepts of bond mathematics: price, yield, duration, and convexity, and yield curve.
- Understand the term structure theories.
- Learn about various sectors in the fixed income security market, including the Treasury, agency, corporate, international, and mortgage-backed sectors.
- Grasp the structure and valuation of mortgage-backed securities and bonds with embedded options.
- Examine credit risk.
- Learn about bond portfolio management strategies and hedging.
- Explore the concepts and models of financial risk management.

**Preparing for Class**

Lecture and supplemental materials will be made available on Canvas prior to class sessions. Please have these materials handy during class meetings so you can follow along the lecture and discussions. Most lectures are supplemented with required readings from the Fabozzi text and

supplemental readings from the Tuckman text. I will also post class announcements, syllabus, assignments, formula sheets, and other supplemental materials during the semester on Canvas.

### **Homework Assignments**

There will be three individual homework assignments for this class. The posting and due dates are shown in the course schedule below. For each homework assignment, please submit your completed homework in a single PDF file on Canvas on the due date.

### **Examination**

There will be a midterm exam and a final exam. Both exams will be take-home. Each examination will include calculation-type problems and discussion-type questions. A formula sheet will be provided for each exam. Please see the course schedule below for the posting and due dates of the exams.

Make-up exams will be arranged **ONLY IF** your absence is work-related and cannot be avoided. For planned absences (such as business travel or conferences), please let me know as soon as you are aware of these events so we can arrange for an alternative time/date for the exam. In the event of absence due to emergencies, the weight of one exam will be assigned to the other exam. For either planned or emergency-related absences, please provide supporting documents for the absence (for example, a doctor's note, business travel itinerary, etc.).

### **Case**

We will use one Darden case in this course. Please go to <https://www.study.net/default.asp> and click on "Register" on the top right-hand corner to register as a student (no cost to register). Once you have registered, please look for University of North Carolina at Charlotte and course name (FINN 6211: Fixed Income Securities and Credit Risk (Spring 2021), Instructor is Tao-hsien dolly King, Course ID is "FINN 6211") and you should be able find one case under this course name: Baker Adhesives (UVA-F-1516). To have online viewing in PDF and print right of the case, you would need to purchase the royalty (course price is \$3.70 for the case). **You only need to pay \$3.70 to download the PDF file of the case and print it out.** You do **NOT** need to buy the Course TEXTPAK (the printed hard copy which costs an additional \$1.05). If you have any questions, let me know. We will use this case for a homework assignment.

### **Group Exercises**

There will be two group exercises. The class will be divided into two-person groups and given a specified time to work on each exercise in the assigned groups. This is a good opportunity to demonstrate your analytical skills and teamwork abilities. In each exercise, only one completed set of answers per group needs to be submitted. Each exercise will account for 5% of your grade.

### **Grading:**

Three Homework Assignments      30%

Min (Midterm Exam, Final Exam)	10%
Max (Midterm Exam, Final Exam)	50%
Two Group Exercises	10%
<b>Total</b>	<b>100%</b>

Grade Range:   A: 90 to 100  
                       B: 80 to 89  
                       C: 70 to 79, etc.

*Grades will be curved if necessary.*

### **UNC Charlotte “Code of Student Academic Integrity” (the Code)**

*All UNC Charlotte students have the responsibility to be familiar with and to observe the requirements of The UNC Charlotte Code of Student Academic Integrity (see the Catalog). This Code forbids cheating, fabrication or falsification of information, multiple submission of academic work, plagiarism, abuse of academic materials (such as Library books on reserve), and complicity in academic dishonesty (helping others to violate the Code). Any further specific requirements or permission regarding academic integrity in this course will be stated by the instructor, and are also binding on the students in this course. Students who violate the Code can be punished to the extent of being permanently expelled from UNC Charlotte and having this fact recorded on their official transcripts. The normal penalty is zero credit on the work involving dishonesty and further substantial reduction of the course grade. In almost all cases, the course grade is reduced to "F." If you do not have a copy of the Code, you can obtain one from the Dean of Students Office or access it online at <http://www.legal.uncc.edu/policies/ps-105.html>. Standards of academic integrity will be enforced in this course. Students are expected to report cases of academic dishonesty they become aware of to the course instructor who is responsible for dealing with them.*

### **Use of Cell Phones and Other Communications Devices**

The use of cell phones or other communication devices is disruptive and is therefore prohibited during class. Except in emergencies, those using such devices must leave the classroom for the remainder of the class period.

### **Disability Services**

Students in this course seeking accommodations to disabilities must first consult with the Office of Disability Services (phone 704-687-4355, 230 Fretwell Building) and follow the instructions of that office for obtaining accommodations.

## Course Schedule

Date	Topic	Readings
Jan 25	Introduction to the Fixed Income Securities (Lecture 1)	Fabozzi Ch.1. Tuckman Ch. 1
Feb 1	Lecture 1, continued Bond Valuation and Yields (Lecture 2)	Fabozzi Ch. 2, 3 Tuckman Ch. 3
Feb 8	Spring Recess – No Class	
Feb 15	Bond Price Volatility (Lecture 3) <b>Group Exercise 1 posted</b>	Fabozzi Ch. 4 Tuckman, Ch. 4
Feb 22	Lecture 3, continued <b>Group Exercise 1 due</b> <b>HW #1 Posted</b>	
Mar 1	Factors Affecting Bond Yields and the Term Structure of Interest Rates (Lecture 4)	Fabozzi Ch. 5 Tuckman Ch. 2
Mar 8	Major Fixed Income Sectors (Lecture 5) <b>HW#1 Due</b>	Fabozzi Ch. 6, 7, 9
<b>Mar 15</b>	<b>Midterm Exam will be take-home. Exam will be posted at 5:30pm Monday 3/15/2021, due date/time is 11:59pm Tuesday 3/16/2021</b>	
Mar 22	Mortgage Loans and Agency Pass-through Securities (Lecture 6)	Fabozzi Ch. 10, 11 Tuckman Ch. 20
Mar 29	CMOs and Analysis of MBS (Lecture 7)	Fabozzi Ch. 12, 19
Apr 5	Bonds with Embedded Options (Lecture 8) <b>Group Exercise 2 posted</b>	Fabozzi Ch. 18, 20
Apr 12	Credit Risk (Lecture 9) <b>Group Exercise 2 due</b>	Fabozzi Ch. 21, 22
Apr 19	Bond Portfolio Management (Lecture 10) <b>HW #2 Posted</b>	Fabozzi Ch. 24, 25
Apr 26	Lecture 10, continued Hedging (Lecture 11)	Tuckman Ch. 5, 6

### Course Schedule (continued)

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Date	Topic	Readings
May 3	Lecture 11, continued <b>HW#2 Due</b>	
<b>May 10</b>	<b>HW#3: Baker Adhesives Case due (answer all questions for this case)</b> <b>Final exam will be take-home. Exam will be posted at 5:30pm Monday 5/10/2021, due date/time is 11:59pm Tuesday 5/11/2021</b>	

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## Useful Web Links

### Bond Markets

**US Department of Treasury:** <http://www.ustreas.gov/>

General discussion of today's events in the bond market, with the current yield curve:

**Bloomberg:** <http://www.bloomberg.com/markets/rates-bonds>

**CNN Money:** <http://money.cnn.com/markets/bondcenter/>

**Reuters:** <https://www.reuters.com/markets/bonds>

Historical data on interest rates:

**Federal Reserve Interest Rate data:** <http://www.federalreserve.gov/releases/h15/update/>

**Federal Reserve Economic data:** <http://research.stlouisfed.org/fred2/>

### Bond Resources

Information on the bond markets:

**SIFMA:** <http://www.sifma.org/>

**An Investors Guide to Bond Basics:** <http://www.investinginbonds.com/>

### Exchanges and Derivatives

**CME Group:** <http://www.cmegroup.com/>

**The International Swaps and Derivatives Association (ISDA):** <http://www.isda.org/>

### Credit Rating Agencies

**Moody's:** <http://www.moody.com/>

**S&P:** <http://www.standardandpoors.com/>

**Fitch:** <http://www.fitchratings.com/>

### Bond Managers

Leading fixed-income managers:

**Pimco:** <https://www.pimco.com/>

**BlackRock:** <http://www.blackrock.com/>

**Goldman Sachs:** <http://www.goldmansachs.com>