

Fisher College of Business
The Ohio State University
Business Finance 4223
Fixed Income

Professor:	Thien T. Nguyen	Office Hours:	By appointment
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Course homepage: <http://carmen.osu.edu>

Lecture slides, assignments and other material will be posted here, so it is important that you regularly check the course homepage.

The best way to contact me is via email. It is **important** that you either email me, make an appointment for office hours, or talk to me after class if you are having difficulty with topics that we have discussed in class or the problem sets.

1 Goals

The goal of this course is to learn the basics of Fixed Income and Credit Risk. The first two-thirds of the course will largely focus on interest rate risk and derivative securities related to interest rates. The last third of the course will focus on corporate bonds and credit default swaps. This course is an intensive 7-week course, and I expect that it will be one of the more quantitative courses at Fisher College. I will focus largely on the tools, applications, and concepts that go into Fixed Income and Credit Risk analysis. You should expect to apply many formulas and do many calculations. In some cases, you will need to use Excel to do calculations.

The course will focus largely on classroom lectures/discussions and problem assignments.

2 Course Materials

- Optional Textbooks:
 - *Fixed Income Markets and Their Derivatives*, 3rd edition, Suresh Sundaresan
 - *Fixed Income Securities: Valuation, Risk, and Risk Management*, Pietro Veronesi

Comments:

1. The first few weeks of the course will be closest to Veronesi's book and the last part will be closest to Sundaresan's book.
 2. The OSU Library provides online access to many books including the Sundaresan and Veronesi books. Look for the eBook format after a search from the library website.
- Lecture slides: to be posted on the course homepage
 - Assignments: to be posted on the course homepage

3 Course Evaluation

Grading: 30% Assignments, 30% Midterm, 40% Final + extra credits

- Class participation (extra 5%): I encourage you to ask questions in class as this will help both you and your classmates to better understand the material. Moreover, asking question in class will help with your grade as well. **Only active participation earns you credit.** *For each legitimate question/comment, you'll get 1% of the grade, for a maximum of 5% of your grade.* Please email me after class *every time* you participate so that I can have a record of how many points you earned.
- Assignments: These are to be handed in and can be done in groups of up to four students. These are intended to allow you the chance to apply the concepts learned in class. Tentatively, there will be three assignments:
 1. Treasury Bonds and Trades
 2. Interest Rate Derivatives
 3. Credit Risk
- Midterm exam: The exam will be closed books and closed notes. You will be allowed to use a calculator (but not a computer nor a smart phone) and a cheat sheet (one-sided, 8.27 in \times 11.7 in). You can write/type whatever you want on this sheet.
- Final exam: The exam will be closed books and closed notes. *It will be cumulative but emphasize more on materials after the midterm.* You will be allowed to use a calculator (but not a computer nor a smart phone) and a cheat sheet (one-sided, 8.27 in \times 11.7 in). You can write/type whatever you want on this sheet.

The date and time: February 26, 2019 at the same time as regular class meeting.
- Your grade will be based on where you fall in the distribution for the class.

4 Policies

Students with disabilities. Students with disabilities who request help will be given reasonable accommodation with the assistance of the University Office of Disability Services (292-3307, <http://www.ods.ohio-state.edu/>). Feel free to speak to me in private about any related issues.

Academic misconduct. Students are expected to abide by the Fisher College of Business Honor Code.

Late homework. Late homework will not be accepted. If there is a medical emergency during the period between when the homework is posted and the due date, we will use the grade of your next homework. If you miss the last homework of the class due to illness, we will use your final exam grade. *Proper written documentation from an appropriately accredited professional is required when you are back to class in this case.*

Class attendance. You are expected to attend all classes. While the posted slides are comprehensive, not all intermediate steps are included. Thus it will be helpful to attend lectures. *You are responsible for all announcements in class regardless of attendance.*

Questions outside of class. For any questions that have not been sufficiently answered in class, email me or make an appointment for office hours.

Absence from exams. Absence from exams will only be excused due to legitimate emergencies (like medical emergency for example) with written documentation from an appropriately accredited professional. You must present the documentation to reschedule the exam, and this must be done before the semester ends.

5 Course Outline

The following schedule is *tentative and subject to change based on how the class progresses*. In particular, homework will only be posted when we are done with the topic under which “Post homework” is listed. So for example, homework 1 will not be posted until we are done with topic 4 on “Interest Rate Risk Management and Bond Trading.” All listed readings are optional, though they may help to enhance your understanding of the lecture slides.

Valuation Basics

1. Introduction to Fixed Income Markets
 - Veronesi 1
2. Bond Valuation
 - Veronesi 2
3. Duration and Convexity
 - Veronesi 3
4. Interest Rate Risk Management and Bond Trading
 - Veronesi 4
 - Post homework 1

Derivatives

5. Spot Rates and Forward Rates
 - Veronesi 5
6. Interest Rate Swaps and Floating Rate Bonds
 - Veronesi 2.5, 5.4
7. Midterm Review
8. Midterm Exam
9. Interest Rate Options I
 - Veronesi 9, 11.1, 12.1
10. Interest Rate Options II
 - Veronesi 9, 11.1, 12.1
 - Post homework 2

Credit Risk

11. Introduction to the Corporate Bond Market & Bond Ratings
 - Sundaresan 10
12. The Merton Model & Corporate Bond Valuation
 - Sundaresan 10
 - Post homework 3
13. Credit Default Swaps
 - Sundaresan 18
14. Final Review