

School of Administrative Studies
Faculty of Liberal Arts and Professional Studies

Fixed Income Securities and Risk Management

Course Number: **AP/ADMS 4504 Sections M and N**
Term: **Winter 2021**

Course Outline

Instructor: Professor Xiaofei Li

Class Hours: Section M, Wednesdays, 7 – 10 pm, online
Section N, Wednesdays, 4 – 7 pm, online

Office Hours: by e-mail only

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ESSENTIAL NOTICE: PLEASE READ THIS FIRST

This course is online due to COVID-19. Before every scheduled class, on a weekly basis, I will post the lecture recording, PowerPoint slides, detailed lecture notes, and supporting documents (if there is any) on eClass (i.e., Moodle). **Our class is asynchronous and an online session at the scheduled class time is not necessary.** You are responsible for studying all the posted course materials and the textbook. Please feel free to ask me questions by e-mail.

In order to make an online course work, you have to keep working every week rather than leaving everything to the end of the course. You will be responsible for owning and maintaining a computer (not a phone) with Internet connection that will allow you to participate in all aspects of this course.

Course Description

This course introduces you to fixed income securities and markets. Topics covered include: debt securities, risks of investing in bonds, the pricing of fixed income securities, the measurement of interest rate risk, the term structure and volatility of interest rates, mortgage-backed and asset-backed securities, the valuation of mortgage-backed and asset-backed securities, credit analysis, and interest rate derivatives etc. A notable feature of this course is that it is based on the Chartered Financial Analyst (CFA) curriculum, thus preparing you for writing the fixed income parts of both the Level I and Level II of the CFA exams. *However, please note that this course is not a CFA prep course.* This course is both rich in content and fast in pace. So, significant out of class work is required for each of you.

Prerequisite

AP/ADMS 3531 (Personal Investment Management) is the prerequisite. **You are also highly recommended to take AP/ADMS 4503 (Derivative Securities) at your convenient time. But AP/ADMS 4503 is no longer a co-requisite for this course.**

Student Evaluation

Take-home Midterm Exam	35%
Take-home Final Exam	45%
Term Paper	20%

Textbook

Fixed Income Analysis, third edition, Barbara S. Petitt, Jerald E. Pinto, and Wendy L. Pirie (edited), John Wiley & Sons, Inc., 2015 (hereafter, 3rd), or **Fixed Income Analysis, fourth edition**, James F. Adams and Donald J. Smith (edited), John Wiley & Sons, Inc., 2019 (hereafter, 4th).

Supplementary Readings

1. **Bond Markets, Analysis, and Strategies**, seventh, eighth, or ninth edition, Frank J. Fabozzi, Pearson Education Inc., 2010 for the seventh edition, 2013 for the eighth edition, or 2016 for the ninth edition.
2. **Fixed Income Securities: Tools for Today's Markets**, second edition, Bruce Tuckman, John Wiley & Sons, Inc., 2002.

Please note: A number of references will also be posted on the course website throughout the semester. You are required to read these references.

Method of Instruction

Your active participation is encouraged. You are required to think, to analyze, to evaluate, and to apply problem-solving techniques. You are also expected to complete the assigned reading before each class.

Midterm and Final Exams

Both the midterm and final exams are *take-home* and involve numerical questions only. There is no make-up midterm exam. The midterm exam is **on Monday, February 22nd**. You will be given 24 hours to complete the midterm exam and return your answers to me by e-mail. **The details of the midterm exam will be provided later.** The final exam is non-cumulative, i.e., it only tests the topics after the midterm exam, between Weeks 6 and 12. **The date and duration of the final exam are to be announced.**

If you miss the midterm exam for a legitimate reason, your final exam performance relative to other students in the class will be used to estimate your midterm exam mark.

The estimation and any further adjustment will be entirely at the discretion of the Course Director/Area Coordinator and are not subject to any appeal. All students who need a passing grade for the course must write the final exam.

Note: It is the policy of the School of Administrative Studies Finance Area that **instructors will not sign a DSA form if a student misses both the midterm and final exams**. Students in this situation will need to petition for a remedy appropriate to their circumstances.

Formula Sheets

Because the midterm and final exams are both take-home, formula sheets will not be provided at the exams. You may use the formula sheets in the previous terms as a reference. These sample formula sheets are posted on eClass.

Term Paper

You will need to write a term paper on fixed income securities and markets. Please submit a paragraph of abstract to me for approval **by our fourth class on February 3rd**. Your abstract should indicate the title of your term paper, research objective, research methodology, and sources of data (if needed) etc. The term paper is due **by our last class on April 7th**. The paper may be either qualitative or quantitative and may deal with any topic of fixed income securities and markets in any country. However, when writing your paper, you must apply the concepts and tools learned in our class. The term paper cannot exceed ten pages (single-sided) in length, which should include all the tables, graphs, equations (if there is any), and references etc. Lastly, please note that a term paper is not equivalent to a case study, and I will not accept any case study in lieu of term paper.

Financial Calculator

A financial calculator is required. If you will pursue the CFA designation in the future, note that only two types of calculator are currently allowed for the CFA exams: the Texas Instruments BAII Plus (BAII Plus) and the Hewlett-Packard 12C (HP-12C).

Academic Honesty and Integrity

In this course, we strive to maintain academic integrity to the highest extent possible. Breaches of academic integrity range from cheating to plagiarism (i.e., the improper crediting of another's work, the representation of another's ideas as your own, etc.). All instances of academic dishonesty in this course will be reported to the appropriate university authorities, and can be punishable according to the Senate Policy on Academic Honesty:

<https://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/>
Relevant University /LA&PS/ School Regulations

The regulations on many aspects of coursework that apply to you are on this site:

<http://sas.laps.yorku.ca/students/>

You are responsible for understanding and following these regulations.

Deferred Standing – Missed Final Exam

Deferred standing may be granted to students who are unable to write their final examination at the scheduled time. In order to apply for deferred standing in an AP/ADMS class, students must register at:

<http://sas-app.laps.yorku.ca>

The DSA and supporting documentation must be submitted no later than five (5) business days from the date of the exam. These requests will be considered on their merit and decisions will be made available by logging into the same link as above. No individualized communication will be sent from the School to the students (no letter or e-mails).

Tentative Course Schedule

The topic order will be as stated below. Depending on time constraint some topics may be subject to minor changes.

Week	Date		Topic and Textbook Material
1	January 13 th		Features of Debt Securities, and Risks in Bond Investments 3 rd Chapter 1, or 4 th Chapter 1
2	January 20 th		Overview of Bond Sectors, and Understanding Yield Spreads 3 rd Chapter 2, or 4 th Chapter 2 and Section 7.4
3	January 27 th		Introduction to the Fixed Income Valuation, and Duration and Convexity 3 rd Chapters 3 and 4, or 4 th Chapters 3 and 5
4	February 3 rd		Yield Measures, Spot Rates, and Forward Rates 3 rd Chapter 10, or 4 th Section 7.2
			Term Paper abstract is due

5	February 10 th		Term Structure and Volatility of Interest Rates PowerPoint slides and class notes
	Take-home Midterm Exam is on February 22nd		Midterm Exam covers Weeks 1 - 5
6	February 24 th		Binomial Model and Convertible Bonds 3rd or 4th Sections 8.1 – 8.3 and Sections 9.3.5 – 9.6
7	March 3 rd		Mortgage-Backed Securities 3rd Chapter 7, or 4th Sections 4.4 – 4.6
8	March 10 th		Asset-Backed Securities 3rd Chapter 7, or 4th Sections 4.2 – 4.3, Sections 4.7 – 4.8, and Chapter 11
9	March 17 th		Monte Carlo Simulation Model 3rd or 4th Section 8.4
10	March 24 th		General Principles (or Fundamentals) of Credit Analysis 3rd Chapter 5, or 4th Chapter 6
11	March 31 st		Credit Analysis Models 3rd Chapter 6, or 4th Chapter 10
12	April 7 th		Modelling the Term Structure of Interest Rates, and Interest Rate Derivatives 3rd Chapter 10, or 4th Sections 7.5 – 7.6 Term Paper is due