

# School of Administrative Studies

## Faculty of Liberal Arts and Professional Studies

### Fixed Income Securities and Risk Management

Course Number: **AP/ADMS 4504 M**  
Term: **Winter 2024**

### Course Outline

**Instructor** : Saikat Sarkar

**Class Hours and Room**: Section M, Wednesdays, 7 – 10 pm, in [ACW-106](#)

**Office**: Atkinson 430

**Office Hours**: Wednesdays, 3.00 pm – 5.30 pm, or by appointments

**E-mail**: [sarkars@yorku.ca](mailto:sarkars@yorku.ca)

### 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. This course is both rich in content and fast in pace. Therefore, significant out of class work is required for each of you.

### Prerequisites

AP/ADMS 3530 (Finance) and AP/ADMS 3531 (Personal Investment Management) are prerequisites. **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

Attendance and Participation	07%
Assignments (2 @ 9% each)	18%
Midterm Exam	35%
Final Exam	40%

## **Textbooks**

*Fixed Income Analysis, Second Edition*, Frank J. Fabozzi (edited), John Wiley & Sons, Inc., 2007 (hereafter, **2<sup>nd</sup>**), **used book**.

## **OR**

*Fixed Income Analysis, Fifth Edition*, CFA Institute, James Adams, and Donald Smith (edited), John Wiley & Sons, Inc., 2022. (hereafter, **3<sup>rd</sup>**).

## **Supplementary Readings**

1. *Bond Markets, Analysis, and Strategies, Tenth Edition*, Frank J. Fabozzi and Francesco A. Fabozzi, The MIT Press, 2021.

2. *Fixed Income Securities: Tools for Today's Markets, Third Edition*, Bruce Tuckman, John Wiley & Sons, Inc., 2012.

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

## **Method of Instruction**

A combination of lectures, discussions and problem solving will be used. PowerPoint slides used in the lectures are available from a link on the course website. Throughout the course, your active participation is encouraged. You are required to think, to analyse, to evaluate, and to apply problem-solving techniques.

## **Written Assignments**

There are two assignments. Assignments will be posted on the course website at least three weeks in advance of the due date. Assignments involve problem-solving and short answers and must be submitted individually in hard copies.

Assignments are due at the start of the class on the assigned date. Late assignments will **NOT** be accepted. If your assignment is late, you will receive a mark of **zero (0)**. Under **no** circumstances will faxed or photocopied assignments be accepted. **Neither** can an assignment be submitted by e-mail.

## **Midterm and Final Exams**

Both midterm and final exams are **closed book** and involve **problem-solving and short answers**. If you miss a 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. There is **NO** make up midterm exam. The estimation and any further adjustments will be entirely at the discretion of the Course Director/Area Coordinator and not subject to any

appeal. Students with a conflict due to religious reasons will be accommodated. Please inform the Course Director in writing by the fourth class if you have such a conflict. All students who need a passing grade for the course must take the final exam.

If you miss the final exam, you should submit a Deferred Standing Agreement (as described in the next section) if you have written the mid-term exam. [It is the policy of the Admin Studies Finance Area that instructors will NOT sign a DSA form if you miss both the midterm and final exams. Students in this situation will need to petition for a remedy appropriate to their circumstances.](#)

If you think an error has been made in the marking and you would like the course director to look at it again, then please submit a written request in an email for a review with valid reasons for the review. But, keep in mind that after reviews your score may go lower, remain same or go higher depending on your answers and marking scheme.

### **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).

### **Formula Sheets**

The formula sheets that you will need for both the midterm and final exams will be posted on the course website at least one week prior to the exams. Do **not** bring the formula sheets to the exams with you. You will be provided with copies of the formula sheets at the exams.

### **Attendance and Participation:**

Attendance (including active participation) is important for learning. You are expected to attend each in-person lecture and encouraged to participate actively in class. 10 marks will be based on attendance (0.5 for each of 8 sessions taken randomly starting from the third session, totaling 4 marks), and participation (3 marks) based on my subjective assessment of your class participation (includes asking meaningful questions, answering my questions or adding comments). Please do not make any assumptions here. One could receive a low mark even if one has attended every class because of failure to participate actively. One could receive even lower mark because one does not attend interactive classes regularly.

## Tentative Course Schedule

The topic order will be as stated below. However, if we cannot finish the material listed in a week, the remainder will be carried forward to the following week. Depending on time constraint some topics may be subject to minor changes.

Week	Date (Section M)	Topic and Textbook Material
1	January 10	Features of Debt Securities and Risks in Bond Investments 2 <sup>nd</sup> Chapters 1 and 2, or 3 <sup>rd</sup> Chapter 1
2	January 17	Overview of Bond Sectors, and Understanding Yield Spreads 2 <sup>nd</sup> Chapters 3 and 4, or 3 <sup>rd</sup> Chapter 2
3	January 24	Introduction to the Fixed Income Valuation, and Duration and Convexity 2 <sup>nd</sup> Chapters 5 and 7, or 3 <sup>rd</sup> Chapters 3 and 5 <b>Assignment 1 is posted on January 23<sup>rd</sup></b>
4	January 31	Yield Measures, Spot Rates, and Forward Rates 2 <sup>nd</sup> Chapter 6, or 3 <sup>rd</sup> Chapters 3 and 7
5	February 7	Term Structure and Volatility of Interest Rates 2 <sup>nd</sup> Chapter 8
6	February 14	Binomial Model and Convertible Bonds 2 <sup>nd</sup> Chapter 9, or 3 <sup>rd</sup> , Chapter 8 Sections 8.1 – 8.6 and Chapter 9 Sections 9.1– 9.6 <b>Assignment 1 is due on February 14<sup>th</sup></b>
<b>Midterm Exam</b> <b>February 25<sup>th</sup>, Sunday,</b> <b>Room: ACE 001</b> <b>Time: 6:00-8:00pm</b>		<b>The midterm exam will test topics taught in weeks 1– 5.</b>
7	February 28	Mortgage-Backed Securities 2 <sup>nd</sup> Chapter 10, or 3 <sup>rd</sup> Chapter 4.5 – 4.7
8	March 6	Asset-Backed Securities 2 <sup>nd</sup> Chapter 11, or 3 <sup>rd</sup> Chapter 4, Chapter 11

9	March 13		<p>Monte Carlo Simulation Model</p> <p>2<sup>nd</sup> Chapter 12, <i>or</i> 3<sup>rd</sup> Chapter 8 Section 8.4</p> <p><b>Assignment 2 is posted on March 13<sup>th</sup></b></p>
10	March 20		<p>General Principles (or Fundamentals) of Credit Analysis</p> <p>2<sup>nd</sup> Chapter 15, <i>or</i> 3<sup>rd</sup> Chapter 6</p>
11	March 27		<p>Credit Analysis Models</p> <p>2<sup>nd</sup> Chapter 15, <i>or</i> 3<sup>rd</sup> Chapter 10</p>
12	April 3		<p>Modelling the Term Structure of Interest Rates, and Interest Rate Derivatives</p> <p>2<sup>nd</sup> Chapter 13, <i>or</i> 3<sup>rd</sup> Chapter 7.5 – 7.7</p> <p><b>Assignment 2 is due in the last class on April 3<sup>rd</sup></b></p>

## [RELEVANT UNIVERSITY REGULATIONS](#)

### **Deferred Exams – 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).

It is the policy of the SAS finance area that instructors will NOT sign a DSA form if you miss one (or both) midterm exams and the final exam. Students in this situation will need to petition for a deferred exam, late withdrawal or a remedy appropriate to their circumstances.

### **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.