School of Administrative Studies
Faculty of Liberal Arts and Professional Studies

AP/ADMS 4504 Fixed Income Securities

Fall 2026 – Course Outline (updated: August 30)

PLEASE READ THE OUTLINE CAREFULLY

Note: Tentative course outline. Further revisions may be posted before the first day of class. Our fall term goes from Monday September 14 to Monday December 7. There will be no class on Monday October 12 (Reading Week).

Instructor: Nabil Tahani, Ph.D.

eClass: *Access to the website is granted automatically to enrolled students.*

Email: ntahani@yorku.ca (*Note: You must use your yorku.ca email account. Include ADMS4504 in the subject line and include your **full name** and **student number** in the body of the message.*)

Class hours: Mondays 11:30 – 2:30 pm, in **CLHC 110**.

Office hours: After class or over Zoom by appointment.

Course Description

This course provides a comprehensive introduction to fixed income securities and markets, equipping students with the foundational knowledge and analytical tools necessary to understand and evaluate various types of debt instruments. Students will explore the characteristics, pricing, and risk profiles of a wide range of fixed income securities, including government and corporate bonds, as well as more complex instruments. Key topics covered in the course include the structure and features of debt instruments, the risks associated with investing in bonds (such as interest rate risk, credit risk, and reinvestment risk), and the methodologies used to price fixed income securities. Students will gain an in-depth understanding of **duration and convexity as measures of interest rate risk**, as well as the implications of the term structure and volatility of interest rates on bond valuation. In addition, the course incorporates practical applications using spreadsheet tools and computational methods, enabling students to use Excel to perform bond pricing, analyse yield measures, and build models for interest rate risk analysis and fixed income portfolio management. Students will also be introduced to simulation-based techniques, including **Monte Carlo simulations**, for evaluating interest rate paths and pricing uncertainty in fixed income markets. In addition to traditional bonds, the course delves into structured products, focusing on the valuation and risk analysis of mortgage-backed securities (MBS) and asset-backed securities (ABS). Special attention is given to **mortgage-backed securities (MBS)** and the behaviour of cash flows under changing interest rate environments, as well as the **pricing of bonds with embedded options**, such as callable and putable bonds. The course also introduces techniques for assessing credit

quality through credit analysis. The course further covers the use of interest rate derivatives, such as swaps, futures, and options, for hedging and portfolio management purposes. A distinctive aspect of this course is its alignment with the **Chartered Financial Analyst (CFA)** curriculum. It is specifically designed to prepare students for the fixed income components of both Level I and Level II of the CFA exams, while maintaining academic rigor and practical relevance. Due to the breadth and depth of content, and the fast-paced nature of the lectures, students are expected to commit significant time outside of class for reading, problem-solving, and review. Active participation and consistent effort are essential for mastering the material and succeeding in both the course and the CFA exams.

Prerequisites

AP/ADMS 3530 (Finance) and **AP/ADMS 3531** (Personal Investment Management) must be completed with a passing grade before taking the course. It is also recommended that you take AP/ADMS 4503 concurrently with or before this course.

Student Evaluation

Group Assignments (2)	15%
Quizzes (5)	10% (in-class, 2% each)
Midterm Exam	35%
Final Exam	40%

Recommended Textbook:

- ***Fixed Income Analysis*, 5th edition**, CFA Institute, James Adams, and Donald Smith, John Wiley & Sons, Inc., 2022.
  (Please visit https://www.wiley.com/en-ca/Fixed+Income+Analysis%2C+5th+Edition-p-9781119850540 for pricing details).

Supplementary Readings

- ***Bond Markets, Analysis, and Strategies***, 10th edition, Frank J. Fabozzi, Pearson Education Inc., 2021.
- ***Fixed Income Securities: Tools for Today's Markets***, 4th edition, Bruce Tuckman, John Wiley & Sons, Inc., 2022.
- Several articles will also be posted on the course website throughout the semester. You are required to read these references since they may be tested in the exams.

Method of Instruction

This course follows a **flipped classroom** model. Each week, we will review key topics and work through practice problems, which are posted along with the slides in advance. To fully benefit, you are expected to complete assigned readings and attempt the practice problems before class. The course combines lectures, discussions, and problem-solving sessions, with supporting materials available on the course website. Active participation is encouraged, and you'll be expected to think critically and apply analytical techniques during class and in your assignments. Graded work will be assigned almost every week to encourage consistent engagement and provide regular feedback. The course structure is designed to support steady progress, not last-minute cramming. Some elements of the course may be adjusted as needed based on class progress.

Calculator

You need a handheld non-programmable calculator that includes basic math functions (e.g. logarithm, exponential, square root and power functions). It also is helpful if the calculator includes basic financial functions (e.g. PV, FV, PMT). If you will pursue the CFA designation in the future, note that only two **financial calculators** are **currently allowed for the CFA** exams: the Texas Instruments BAII Plus (and BAII Plus Pro), and the Hewlett-Packard 12C (HP-12C).

Assignments

There are two **group assignments**. Groups of **1-2** students must **be formed by the 2nd class** and shouldn't be changed. Assignments are due on the assigned date (more info on submission TBA later). Extensions for submitting an assignment after the due date with penalty may be granted on a case-by-case basis. Approval must be obtained from the course director prior to the due date of the assignment. Late assignments, if approved, will be penalized by **5% per day** (*e.g. if the assignment is marked out of 30 marks and is 2 days late, then 3 marks will be deducted from the total mark*).

Quizzes

The **quizzes will all take place in-class**. Refer to the weekly schedule for more details.

Midterm and Final Exams

The **midterm and final exams are closed book and will take place in-person**. A **formula sheet** will be posted on the course website and **will be provided** during the exam. In order to avoid any conflict with other exams, the **midterm exam is scheduled on Monday October 26, 11:30am-2:30pm**. If you **miss the midterm exam** for a legitimate reason, you will write a **cumulative final exam in coverage and in weight**. There is **NO make-up midterm exam**. Students with **conflict due to religious reasons** will be accommodated. Please inform the course director in writing by the **third class**.

The final exam will be scheduled by the RO between December 10-23. All students who need a passing grade for the course must take the final exam.

Academic Honesty and Integrity

In this course, we strive to maintain academic integrity to the highest extent possible. Please familiarize yourself with the meaning of academic integrity by completing SPARK's Academic Integrity module at the beginning of the course. 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.

Finance Area policy on DSA (Deferred Standing Agreement)

For students who miss both the midterm exam with valid documentation and the final exam, and **if their DSA is approved**, they will be required to write a **deferred comprehensive exam**, which will be longer in duration and cover more content from the first half of the course than the regular deferred final exam. **In case the DSA is denied,**

students in this situation **will need to petition** for a deferred exam, late withdrawal, or a remedy appropriate to their circumstances.

Relevant University/LA&PS/School Regulations
The regulations on many aspects of coursework that apply to you are on:
http://sas.laps.yorku.ca/students/

You are responsible for understanding and following these regulations.

Forms and Policies
Attending Physician's Statement form, for missed midterm or missed final exam:
http://www.registrar.yorku.ca/pdf/attend_physician_statement.pdf

DSA Form for missed final exam:
http://www.registrar.yorku.ca/pdf/deferred_standing_agreement.pdf

DSA Process and Petitions for ADMS classes: http://www.yorku.ca/laps/sas/links.html

Tentative Course Schedule

The topic order will be as stated below. However, if we cannot finish the material listed in a lecture, the remainder will be carried forward to the following one. Dates and topics are *tentative and subject to change with notice*.

Note that the dates for the assignments and quizzes will be posted on the course website.

Lecture	Date	Topics and Chapters Readings
1	Sept 14	Course Presentation Features of Debt Securities and Risks in Bond Investments Overview of Bond Sectors, and Understanding Yield Spreads (self-study)
2 & 3	Sept 21, 28	Introduction to Fixed Income Valuation, and Duration and Convexity
4	Oct 5	Yield Measures, Spot Rates, and Forward Rates
5	Oct 19	Yield Measures, Spot Rates, and Forward Rates Term Structure and Volatility of Interest Rates
6	Oct 26	**Midterm Exam: Lectures covered are 1-5. Room: TBA**
7 & 8	Nov 2, 9	Arbitrage-Free Valuation Framework: The Binomial Tree Model
9	Nov 16	Asset-Backed Securities: MBS, CMO, ABS and CDO
10	Nov 23	Monte Carlo Simulation Model: Valuing MBS and ABS
11	Nov 30	Modelling the Term Structure of Interest Rates, and Interest Rate Derivatives
12	Dec 7	General Principles and Models of Credit Analysis