

**FINANCE 708
Fixed-Income Analysis
Fall 2022 Course Outline**

**Master of Finance
DeGroot School of Business
McMaster University**

COURSE OBJECTIVE

This course presents an advanced treatment of core concepts and theories in the field of fixed-income securities. In particular, this course focuses on using theoretical models and pricing approaches to analyze the fixed-income securities and explain the term structure of interest rates.

INSTRUCTOR AND CONTACT INFORMATION

**Section 1: Fridays 8:30am – 11:20am DSB B105
Section 2: Thursdays 7:00pm – 10:00pm DSB B105**

Instructor: Otto Yung
yungo1@mcmaster.ca

Office: TBA

Office Hours: To be posted on course portal

Tel: To be posted on course portal

Course website: Avenue to Learn

TA: Rongzhao Ou

our@mcmaster.ca

Office: TBA

Office Hours: TBA

Tel: To be posted on course portal

COURSE ELEMENTS

Credit Value: 3	Leadership: Yes	IT skills: No	Global view: Yes
Avenue: Yes	Ethics: No	Numeracy: Yes	Written skills: Yes
Participation: Yes	Innovation: Yes	Group work: Yes	Oral skills: Yes
Evidence-based: Yes	Experiential: Yes	Final Exam: Yes	Guest speaker(s): TBD
Credit Value: 3			

COURSE DESCRIPTION

This course provides students with an understanding of fixed-income securities and their markets. In particular, the course will cover the models and methods used to value and analyze interest rate products. The course integrates theory and practice and focuses on the implementation of various models, as well as their derivation. Methods and tools needed to understand the models and related theory will also be developed.

LEARNING OUTCOMES

Upon successful completion of this course, students will be able to complete the following key tasks:

- Conduct the analysis for the fixed-income securities
 - Model immunization strategy to hedge interest rate risk
 - Use models or methods to price fixed-income securities
 - Explain the term structure of interest rates by using a variety of methods
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COURSE MATERIALS AND READINGS

Required Textbook:

Options, Futures, and Other Derivatives, 11th Edition by John C. Hull, Pearson
<http://www-2.rotman.utoronto.ca/~hull/ofod/index.html>

Optional:

Bond Markets, Analysis, and Strategies by F. Fabozzi, 9th Edition, Prentice Hall
Financial Modelling by Simon Benninga, 2nd Edition, The MIT Press

COURSE OVERVIEW AND ASSESSMENT

Grades are a measure of the performance of a student in individual courses. Each student shall be judged on the basis of how well he or she has command of the course material.

Work Type	Deliverable	Weighting	Due Date
Group	Assignment #1	20%	Saturday, October 22 nd (11:59pm)
Individual	Midterm	20%*	In-Class (October 27 th or October 28 th)
Group	Assignment #2	25%	Friday, December 9 th (11:59pm) and *Presentations (in-class – TBA - tentative)
Individual	Final Exam	35%*	During Final Exam Period

* The total weight of the midterm and the final exam combined will be 55% (note: the allocation will be one of the following: (i) 20% midterm and 35% final exam or (ii) 15% midterm and 40% final exam). The allocation will be based on the higher grade of the two allocations by each student. (Note: If the midterm is missed due to legitimate reasons (e.g., medical) the weight will be shifted to the final exam)

There will be a 20% deduction per day for late assignments.

Grade Conversion

At the end of the course your overall percentage grade will be converted to your letter grade in accordance with the following conversion scheme:

LETTER GRADE	PERCENT	POINTS
A+	90-100	12
A	85-89	11
A-	80-84	10
B+	75-79	9
B	70-74	8
B-	60-69	7
F	00-59	0

COMMUNICATION AND FEEDBACK

Students who wish to correspond with instructors or TAs directly via email must send messages that originate from their official McMaster University email account. This protects the confidentiality and sensitivity of information as well as confirms the identity of the student. Emails regarding course issues should NOT be sent to the Area Administrative Assistants.

REQUESTING RELIEF FOR MISSED ACADEMIC WORK

In the event of an absence for medical or other reasons, students should review and follow the Missed Term Work regulations that are outlined on the Master of Finance website.

<https://mfin.degrootemcmaster.ca/current-students/missed-term-work/>

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at:

www.mcmaster.ca/academicintegrity

The following illustrates only three forms of academic dishonesty:

- plagiarism, e.g., the submission of work that is not one's own or for which other credit has been obtained.
- improper collaboration in group work.
- copying or using unauthorized aids in tests and examinations.

AUTHENTICITY/PLAGIARISM DETECTION

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g., A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software.

All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

Some courses may use on-line elements (e.g., e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course.

The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

ON-LINE PROCTORING

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the [Code of Student Rights & Responsibilities](#) (the “Code”). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online**.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g., use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students’ access to these platforms.

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Students with disabilities who require academic accommodation must contact [Student Accessibility Services](#) (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University’s [Academic Accommodation of Students with Disabilities](#) policy.

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the [RISO](#) policy. Students should submit their request to their Faculty Office **normally within 10 working days** of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

EXTREME CIRCUMSTANCES

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.

RESEARCH USING HUMAN SUBJECTS

All researchers conducting research that involves human participants, their records or their biological material are required to receive approval from one of McMaster's Research Ethics Boards before (a) they can recruit participants and (b) collect or access their data. Failure to comply with relevant policies is a research misconduct matter. Contact these boards for further information about your requirements and the application process.

McMaster Research Ethics Board (General board): <https://reo.mcmaster.ca/>

Hamilton Integrated Research Ethics Board (Medical board): <http://www.hireb.ca/>

ACKNOWLEDGEMENT OF COURSE POLICIES

Your enrolment in Finance 708 will be considered to be an implicit acknowledgement of the course policies outlined above, or of any other that may be announced during lecture and/or on A2L. **It is your responsibility to read this course outline, to familiarize yourself with the course policies and to act accordingly.**

Lack of awareness of the course policies **cannot be invoked** at any point during this course for failure to meet them. It is your responsibility to ask for clarification on any policies that you do not understand.

COURSE SCHEDULE

WEEK	DATE (THURSDAY/FRIDAY)	TOPICS
1	Sept. 15/16	Bond Basics (Chapter 4)
2	Sept. 22/23	Managing Interest Rate Risk (Lecture Notes)
3	Sept. 29/30	Immunization Strategy (Lecture Notes)
4	Oct. 6/7	Approaches for Analyzing Fixed-Income Securities (e.g., with embedded options) (Lecture Notes)
5	Oct. 13/14	Interest Rate Futures (Chapter 6) and Forward Contracts (Lecture Notes)
6	Oct. 20/21	Swaps (Chapter 7)
7	Oct. 27/28	Midterm
8	Nov. 3/4	Credit Risk (Chapter 24 and Lecture Notes)
9	Nov. 10/11	Credit Derivatives (Chapter 25 and Lecture Notes)
10	Nov. 17/18	Credit Risk Analysis and Credit Risk Modelling (Lecture Notes)
11	Nov. 24/25	Wiener Process (Chapter 14) Martingales and Measures (Chapter 28)
12	Dec. 1/2	Interest Rate Derivatives: The Standard Market Models (Chapter 29) Equilibrium Models of the Short Rate (Chapter 31)
13	Dec. 8/9	No-Arbitrage Models of the Short Rate (Chapter 32) Modelling Forward Rates (Chapter 33)