

**FIN7190 (G01/A01) (3.0 CH)**  
**FIXED INCOME SECURITIES**  
**SUMMER 2023**

---

**INSTRUCTOR**

Name:	Ya Gao	Office	452 Drake Centre
Phone:	204-474-7010	Location:	
Email:	ya.gao@umanitoba.ca	Office Hours:	MW 5:30-6:00 pm, 9:30-10:00 pm
Class Time:	May. 1 <sup>st</sup> – Jun. 7 <sup>th</sup> , 2023		MW 6:15 pm-9:30 pm; SU 8:45-4:15 p

**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 across Level I and Level II (with a touch of Level III) of the CFA exams. This course is both rich in content and fast in pace. Therefore, significant out of class work is required for all students.*

**COURSE OBJECTIVES**

*This course provides students with comprehensive knowledge covering major topics in fixed income. Students are expected to understand theories and model applications of fixed income securities and its related topics, including interest rates and term structure, fixed income derivatives, and factors that corporate, as well as investors should consider when making decisions on fixed income securities. On course completion, you should be able to:*

- *Understand the defining elements of fixed-income securities and their markets.*
- *Estimate the risk and expected returns for fixed income instruments, with emphasis on interest rate risk and credit risk.*
- *Theory and application of bond evaluation.*
- *Analyze the term structure of interest rates and yield spreads.*
- *Evaluate fixed-income instruments with embedded options and unique features.*
- *Understand interest rate dynamics.*
- *Types, characteristics, and risk of securitization investments.*

**COURSE MATERIALS**

1. **Textbook:** Fixed Income Analysis, 5th edition, CFA Institute, John Wiley & Sons, Inc., 2022. ISBN-10 1119850541/ISBN-13 978-1119850540
2. **Supplementary Readings:** To better assist your learning experience, the following two supplementary readings are recommended (*optional*).
  - Fixed Income Securities: Tools for Today's Markets, 3rd edition, Bruce Tuckman, Angel Serrat, 2011. ISBN-10: 0470891696, ISBN-13: 978-0470891698.
  - The Handbook of Fixed Income Securities, 8th Edition, Frank J. Fabozzi. ISBN-10: 0071768467, ISBN-13: 978-0071768467.
3. **Financial Calculator:** A financial calculator is **required** for this course. 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 BA II Plus or BAII Plus Professional (recommended)The course will be instructed with TI BA-II Plus Professional.

## **COURSE ASSESSMENT**

### **1. Homework Assignments**

There will be **5** assignments throughout this course. Assignments, along with their due dates are available on UMLearn. In case that a due date change, announcement will be made both in class and through UMLearn announcement. Each assignment may involve problem-solving and short answers questions covering topics discussed in class. All assignments must be submitted **individually in hand-written, hard copies**. Please make sure that your writing is **legible**. Assignments are due at the start of the class on the assignment due date. Late assignments will **NOT** be accepted. If your assignment is late, you will receive a mark of zero (0) on that assignment. You may submit your assignment early before the due date. In case of absence from class on the due date, a **scanned PDF copy** of your hand-written assignment may be submitted by e-mail.

### **2. Quizzes**

During this course, there will be one quiz on assigned dates, testing the content covered last week and in the most recent assignment. There is no cheat sheet allowed during the exam and students are expected to recall formulas from memory during the quiz unless specified otherwise. The quiz will be structured and timed in a similar manner of CFA exam except the online form. Both quizzes and exams will be conducted using the Respondus LockDown browser. The browser need to be downloaded and installed. The instructor will assist you in obtaining the browser at the first lecture. Quizzes missed due to internet connection problems could be deferred/re-arranged to another date prior to the next lecture. Please contact the instructor as soon as possible in case of an internet outage.

### **3. Exams**

There will be one cumulative final for this course. The exam will be closed book. Students are permitted to bring in one 8.5 by 11-inch sheet of paper on which they can write anything on both sides. You should begin preparing your "formula" sheet immediately. Formula sheets must be hand written (both sides permitted). **NO** word-processed or photocopied material is allowed on your formula sheet. Improper formula sheets will be confiscated; offending students will be allowed to complete the exam without any formula sheet. After the exam, offending students will be referred to the Dean's office on a violation of academic integrity. However, please keep in mind that in a CFA exam, no formula sheet is allowed and you are expected to memorize all formulas.

If you miss a final examination for medical or compassionate reasons, you may be granted a deferred examination. Travel plans are not an acceptable reason to miss examinations. **University or the Undergraduate/Graduate Office of the student's home faculty/school, as appropriate, can arrange a deferred examination for you.**

**Final grades will be assigned on your total mark and relative percentile ranking to other students in the class disregard of section difference. Tentative grading scheme is provided as following:**

Percentile Ranking (100% being highest)	Grade	GPA	Performance
<b>Of all the students who get 50% or over in total mark in the course:</b>			
95.00%-100.00%	A+	4.5	Excellent
70.00%-94.99%	A	4.0	Very Good
40.00%-69.99%	B+	3.5	Good
10.00%-39.99%	B	3.0	Satisfactory
0%-9.99%	C+	2.5	Marginal
<b>Of all the students who get less than 50% in total mark in the course:</b>			

**NOTE: Class attendance is required. Missing more than 20% of this course due to absence from lectures may result in a failing grade.** It is your responsibility to inform your professor, in advance if possible, of your absence and the reason for it:

- 1) if **medical**, self-declaration form must be submitted for an illness lasting 5 consecutive days or less <https://umanitoba.ca/governance/governing-documents-students#self-declaration-for-brief-or-temporary-student-absences>, no later than 48 hours after the end of the brief absence; a medical note from your physician must be submitted for an illness lasting more than 5 days;
- 2) if a **work commitment**, a signed letter on letterhead from your supervisor is required in advance, noting clearly the date(s) you must be away for your work commitment(s);
- 3) if for **student competitions**, an email from your Asper team coach must be received in advance indicating the dates you are away at competition.

The professor will then decide how to deal with the impact of the missed classes on your final grade.

## **COURSE SCHEDULE**

### **TENTATIVE COURSE SCHEDULE (6-Week):**

You will find that the course progresses quickly and the material covered builds on earlier material. It is important to stay current in your studies. Otherwise you will not understand the new material as it is presented. If you read the text in advance of the relevant classes, you will have a much better chance of keeping pace with the material. It is the **student's responsibility** to read the assigned material **prior** to the relevant class.

<b>Lecture</b>	<b>Topic</b>	<b>Chapter</b>	<b>Dues</b>
5/1/2023	Fixed-Income Securities: Defining Elements Fixed Income Markets Introduction to the Fixed Income Valuation	Ch. 1, 2 & 3	
5/3/2023	Understanding Fixed-Income Risk and Return The Term Structure and Interest Rate Dynamics	Ch. 5 & Ch. 7	
5/8/2023	The Term Structure and Interest Rate Dynamics	Ch. 7	Assignment 1
5/10/2023	Arbitrage-Free Valuation Framework Valuation and Analysis: Bonds with Embedded Options	Ch. 8 & 9	Quiz 1
5/15/2023	Valuation and Analysis: Bonds with Embedded Options	Ch. 9	Assignment 2
5/17/2023	Fundamentals of Credit Analysis Credit Analysis Models	Ch. 6 & 10	Quiz 2
5/22/2023	<b>Victoria Day, No Class</b>		Assignment 3
5/24/2023	Credit Analysis Models Introduction to Asset-Backed Securities	Ch. 10 & Ch. 4	Quiz 3
5/29/2023	Introduction to Asset-Backed Securities Overview of Fixed Income Portfolio Management	Ch. 4 & 12	Assignment 4
5/31/2023	Overview of Fixed Income Portfolio Management Liability-Driven & Index-Based Strategies	Ch. 12 & 13	Quiz 4
6/5/2023	Liability-Driven & Index-Based Strategies Yield Curve Strategies	Ch. 13 & Ch. 14*	Assignment 5
6/7/2023	Yield Curve Strategies Q&A	Ch. 14*	Quiz 5
<b>Final Exam: TBD</b>			

## **ACADEMIC REGULATIONS AND STUDENT SERVICES**

### **HUMAN ETHICS APPROVAL FOR DATA COLLECTION**

As part of coursework, if you will be collecting data from people who are not students in this class, you must obtain Human Ethics approval from the UofM's Research Ethics Board (REB) prior to data collection. This applies to data collection such as surveys, interviews, focus groups, experiments, video recording, etc., where a respondent is solicited for participation.

If the entire class will be working on the same project, your instructor will apply for human ethics approval from the REB. If individuals or small groups of students will be working on different projects, it is the responsibility of the students to obtain approval (only one group member needs to apply). Your instructor will tell you whether s/he will be or you need to. **When in doubt, please talk to your instructor.**

Instructions and forms to apply for human ethics approval can be found at:

<http://umanitoba.ca/research/orec/ethics/guidelines.html>

In most cases, you will be using the "Protocol Submission Form" which is under the "REB Forms - Fort Garry Campus" heading.

It can take up to six weeks to process human ethics applications and obtain approval. Therefore, plan early. Note that approval must be obtained prior to data collection and cannot be obtained during the data collection phase or retroactively. Violation can get you, your instructor, and the Asper School in serious trouble with the REB.

The following do not require REB approval:

- a) Projects where students are conducting the research on themselves during class time;
- b) Projects involving the use of records or information that is in the public domain, including the use of anonymous secondary data and surveys or questionnaires that have already been published;
- c) Projects involving the use of naturalistic observation where there is no reasonable expectation of privacy (i.e. public park).
- d) Practicum or job training projects where students are fully integrated into the organization's operational practices and are not conducting research;
- e) Projects where the intent is to use the information to provide advice, diagnosis, identification of appropriate interventions or general advice for a client;
- f) Projects where the intent is to develop skills which are standard practice within a profession (e.g. observation, assessment, intervention, evaluation, auditing); or
- g) Projects where the information gathering processes are part of the normal professional relationship between the student and the participants.

**If you have any questions, please contact [humanethics@umanitoba.ca](mailto:humanethics@umanitoba.ca) or your instructor.**

## UNCLAIMED ASSIGNMENT POLICY

Pursuant to the FIPPA Review Committee's approved recommendations of August 15, 2007, all unclaimed student assignments will become the property of the faculty and will be subject to destruction six months after the completion of any given academic term.

## **STUDENT SERVICES AND SUPPORTS**

The University of Manitoba provides many different services that can enhance learning and provide support for a variety of academic and personal concerns. You are encouraged to visit the below websites to learn more about these services and supports. If you have any questions or concerns, please do not hesitate to contact your instructor or the Graduate Program Office.

<b>For Information on...</b>	<b>...follow this link</b>
Course Outlines, Year-at-a-Glance, Concentrations, Textbooks, VW Dates and Final Exams	<a href="#">Asper Graduate Student Resources</a>
Exam Rescheduling Policy - <i>Please refer to Missing a Test/Exam on page 18 of the MBA Student Handbook</i>	<a href="#">MBA Student Handbook</a>
Help with research needs such as books, journals, sources of data, how to cite, and writing	<a href="#">Library Resources</a>
Tutors, workshops, and resources to help you improve your learning, writing, time management, and test-taking skills	<a href="#">Writing and Learning Support</a>
Support and advocacy for students with disabilities to help them in their academic work and progress	<a href="#">Student Accessibility Services</a>
Copyright-related questions and resources to help you avoid plagiarism or intellectual property violations	<a href="#">Copyright Office</a>
Student discipline bylaws, policies and procedures on academic integrity and misconduct, appeal procedures	<a href="#">Academic Integrity</a>
Policies & procedures with respect to student discipline or misconduct, including academic integrity violations	<a href="#">Student Discipline</a>
Students' rights & responsibilities, policies & procedures, and support services for academic or discipline concerns	<a href="#">Student Advocacy</a>
Your rights and responsibilities as a student, in both academic and non-academic contexts	<a href="#">Your rights and responsibilities</a>
Full range of medical services for any physical or mental health issues	<a href="#">University Health Service</a>
Information on health topics, including physical/mental health, alcohol/substance use harms, and sexual assault	<a href="#">Health and Wellness</a>

Any aspect of mental health, including anxiety, stress, depression, help with relationships or other life concerns, crisis services, and counselling.	<a href="#">Student Counselling Centre</a>
Support services available for help regarding any aspect of student and campus life, especially safety issues	<a href="#">Student Support Case Management</a>
Resources available on campus, for environmental, mental, physical, socio-cultural, and spiritual well-being	<a href="#">Live Well @ UofM</a>
Help with any concerns of harassment, discrimination, or sexual assault	<a href="#">Respectful Work and Learning Environment</a>
Concerns involving violence or threats, protocols for reporting, and how the university addresses them	<a href="#">Violent or Threatening Behavior</a>

# ACADEMIC INTEGRITY

I.H. Asper School of Business, The University of Manitoba

It is critical to the reputation of the I. H. Asper School of Business and of our degrees that everyone associated with our faculty behaves with the highest academic integrity. As the faculty that helps create business and government leaders, we have a special obligation to ensure that our ethical standards are beyond reproach. Any misconduct in our academic transactions violates this trust. The University of Manitoba Graduate Calendar addresses the issue of academic misconduct under the heading "Plagiarism and Cheating." Specifically, acts of academic misconduct include, but are not limited to:

- using the exact words of a published or unpublished author without quotation marks and without referencing the source of these words
- duplicating a table, graph or diagram, in whole or in part, without referencing the source
- paraphrasing the conceptual framework, research design, interpretation, or any other ideas of another person, whether written or verbal (e.g., personal communications, ideas from a verbal presentation) without referencing the source
- copying the answers of another student in any test, examination, or take-home assignment
- providing answers to another student in any test, examination, or take-home assignment
- taking any unauthorized materials into an examination or term test (crib notes)
- impersonating another student or allowing another person to impersonate oneself for the purpose of submitting academic work or writing any test or examination
- stealing or mutilating library materials
- accessing tests prior to the time and date of the sitting
- changing name or answer(s) on a test after that test has been graded and returned
- submitting the same paper or portions thereof for more than one assignment, without discussions with the instructors involved.

Many courses in the I. H. Asper School of Business require group projects. Students should be aware that group projects are subject to the same rules regarding academic misconduct. Because of the unique nature of group projects, all group members must exercise extraordinary care to insure that the group project does not violate the policy on Academic Integrity. Should a violation occur on a group project, all group members will be held jointly accountable, no matter what their individual level of involvement in the specific violation.

Some courses, while not requiring group projects, encourage students to work together in groups (or at least do not prohibit it) before submitting individual assignments. Students are encouraged to discuss this issue as it relates to academic integrity with their instructor to avoid violating this policy.

In the I. H. Asper School of Business, all suspected cases of academic misconduct involving a graduate student (i.e. MBA, MFin, MSCM, MSc or PhD student) will be reported directly by the instructor to the Dean of the Faculty of Graduate Studies.



## FACULTY BIOGRAPHY

---

I.H. Asper School of Business, The University of Manitoba

Dr. Gao joined Asper School of Business in July 2017. She holds a Ph.D. in Finance from University of Cincinnati. Her researches focus on areas of corporate finance, including corporate ESG, regulation, corporate control, and financial institutions. Dr. Gao presented her work at major academic conferences. She has taught Corporate Finance (FIN2200), Financial Management Practices (FIN4400), Alternative Investments (FIN7130) and Special Topics: Fixed Income (FIN7260).