

**Commerce 3FD3  
Financial Modeling  
Fall 2024 Course Outline**

**Finance and Business Economics Area  
DeGroot School of Business  
McMaster University**

---

***INSTRUCTOR AND CONTACT INFORMATION***

---

**C01: Thu 8:30 – 11:20**

**CO2: Wed 14:30 - 17:20**

**CO3: Tue 11:30 – 14:20**

**Zohair Alam**

Instructor

[alam59@mcmaster.ca](mailto:alam59@mcmaster.ca)

Office: DSB 405

Office Hours: Tuesdays, 15:00 – 16:00; Thursdays, 16:00 – 17:00, or by appointment

**Zi Yang**

TA

[yangz242@mcmaster.ca](mailto:yangz242@mcmaster.ca)

Office Hours: TBD

Location: TBD

---

***COURSE ELEMENTS***

---

Credit Value: 3	Leadership: No	IT skills: Yes	Global view: Yes
A2L: Yes	Ethics: No	Numeracy: Yes	Written skills: No
Participation: Yes	Innovation: Yes	Group work: Yes	Oral skills: No
Evidence-based: Yes	Experiential: No	Final Exam: Yes	Guest speaker(s): No

---

## ***COURSE INFORMATION***

---

Lectures: 3hr x 1/wk

Course Delivery Mode: In-person

Course Description: This three-credit elective undergraduate course introduces financial modelling with MS-Excel and Python. The main focus is on configuring and solving real-world applications in corporate finance and investments. By the end of this course, students will be able to use quantitative tools (such as spreadsheets and financial libraries/functions) to model problems on topics such as capital budgeting, firm valuation, portfolio management, and risk management.

Introduction to Finance (COMMERCE 2FA3 or IBH 2BB3) and registration in level III or above in any Honours Bachelor of Commerce or Engineering and Management program; or relevant minor is a prerequisite. Strong knowledge of statistics is highly recommended. Working knowledge of MS Excel is assumed, but no prior experience with Python is required.

Note: Non-Commerce students may enrol in specific upper-year Commerce courses if they have been accepted into a Specialized Minor offered by the Faculty of Business or can demonstrate that they are pursuing an interdisciplinary minor for which the specific Commerce courses are included.

---

## ***MEETING DETAILS***

---

C01: Meets from 8:30 a.m. to 11:20 a.m. every Thursday

C02: Meets from 2:30 p.m. to 5:20 p.m. every Wednesday

CO3: Meets from 11:30 a.m. to 2:20 p.m. every Tuesday

The **first class** for each section will be:

C01: Thursday, September 5, 2024

C02: Wednesday, September 4, 2024

C03: Tuesday, September 3, 2024

Punctuality is the sign of a true professional and shows self-discipline and respect for others. Please make whatever arrangements are necessary to begin work at 8:30 a.m.

---

### ***IMPORTANT LINKS***

---

- [Mosaic](#)
- [Avenue to Learn](#)
- [Student Accessibility Services - Accommodations](#)
- [McMaster University Library](#)

---

### ***COURSE LEARNING OUTCOMES***

---

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

- Develop a conceptual framework to solve financial problems.
- Design a financial model.
- Build a financial model using MS-Excel and Python.

---

### ***COURSE LEARNING GOALS***

---

Upon successful completion of this course, students will learn and understand the following key concepts:

- Learn to use advanced techniques for analyzing financial data, for the purposes of managerial decision making.
- Learn to apply MS-Excel's various tools, including matrix multiplication and array functions, to build financial models.
- Learn the basics of programming in Python.
- Use Python to build financial models.

---

### ***REQUIRED MATERIALS AND TEXTS***

---

**Required:**

Course materials are available on Avenue To Learn: <http://avenue.mcmaster.ca/>

Benninga; Financial Modeling; Fourth (4th) Edition; The MIT Press, 2014. ISBN: 978-0262027281. The textbook is a Finance-focused modelling text, also useful in other finance courses, that cover practical examples in finance in Excel.

**Optional:**

- Yves Hilpisch, Python for Finance: Analyze Big Financial Data, 2014. ISBN: 978-1491945285. The textbook is a hands-on guide that helps both developers and quantitative analysts get started with Python and guides you through the most important aspects of using Python for quantitative finance.
- Rosenbaum, J., Pearl, J., Investment Banking, (Second Edition – University Edition) Wiley, 2013. ISBN: 978-1-118-47220-0. The textbook focuses on the primary valuation methodologies that are widely used in the industry.

**CLASS FORMAT**

This is an in-person 3-hour course. The class will consist of mini-lectures, in-class problem-solving (hands-on assignments both with MS-Excel, and Python), and lengthier discussion of the topics. There will be a short break part way through at a convenient time based on what we are working on. Please use this time to take care of personal needs of various kinds.

**COURSE EVALUATION**

The grade will be calculated as the weighted sum of students' marks for their five assignments, two take-home midterm exams, and a final exam. The weights and description of deliverables are as follows:

<b>Deliverables</b>	<b>Description</b>	<b>Weight</b>
Assignments	Time value of money, stock and bond valuation, Python basics, risk-return,	20% (5 x 4%)
Midterm 1	Time Value of money, stock and bond valuation (Excel-based)	25%
Midterm 2	Risk-return, CAPM. Analysis in Excel and Python.	25%
Final Exam	Comprehensive and computed based (Excel and Python). Date to be determined by registrar.	30%
<b>Total</b>		<b>100%</b>

## ***COURSE DELIVERABLES***

### ***Assignments***

There are five assignments, each worth 4% of the overall grade. Thus, they are overall worth **20%** of the final grade. Details of each assignment will be provided a week before they are due. They will be closely related to the material discussed in the lectures. Students are required to submit their assignments before the start of the class on the due date. See course schedule for due dates for each section. Late submissions will not be accepted.

### ***Midterm #1 – Take home exam***

Each midterm comprises **25%** of the overall grade. Students are required to submit their midterm before the start of the class in week 6. See course schedule for due dates for each section.

The first midterm will focus on all topics discussed prior to mid-term recess: time value of money, stock and bond valuation. Details of the exam will be given two weeks prior to the due date. The exam is to be done individually. Collaboration with other students is not allowed. Students will be graded based on the accuracy and clarity of their work. Late submissions will not be accepted.

### ***Midterm #2 – Take home exam***

Each midterm comprises **25%** of the overall grade. Students are required to submit their midterm before the start of the class in week 11. See course schedule for due dates for each section.

The second midterm will focus on all topics discussed after mid-term recess: coding in python, risk-return tradeoffs and CAPM. Details of the exam will be given two weeks prior to the due date. The exam is to be done individually. Collaboration with other students is not allowed. Students will be graded based on the accuracy and clarity of their work. Late submissions will not be accepted.

### ***Final Exam***

The final exam will be cumulative and worth **30%** of the overall grade. It will be in-person and computer based. Students will be responsible to ensure that MS-Excel and Python work properly on their devices prior to the exam. It will cover all the topics that we will cover in the course. The date of the final exam is to be set by the registrar.

## ***LATE ASSIGNMENTS***

Assignments and take-home mid-term exams are provided well in advance. Students will have more than sufficient time to complete them on time. Thus, late submissions will not be accepted.

---

## **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.

Please start your email's subject line with "3FD3", so that I don't miss your communication.

---

## **REQUESTING RELIEF FOR MISSED ACADEMIC WORK**

---

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar "[Requests for Relief for Missed Academic Term Work](#)" and the link below\*;

<http://ug.degrootemcmaster.ca/forms-and-resources/missed-course-work-policy/>

\* Non-Commerce students must follow the Missed Course Work protocols outlined by their home faculty and Program Office.

---

## **COURSE MODIFICATION**

---

From time to time there may be a need to remove/add topics or to change the schedule or the delivery format. If these are necessary, you will be given as much advance notice as possible.

---

## **GENERATIVE AI**

---

Unless specifically told otherwise, students may use generate AI throughout this course in whatever way enhances their learning; no special documentation or citation is required.

## ***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](#).

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. Avenue to Learn, 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](http://www.mcmaster.ca/academicintegrity).

## ***COURSES WITH AN ON-LINE ELEMENT***

**Some courses may** use on-line elements (e.g. e-mail, Avenue to Learn, 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.

---

### ***ONLINE 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](mailto: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, Avenue to Learn and/or McMaster email.

---

### ***ACKNOWLEDGEMENT OF COURSE POLICIES***

---

Your enrolment in Commerce **3FD3** 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**

**Commerce 3FD3: Section C01  
Financial Modeling  
Fall 2024 Course Schedule**

WEEK	DATE	TOPICS	READINGS	DUE DATES
1	Thu. Sept. 5	Introduction to Financial Modeling & Time Value of Money	Chapters 31-35 Chapters 1-7	
2	Thu. Sept. 12	Time Value of Money	Chapters 1-7	
3	Thu. Sept. 19	Stock Valuation	Chapters 2,3,4,5,6	Assignment 1 (due before class begins)
4	Thu. Sept. 26	Stock Valuation	Chapters 2,3,4,5,6	
	Thu. Oct 3	Bond Valuation	Chapters 20 - 21	Assignment 2 (due before class begins)
5	Thu. Oct 10	Bond Valuation	Chapters 20-21	Assignment 3 (due before class begins)
	Thu. Oct 17	<b>Mid-term recess</b>		
6	Thu. Oct 24	Python Libraries	Teaching Notes	Midterm 1 (due before class begins)
7	Thu. Oct 31	Risk and Return	Chapters 8-12	
8	Thu. Nov 7	CAPM	Chapters 8-12	
9	Thu. Nov 14	Python Libraries	Teaching Notes	Assignment 4 (due before class begins)
10	Thu. Nov 21	Python Libraries	Teaching Notes	
11	Thu. Nov 28	Extensions of CAPM WACC	Chapters 3, 28	Midterm 2 (due before class begins)
12	Thu. Dec 5	Monte Carlo Simulation	Chapters 24 - 27	Assignment 5 (due before class begins)
* The topics covered in each session might be adjusted with the speed of class progress.				

**COURSE SCHEDULE**

**Commerce 3FD3: Section C02  
Financial Modeling  
Fall 2024 Course Schedule**

WEEK	DATE	TOPICS	READINGS	DUE DATES
1	Wed. Sept. 4	Introduction to Financial Modeling & Time Value of Money	Chapters 31-35 Chapters 1-7	
2	Wed. Sept. 11	Time Value of Money	Chapters 1-7	
3	Wed. Sept. 18	Stock Valuation	Chapters 2,3,4,5,6	Assignment 1 (due before class begins)
4	Wed. Sept. 25	Stock Valuation	Chapters 2,3,4,5,6	
	Wed. Oct 2	Bond Valuation	Chapters 20 - 21	Assignment 2 (due before class begins)
5	Wed. Oct 9	Bond Valuation	Chapters 20-21	Assignment 3 (due before class begins)
	Wed. Oct 16	<b>Mid-term recess</b>		
6	Wed. Oct 23	Python Libraries	Teaching Notes	Midterm 1 (due before class begins)
7	Wed. Oct 30	Risk and Return	Chapters 8-12	
8	Wed. Nov 6	CAPM	Chapters 8-12	
9	Wed. Nov 13	Python Libraries	Teaching Notes	Assignment 4 (due before class begins)
10	Wed. Nov 20	Python Libraries	Teaching Notes	
11	Wed. Nov 27	Extensions of CAPM WACC	Chapters 3, 28	Midterm 2 (due before class begins)
12	Wed. Dec 4	Monte Carlo Simulation	Chapters 24 - 27	Assignment 5 (due before class begins)

\* The topics covered in each session might be adjusted with the speed of class progress.

**COURSE SCHEDULE**

**Commerce 3FD3: Section C03  
Financial Modeling  
Fall 2024 Course Schedule**

WEEK	DATE	TOPICS	READINGS	DUE DATES
1	Tue. Sept. 3	Introduction to Financial Modeling & Time Value of Money	Chapters 31-35 Chapters 1-7	
2	Tue. Sept. 10	Time Value of Money	Chapters 1-7	
3	Tue. Sept. 17	Stock Valuation	Chapters 2,3,4,5,6	Assignment 1 (due before class begins)
4	Tue. Sept. 24	Stock Valuation	Chapters 2,3,4,5,6	
	Tue. Oct 1	Bond Valuation	Chapters 20 - 21	Assignment 2 (due before class begins)
5	Tue. Oct 8	Bond Valuation	Chapters 20-21	Assignment 3 (due before class begins)
	Tue. Oct 15	<b>Mid-term recess</b>		
6	Tue. Oct 22	Python Libraries	Teaching Notes	Midterm 1 (due before class begins)
7	Tue. Oct 29	Risk and Return	Chapters 8-12	
8	Tue. Nov 5	CAPM	Chapters 8-12	
9	Tue. Nov 12	Python Libraries	Teaching Notes	Assignment 4 (due before class begins)
10	Tue. Nov 19	Python Libraries	Teaching Notes	
11	Tue. Nov 26	Extensions of CAPM WACC	Chapters 3, 28	Midterm 2 (due before class begins)
12	Tue. Dec 3	Monte Carlo Simulation	Chapters 24 - 27	Assignment 5 (due before class begins)

\* The topics covered in each session might be adjusted with the speed of class progress.