

Commerce 3FD3 Financial Modelling Winter 2025 Course Outline

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

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Yingnan Zhao

Email: zhaoy502@mcmaster.ca

Sections: C01: Tuesdays, 11:30-14:20, C02: Mondays, 11:30-14:20, C03: Mondays, 8:30-11:20

See Mosaic for the venue.

Office Hours: Tuesdays, 14:30-15:30, DSB 411

Teaching Assistant: Zi Yang

Email: yangz242@mcmaster.ca

Office Hours: Details to be provided on A2L after the semester starts

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 FORMAT

The three hours of class time 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 at a convenient time based on the class's progress. Please use this time to take care of personal needs of various kinds.

COURSE INFORMATION

Course Delivery Mode: In-person (no recording will be provided)

This three-credit elective undergraduate course provides an introduction to 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.

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 the Python programming language and MS Excel.

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 managerial decision-making purposes.
- Learn the basics of programming with the Python programming language.
- Learn to use various functions and libraries of the Python programming language and MS Excel for financial applications.

REQUIRED COURSE MATERIALS AND READINGS

Required:

- Avenue registration for slides, readings and other course materials: <http://avenue.mcmaster.ca>
- Benninga; Financial Modeling; Fifth Edition; The MIT Press, 2022. ISBN: 978- 0262046428. \$168.95. The textbook is a Finance-focused modelling text, also useful in other finance courses, that covers practical examples in finance in Excel. Students may use an earlier edition or a second-hand textbook.

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.

COURSE EVALUATION

The following weighting scheme will be used:

#	Grade Component	Weight
1	Assignments (Best 4 out of 5)	20%
2	Class Participation (Best 8 out of 10)	10%
3	Midterm 1 (Week 1 to 5)	20%
4	Midterm 2 (Week 6 to 10)	20%
5	Cumulative and Computer-based (in Python and Excel). Date to be determined	30%
	Total	100%

Important dates and deadlines for the midterms and the assignments are listed in the next section.

COURSE DELIVERABLES

Assignments

Five weekly assignments based on in-class examples have a 5% weight. The details of each assignment will be released according to the schedule below. Students are required to submit their assignments by the due date on the course portal on the Avenue to Learn or Crowdmark website.

Participation

This class is full of class activities and student participation is an important component of this course. Class participation is graded by the following rubric. Passive attendance does NOT contribute to students' participation marks.

Criteria	Excellent 10%	Average 7%	Unacceptable 4%
Verbal Contribution (Comments, Questions, explaining to classmates)	Exhibited all sub-criteria in a respectful manner, in small and large group discussions	Exhibited most of the sub-criteria in a respectful manner, but more so in small than in large groups or vice versa.	Verbalized rarely and only when solicited.
Focus and Attentiveness	Always aware of the topic or issue being discussed, consistently engaged in active listening strategies, and never engaged in activities that distracted others.	Almost always aware of the topic or issue being discussed and often engaged in active listening strategies. May have been distracted once or twice (bad day).	Always distracted or distracting (e.g., on the computer, talking to others, or doing work for other classes).
Level of engagement in our class learning community (Discussions, Group Activities, Paired Activities)	Always assumes shared responsibility for the quality of class activities. Advances the class by posting ideas about the readings and course materials. Engages other students in discussions by commenting on classmates' postings and/or asking for clarification.	Appears to be somewhat indifferent to the topics under discussion. Participates in an aloof way.	Occasionally engages others and/or responds to others in the class.

Midterms – Take-home Exams

Each midterm comprises 20% of the overall grade. Students are required to submit their midterm according to the schedule below, where the coverages are also listed. Students are required to submit their exams via a Crowdmark link.

Please note that both the assignment and the midterms are to be done **individually**. Collaboration with other students is not allowed. Students will be graded based on the accuracy, quality, and clarity of their work. Late submissions will **not** be accepted.

The assignments will be released on Tuesdays and due on Sundays of the week. The midterms are released on Tuesdays and due on Sundays of the following week. Details are listed in the table below:

Assignments and midterms	Coverage	Release date	Due Date (11:59 pm)
Assignment 1	Weeks 1 & 2	14-Jan	19-Jan
Assignment 2	Weeks 3 & 4	28-Jan	02-Feb
Assignment 3	Week 5	04-Feb	09-Feb
Midterm 1	Weeks 1 to 5	11-Feb	23-Feb
Assignment 4	Weeks 8 & 9	04-Mar	09-Mar
Midterm 2	Weeks 6 to 10	11-Mar	23-Mar
Assignment 5	Weeks 11 to 13	01-Apr	06-Apr

Final Exam

The final exam will be cumulative, computer-based, and in-person. Students are required to make sure that Python and MS Excel are running properly on their devices. The date of the final exam is to be set by the registrar's office.

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.

Students who have concerns about the course content, evaluation methods, or delivery should first reach out to the course instructor. If your concern remains unresolved after speaking with the instructor, you may then reach out to the relevant Area Chair for further consideration.

MISSED ACADEMIC WORK

Assignments and Take-home midterm exams are introduced in advance, giving students sufficient time to work on them. Therefore, late submissions are NOT acceptable.

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.degroot.mcmaster.ca/forms-and-resources/missed-course-work-policy/>

* Non-Commerce students must follow the Missed Coursework Protocols outlined by their home faculty and Program Office.

GENERATIVE AI

Students may use generative AI throughout this course (up to the final exam) in whatever way enhances their learning; no special documentation or citation is required. Use of this technology, however, during the final exam is PROHIBITED.

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 <https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/>

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.

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 the 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 images 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 Commerce 2FA3 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.

COMM 3FD3 – Financial Modelling C01
Winter 2025 Course Schedule
(subject to changes during the semester)

Week	Lecture Date	Topic Description	Readings
1	07-Jan	Introduction to Financial Modelling	Chapters 31-35
2	14-Jan	Time Value of Money	Chapters 1,7
3	21-Jan	Review of Financial Statements, Capital Budgeting	Chapters 1,7
4	28-Jan	Stock Valuation	Chapters 2,4,5,6
5	04-Feb	Bond valuation	Chapters 20-23
6	11-Feb	Introduction to Python	Notes and Slides
7	18-Feb	<i>Winter Recess</i>	<i>No Classes</i>
8	25-Feb	Python Libraries	Notes and Slides
9	04-Mar	Return and Risk	Chapters 8-12
10	11-Mar	CAPM	Chapters 8-12
11	18-Mar	Python Libraries	Notes and Slides
12	25-Mar	Python Libraries	Notes and Slides
13	01-Apr	Extensions of CAPM, WACC	Chapters 3, 28
14	08-Apr	Monte Carlo Simulation	Chapters 24-27

COURSE SCHEDULE

**COMM 3FD3 – Financial Modelling C02, C03
Winter 2025 Course Schedule
(subject to changes during the semester)**

Week	Lecture Date	Topic Description	Readings
1	06-Jan	Introduction to Financial Modelling	Chapters 31-35
2	13-Jan	Time Value of Money	Chapters 1,7
3	20-Jan	Review of Financial Statements, Capital Budgeting	Chapters 1,7
4	27-Jan	Stock Valuation	Chapters 2,4,5,6
5	03-Feb	Bond valuation	Chapters 20-23
6	10-Feb	Introduction to Python	Notes and Slides
7	17-Feb	Winter Recess	No Classes
8	24-Feb	Python Libraries	Notes and Slides
9	03-Mar	Return and Risk	Chapters 8-12
10	10-Mar	CAPM	Chapters 8-12
11	17-Mar	Python Libraries	Notes and Slides
12	24-Mar	Python Libraries	Notes and Slides
13	31-Mar	Extensions of CAPM, WACC	Chapters 3, 28
14	07-Apr	Monte Carlo Simulation	Chapters 24-27