BUS F735
Financial Modeling
Winter 2025 Course Outline

Finance and Business Economics Area
DeGroote School of Business
McMaster University

COURSE OBJECTIVE

What is the difference between making a purpose-built spreadsheet and financial modelling? Financial modelling is much more flexible and can be easily modified to solve a wide array of questions. This course will examine the tools built into Excel and VBA and their use in financial modelling The tools will be introduced using concepts such as the time value of money, bond pricing, risk and return, financial planning and option pricing. Tools will include absolute cell references, names, lookup tables, formatting, spinners (and other controls), if statements, graphs, etc., as well as an introduction to VBA programming. A basic knowledge of Excel is assumed with no prior experience with VBA.

INSTRUCTOR AND CONTACT INFORMATION

Wednesdays at 7.00 PM
All times referenced in this document are Eastern.

Adeel Mahmood
Instructor
Tel: 905-525-9140
Office Hours: After class or by appointment

COURSE ELEMENTS

Credit Value:	3	Leadership:	Yes	IT skills:	No	Global view:	Yes
Avenue:	No	Ethics:	No	Numeracy:	Yes	Written skills:	Yes
Participation:	Yes	Innovation:	Yes	Group Work:	Yes	Oral skills:	Yes

COURSE PREREQUISITES AND COMPLEMENTS

Students should have the academic credit of BUS F650 or FIN 601 – or an equivalent preparation – prior to the start of this course.

COURSE OVERVIEW

This course introduces the basics of financial modelling. It is offered as a second-year course and requires an understanding of finance and a basic knowledge of excel. We will build on this knowledge to develop a more complete understanding of what makes for a good financial model and how to go about building one.

We will begin with financial statement modeling and valuations and sample a range of company models. As much as possible, we will work on a model of a real company with recent annual or quarterly financial statements.

The course will then move into a broader set of spreadsheet models used for asset and derivatives pricing, portfolio management, and risk management. We will get to work with external databases such as those available through Bloomberg terminals as well as on public websites.

VBA and Python programming be delved into next with a focus on finance applications. No prior knowledge of either tool is assumed. The course will also provide preview of major use cases that students can analyze for their own final projects.

LEARNING OUTCOMES

Upon successful completion of the course, students will be able to:

- Identify the key finance and accounting terms and concepts used in financial models.
- Apply best practices and efficiency tools for general-purpose spreadsheet modeling.
- Determine the key input variables to and report key outputs of a range of financial models.
- Integrate major components of their models, and perform key sensitivity and scenario analyses under a range of assumptions.
- Learn to document the details of and test a financial model.
- Learn to work with and use a range of external data in a spreadsheet model.
- Gain hands-on knowledge of advanced Excel modules to enhance their models.
- Become proficient with VBA, enough to be viewed as the "resident expert" in many situations.
- Develop an understanding of how to use Python libraries to extend the models.

REQUIRED COURSE MATERIALS AND READINGS

Course content and class communication available on Avenue:

- http://avenue.mcmaster.ca

EVALUATION

Individual learning in this course results from model building, problem solving, and lab work. Team learning focus of this course is on the assignments and an applied group project centred on a financial model.

The final grade will be calculated as follows:

Components and Weights

Class Participation	In class or reflection (individual)	8%
Two Term Tests	Variable weights (individual)	50%
Spreadsheet Assignments	Due online during the term (group)	2 x 6%
Private Equity Project	Due online at the end of the term (group)	30%
Total		**100%**

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

Note that the calculated grade in the course may be subject to an overall adjustment to bring the class average in line with the established grade ranges of the MBA Program.

Class Participation

Your participation is needed for a successful class. As in the workplace, your contribution matters to the success of the course. You bring insights and perspectives that can help your classmates understand the concepts better. For the most part, applications of the concepts become clear through class discussion and exercises. This is particularly true for the cases in our course where there is rarely a right or wrong answer and the key learning outcomes are achieved through a deeper discussion in which we engage as a class.

A detailed rubric for this component will be posted on the course website.

If you miss a class and/or want to increase your participation points after class, you can complete a **class reflection** online, summarizing the chapter, case, and activity completed in that class. The deadline to submit your reflections is the end of the term (see the schedule below). Late submissions are not accepted.

Term Tests

Two term tests – ***open-book***, ***open-notes*** tests – will be written during the term. More details of the format, structure, and content coverage will be provided on the course website.

A student ***missing a Term Test*** is required to contact the 'Student Experience – Academic Office' and obtain an official approval of relief if he or she wishes to avoid getting a zero (0) grade for the test. If 'Student Experience – Academic Office' adjudicates that relief be provided, the student will be able to write an alternate test, in lieu of the missed test, during the final exam period at the end of the term.

While the combined weight of the two term tests is 50%, **the test in which the student's percentage mark is higher will form 30% of the student's final grade** with the other test forming the remaining 20%. This re-weighting is still applicable if an alternate test is written in lieu of a missed test.

Spreadsheet Assignments

The ***Spreadsheet Assignments*** are completed in groups, submitted online, and focused on the concepts introduced in the course. Refer to the course schedule for specific deadlines.

Students will form groups for this component. Each student group will also complete the ***Private Equity Project*** as described further below. *The group members will be assigned individual grades relative to the group grade based on the peer assessments completed during the course.*

Late submissions are subject to a 10% mark deduction for the first 24 hours past the deadline and

25% mark deduction for every additional 24 hours past the deadline. If there is a valid reason as supported with documentation for a late submission, the deadline will be extended to the time allowed in the documentation.

Group Project

Students will form groups for this component. Each student group will also complete the ***Spreadsheet Assignment*** as described elsewhere in this document. *The group members will be assigned individual grades relative to the group grade based on the peer assessments completed towards the end of the course*.

The ***Group Project*** is **due at the end of the term**. The project will entail building and documenting a real-life financial model using the concepts covered in the course.

Late submissions are subject to a 25% mark deduction for every 24 hours past the deadline. If there is a valid reason as supported with documentation for a late submission, the deadline will be extended to the time allowed in the documentation.

COMMUNICATION AND FEEDBACK

Students that are uncomfortable in directly approaching an instructor regarding a course concern may send a confidential and anonymous email to the respective Area Chair or Associate Dean:
http://mbastudent.degroote.mcmaster.ca/contact/anonymous/

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 Administrative Assistant.

Instructors should conduct an informal course review with students to allow time for modifications in curriculum delivery. Instructors should provide evaluation feedback for at least 10% of the final grade to students prior to Week #8 in the term.

COURSES WITH AN ONLINE ELEMENT

All courses use some online 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.

Students may be required to use the Respondus LockDown Browser and Respondus Monitor. The Respondus LockDown Browser is a downloadable program that allows a student to take an Avenue

to Learn quiz in a secure environment. Quizzes can be set to use LockDown Browser or LockDown Browser.

For more details about McMaster's use of Respondus Lockdown Browser please go to https://avenuehelp.mcmaster.ca/exec/respondus-lockdown-browser-and-respondus-monitor/

The available information is dependent on the technology used. Continuation in a course that uses online 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.

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 A2L, 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.

GENERATIVE AI

Students may use generative AI for editing, translating, and revising their work throughout the course so long as the use of generative AI is referenced and cited. Use of generative AI outside the stated use of editing, translating, and revising without citation will constitute academic dishonesty. It is the student's responsibility to be clear on the limitations for use and to be clear on the expectations for citation and reference and to do so appropriately.

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of learning. Academic credentials you earn are rooted in principles of honesty and academic integrity.

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.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, at:
www.mcmaster.ca/academicintegrity

Students are responsible for being aware of and demonstrating behaviour that is honest and ethical in their academic work. Such behaviour includes:

- following the expectations articulated by instructors for referencing sources of information and for group work;
- asking for clarification of expectations as necessary;
- identifying testing situations that may allow copying;
- preventing their work from being used by others (e.g., protecting access to computer files); and
- adhering to the principles of academic integrity when conducting and reporting research.

MISSED ACADEMIC WORK

Missed Mid-Term Examinations / Tests / Class Participation

Please do not use the online McMaster Student Absence Form (MSAF) as this is for Undergraduate students only. The MBA program will not accept an MSAF.

When students miss regularly scheduled term work which contributes 10% or more to the final grade, for legitimate reasons as determined by the Student Experience – Academic Office (SEAO), the activity necessary to compensate for the missed work will be determined by the course instructor. The compensatory activities assigned will vary with the nature of the course and the missed requirement. They include, but are not restricted to, an alternative assignment, a rescheduled midterm exam, or re-weighting the marks for the missed component to other mark components. Documentation explaining such missed work must be provided to the SEAO within five (5) working days of the scheduled date for completion of the work.

Acceptable reasons for missed work, along with the Petition for Missed Term Work and the MBA Student McMaster University Student Health Certificate, can be found on the DeGroote MBA Student website (mbastudent.degroote.mcmaster.ca). Please direct any questions about acceptable documentation to the MBA Academic Advisors (askmba@mcmaster.ca).

University policy states that a student may submit a maximum of three (3) Petition for Missed Term Work per academic year, after which the student must meet with the Director of the program.

If term work is missed without an approved reason, students will receive a grade of zero (0) for that component.

Missed Final Examinations

Students must be available for the duration of the posted exam period regardless of their personal exam schedule. This is to ensure student availability throughout the entire exam period in the event that an exam must be rescheduled due to unforeseen circumstances (university closure, power outage, storm policy, etc.). A student who misses a final examination without valid reason will receive a mark of 0 on the examination.

Students who have missed a final exam for a valid reason can apply to the SEAO to write a deferred examination by submitting an Application for Deferring a Final Exam with supporting documentation. The application must be made within five days of the scheduled exam.

The Application for Deferring a Final Exam and the MBA Student McMaster University Student Health Certificate can be found on the DeGroote MBA Current Student website (mbastudent.degroote.mcmaster.ca).

Deferred examination privileges, if granted, are normally satisfied during the examination period at the end of the following semester. In select cases, the deferred examination may be written at a time facilitated by the SEAO and agreed to by the course instructor.

Requests for a second deferral or rescheduling of a deferred examination will not be considered.

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. Speak with the instructor if this is a concern for you.

ACADEMIC ACCOMMODATION FOR STUDENTS WITH DISABILITIES

Student Accessibility Services (SAS) offers various support services for students with disabilities. Students are required to inform SAS of accommodation needs for course work at the outset of term. Students must forward a copy of such SAS accommodation to the instructor normally, within the first three (3) weeks of classes by setting up an appointment with the instructor. If a student with a disability chooses NOT to take advantage of an SAS accommodation and chooses to sit for a regular exam, a petition for relief may not be filed after the examination is complete. The SAS website is:

http://sas.mcmaster.ca

Use of Test Accommodations at McMaster University Burlington Campus Ron Joyce Centre

Whereas Student Accessibility Services (SAS), on Main Campus, determines all MBA student accommodations, the MBA Faculty Office manages the coordination of accommodations for tests, midterms, and exams at the Ron Joyce Centre in Burlington.

Process for Students

- Students must activate their accommodation(s) (e.g., extra-time, memory aid, etc.) for each upcoming test, midterm, or exam, at least two weeks in advance. Students can do this by emailing their Instructor and the DeGroote MBA SAS scheduling office at DSBSAS@mcmaster.ca. If a student cannot meet this deadline, they should contact DSBSAS@mcmaster.ca to discuss alternative arrangements. The program is committed to exploring flexibility where possible to support students.

- All tests, midterms, and exams are booked synchronously with the class's start time. Any deviations from the start time (e.g. start earlier than the class to enable completion at the same end time) requires a discussion with their instructor on protocol at the time of accommodation activation.

- Students will leverage the accommodation (e.g., extra-time, memory aid, etc.), in a designated testing room. Rooms will be booked according to the student's SAS accommodation. Unless the accommodation states otherwise, students should expect that they will be writing in a room with other students. One or more invigilators will always be in the room.

- Following the request to activate the accommodation(s), dsbsas@mcmaster.ca will reach out to the student with their test, midterm, or exam details, including the date, time, and room number. As there may be other students writing tests in the room, we ask that students enter the room quietly and leave all personal items at the front of the room.

All policies and procedures, including restroom access, how extra-time is allocated for assessments under Universal Design, and the submission of memory aids in advance, are consistent with those of SAS on Main Campus. The only variance in procedure is communication around, and physical location of, assessment. There is not a dedicated testing space at RJC. Existing classrooms and

lecture halls will be used for most testing. All SAS-approved accommodations will be honoured by our staff; however, core testing elements are not eliminated in alternative testing formats. Students should expect and plan for invigilation, incidental noise, and other potential distractions.

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.

POTENTIAL MODIFICATIONS TO THE COURSE

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

ACKNOWLEDGEMENT OF COURSE POLICIES

Your registration and continuous participation (e.g. on A2L, in the classroom, etc.) to the various learning activities of this course 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

* To be announced during the term

#	DATE	CONTENT	TOOLS
1	Wed. Jan 8	**Intro, Financial Statement Modeling I** Forecasting financial statements using spreadsheets	Basic Excel functions / tools
2	Wed. Jan 15	***Excel Tutorial*** *Refresher tutorial of basic Excel functions and tools*	*Basic Excel functions / tools*
3	Wed. Jan 22	**Financial Statement Modeling II** Integrating worksheets, full financial model	Advanced Excel functions / tools
4	Wed. Jan 29	**Financial Statement Modeling III** Financial statement modules	Advanced Excel functions / tools
5	Wed. Feb 5	**Financial Modeling Case Study** Application to public company financials	Advanced Excel functions / tools
6	Wed. Feb 12	**Term Test 1** (Written in Class)	
Feb 17 to 21		**Midterm Recess** (*No Class*)	
7	Wed. Feb 26	**General Spreadsheet Modeling** Spreadsheet loops, lookups, data display, what-ifs	Datatables, lookups, arrays, pivot tables
Mon, Mar 3		**Spreadsheet Assignment One** – Due online by 10.00 AM	
8	Wed. Mar 5	**Forecasting and Optimization** Optimization techniques and applications	Solver, Analysis Toolkit, Scenarios
9	Wed. Mar 12	**VBA / Programming I** Intro to programming and VBA	VBA and programming basics
10	Wed. Mar 19	**VBA / Programming II** VBA applications, debugging	Extended VBA tools
Mon, Mar 24		**Spreadsheet Assignment Two** – Due online by 10.00 AM	
11	Wed. Mar 26	**VBA / Programming III** Intro to Python, VBA user interfaces	Forms, Python basics
12	Wed. Apr 2	**Term Test 2** (Written in Class)	
13	Wed. Apr 9	***Financial Modeling with AI Tools*** Using AI tools with Python libraries	(TBA*)
Mon, Apr 14		**Group Project** – Due online by 10.00 AM	