BusAdmin F735
Financial Modeling
Winter 2023 Course Outline

Finance and Business Economics Area
DeGroote School of Business
McMaster University

COURSE OBJECTIVE

This course introduces the basics of financial modeling. This requires some understanding of finance and a basic knowledge of MS Excel.

The course will examine the tools built into Excel and Python and their use in financial modeling, with an emphasis on documentation and industry-best practices. The models used for this purpose include those covering financial statement forecasts, asset pricing, portfolio management, risk management, and other finance problems.

INSTRUCTOR AND CONTACT INFORMATION

CO1: Wed 19:00-22:00

Martin Butcher
Instructor
butchm1@mcmaster.ca

Tel: (905) 403-8286
Class Location: **RJC 236**

COURSE ELEMENTS

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

COURSE DESCRIPTION

Financial modeling involves the creation of tools that someone, other than the writer, can use to answer "what if" questions in finance. The course will examine the tools built into MS Excel and Python and their use in financial modeling, with an emphasis on documentation and industry best practices. The tools employed will include use of an introductory programming language, and the integration of Excel with FinTech.

A working knowledge of MS Excel is assumed, but no prior experience with Python is required.

LEARNING OUTCOMES

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

- 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 a range of financial models.
- Integrate and link key financial statements and ratios into a financial model.
- Perform key sensitivity and scenario analyses under a range of assumptions.
- Learn to document and test a financial model.
- Learn to work with and use a range of external data with a spreadsheet model.
- Learn financial modeling using Python

COURSE MATERIALS AND READINGS

Course Materials are available on Avenue To Learn

Textbooks:

Benninga; Financial Modeling; Fifth Edition; The MIT Press, 2021. ISBN: 978-0262046428. Comprehensive finance-focused text, also useful in other finance courses

COURSE OVERVIEW AND ASSESSMENT

Individual learning in this course results from in-class discussions, problem solving, and lab work. The balance of the individual learning results from lectures on specific topics, student research, and a group project centred on a financial model.

Your final grade will be calculated as follows:

Weekly Engagement Question	10%
Test 1: Week 6	30%
Test 2: Week 12	30%
Group Project: Week 13	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

COURSE DELIVERABLES

Weekly Engagement (10%)
10 weeks of asynchronous chat question and response at 1% per week. A detailed grading rubric will be posted on Avenue to Learn in Week 01.

Test 1 (30%) – Week 6
On-line test on material covered in the first six weeks of the course. Details will be posted on Avenue to Learn in Week 05.

Test 2 (30%) – Week 12
On-line test on material covered in the last six weeks of the course. Details will be posted on Avenue to Learn in Week 11.

Group Project (30%) Innovation Project – Week 13
Group project details will be posted on Avenue to Learn in Week 03.

COMMUNICATION AND FEEDBACK

Students who wish to correspond with instructors or classmates 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.

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behavior 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 behavior 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.

COURSES WITH AN ONLINE ELEMENT

Students should be aware that, when they access the electronic components of a course, private information such as first and last names, usernames 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.

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 behavior's 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.

MISSED ACADEMIC WORK

Where students miss a regularly scheduled mid-term or class participation for legitimate reasons as determined by the Student Experience – Academic (MBA) office, the weight for that test/participation will be distributed across other evaluative components of the course at the discretion of the instructor. Documentation explaining such an absence must be provided to the Student Experience – Academic (MBA) office within five (5) working days upon return to school.

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.

POTENTIAL MODIFICATION 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 (e.g., severe weather, labor disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.

ACKNOWLEDGEMENT OF COURSE POLICIES

Your enrolment in Finance 707 will 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

Finance 707 - Financial Modeling
Winter 2023 Course Schedule

Meeting	Week of	Topics	Excel
1	Jan 09	Ch 01: Basic Financial Calculations Ch 28: Data Tables	Introduction
2	Jan 16	Ch 02: Valuation Overview Ch 03: WACC Calculation.	Financial Statement Modeling, I
3	Jan 23	Ch 04: Proforma DCF Valuation Ch 05: Pro Forma Model for Merck	Financial Statement Modeling, II
4	Jan 30	Ch 10: Portfolio Basics Ch 11: Efficient Portfolios Ch 13: Estimating Beta, and the SML	Portfolio Modeling, I
5	Feb 06	Ch 12: Computing the Var-Covar Matrix Ch 15: Black-Litterman	Portfolio Modeling, II
6	Feb 13	**TEST 1**	
7	Feb-20	**MID-TERM RECESS**	
8	Feb 27	Ch 29: Matrices Ch 30: Excel Functions	Technical Excel
9	Mar 06	Ch 31: Array Functions Ch 32: Some Excel Hints	Technical Excel
10	Mar 13	Ch 33: Essentials of R Programming	Python
11	Mar 20	Blockchain, Smart Contracts, Corda R3	Integrated Fintech
12	Mar 27	**TEST 2**	
13	Apr 03	**GROUP PROJECT**	