

MFin 707
Financial Modeling Using Excel and VBA
Winter 2018 Course Outline

Finance and Business Economics Area

DeGroote School of Business
McMaster University

COURSE OBJECTIVE

This course introduces the basics of financial modelling. This requires some 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.

INSTRUCTOR AND CONTACT INFORMATION

Section 1 & 2; Tuesday & Thursday, 2:30 - 5:20 p.m.

Mr. Kevin Brewer

Instructor

kbrewer@mcmaster.ca

Office: TSH 615 [shared]

Office Hours: by appointment

Tel: TBA [shared]

Class Location: ABB 166

COURSE ELEMENTS

Credit Value:	3	Leadership:	No	IT skills:	Yes	Global view:	No
Avenue:	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 Excel and VBA and their use in financial modeling, with an emphasis on documentation and industry best practices. The models used for this purpose include the yield curve, the efficient frontier, various asset pricing models (such as the CAPM and the APT), portfolio management (fixed income and equity), option pricing, VaR (value at risk) and other risk measures, and capital market simulation.

A working knowledge of Excel is assumed although no prior experience with VBA is required.

LEARNING OUTCOMES

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

- Design and layout a financial model.
- Decide on which variables are independent and how to vary them.
- Become familiar with Excel and VBA, enough to be viewed as the "resident expert" in many situations.

REQUIRED COURSE MATERIALS AND READINGS

Avenue registration for course content, readings and case materials <http://avenue.mcmaster.ca>

OPTIONAL COURSE MATERIALS AND READINGS

Financial Analysis and Modeling Using Excel and VBA, 2nd Edition, Chandan Sengupta, Wiley, 2009

- Organized in 4 parts: about Excel, using it, about VBA, & using it.
- A source for several of the course examples.

Financial Modeling, 4th Edition, Simon Benninga, The MIT Press, 2014

- A very comprehensive text, quite useful in other finance courses.
- Contains 39 chapters, about 10 chapters covered per term course.

Excel Modeling and Estimation; in Corporate Finance, 5th edition, Holden, Pearson Prentice Hall, 2015

- A very good book for those without a lot of Excel experience.
- Step by step coverage of many different financial models.
- Does not provide coverage of VBA.

EVALUATION

Learning in this course results primarily from in-class discussions, examples, and sample spread sheets which we will build in class and from the assignments. Your final grade will be calculated as follows:

Components and Weights

Assignments	6, to be submitted in groups of 2 to 6	60%
Final Exam		40%
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Total		100%
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NOTE: The use of a McMaster standard calculator is allowed during examinations in this course. See McMaster calculator policy at the following URL:

<http://www.mcmaster.ca/policy/Students-AcademicStudies/examinationindex.html>

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.

Grade (Points)	Percentages
A+ (12)	90-100
A (11)	85-89
A- (10)	80-84
B+ (9)	75-79
B (8)	70-74
B- (7)	60-69
F (0)	00-59

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.

Assignments

There will be 6 assignments worth 60% of your final grade and may be done in groups of 2 to 6 students. Each of the assignments will be made available on Avenue one week before the due date.

Final Exam

There is one short answer examination in this course that accounts for 40% of your final grade. The exam will cover material from the course. The format will be short answer and will be quite subjective in nature. The final will be held TBA.

ACADEMIC DISHONESTY

It is the student's responsibility to understand what constitutes academic dishonesty. Please refer to the University Senate Academic Integrity Policy at the following URL:

<http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf>

This policy describes the responsibilities, procedures, and guidelines for students and faculty should a case of academic dishonesty arise. Academic dishonesty is defined as to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. Please refer to the policy for a list of examples. The policy also provides faculty with procedures to follow in cases of academic dishonesty as well as general guidelines for penalties. For further information related to the policy, please refer to the Office of Academic Integrity at:

<http://www.mcmaster.ca/academicintegrity>

MISSED ACADEMIC WORK

Missed Mid-Term Examinations / Tests / Class Participation

Where students miss a regularly scheduled mid-term or class participation for legitimate reasons as determined by the MBA Academic Services 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 MBA Academic Services Office within five (5) working days upon returning to school.

To document absences for health related reasons, please provide the Petition for Relief for MBA Missed Term Work and the McMaster University Student Health Certificate which can be found on the DeGroote website at <http://mbastudent.degroote.mcmaster.ca/forms-and-applications/>. Please do not use the online McMaster Student Absence Form as this is for

Undergraduate students only. University policy states that a student may submit a maximum of three (3) medical certificates per year after which the student must meet with the Director of the program.

To document absences for reasons other than health related, please provide the Petition for Relief for MBA Missed Term Work and documentation supporting the reason for the absence.

Students unable to write a mid-term at the posted exam time due to the following reasons: religious; work-related (for part-time students only); representing university at an academic or varsity athletic event; conflicts between two overlapping scheduled mid-term exams; or other extenuating circumstances, have the option of applying for special exam arrangements. Such requests must be made to the MBA Academic Services Office at least ten (10) working days before the scheduled exam along with acceptable documentation. Instructors cannot themselves allow students to unofficially write make-up exams/tests. Adjudication of the request must be handled by the MBA Academic Services Office.

If a mid-term exam is missed without a valid reason, students will receive a grade of zero (0) for that component.

Missed Final Examinations

A student who misses a final examination without good reason will receive a mark of 0 on the examination.

All applications for deferred and special examination arrangements must be made to the MBA Academic Services Office. Failure to meet the stated deadlines may result in the denial of these arrangements. Deferred examination privileges, if granted, must be satisfied during the examination period at the end of the following term. There will be one common sitting for all deferred exams.

Failure to write an approved deferred examination at the pre-scheduled time will result in a failure for that examination, except in the case of exceptional circumstances where documentation has been provided and approved. Upon approval, no credit will be given for the course, and the notation N.C. (no credit) will be placed on the student's transcript. Students receiving no credit for a required course must repeat the course. Optional or elective courses for which no credit is given may be repeated or replaced with another course of equal credit value.

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

Any student who is unable to write a final examination because of illness is required to submit the Application for Deferred MBA Final Examination and a statement from a doctor certifying illness on the date of the examination. The Application for Deferred MBA Final Examination and the McMaster University Student Health Certificate can be found on the DeGroote website at <http://mbastudent.degroote.mcmaster.ca/forms-and-applications/>. Please do not use the online McMaster Student Absence Form as this is for Undergraduate students only. Students who write examinations while ill will not be given special consideration after the fact.

In such cases, the request for a deferred examination privilege must be made in writing to the MBA Academic Services Office within five business days of the missed examination.

Special examination arrangements may be made for students unable to write at the posted exam time due to compelling reasons (for example religious, or for part-time students only, work-related reasons):

- Students who have religious obligations which make it impossible to write examinations at the times posted are required to produce a letter from their religious leader stating that they are unable to be present owing to a religious obligation.
- Part-time students who have business commitments which make it impossible to write examinations at the times posted are required to produce a letter on company letterhead from the student's immediate supervisor stating that they are unable to be present owing to a specific job commitment.

In such cases, applications must be made in writing to the MBA Academic Services Office at least ten business days before the scheduled examination date and acceptable documentation must be supplied.

If a student is representing the University at an academic or athletic event and is available at an overlapping scheduled time of the test/examination, the student may write the test/examination at an approved location with an approved invigilator, as determined by the MBA Academic Services Office.

In such cases, the request for a deferred examination privilege must be made in writing to the MBA Academic Services Office within ten business days of the end of the examination period.

Note: A fee of \$50 will be charged for a deferred exam written on campus and a fee of \$100 for deferred exams written elsewhere. In cases where the student's standing is in doubt, the Graduate Admissions and Study Committee may require that the student with one or more deferred examination privileges refrain from re-registering until the examination(s) have been cleared.

STUDENT ACCESSIBILITY SERVICES

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>

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.

COURSE SCHEDULE

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Tentative Winter 2018 Course Schedule

Week	Topics	Excel
1	Course Outline What is Financial Modelling? Papa John's Camaro	Preview of topics
2	The annuity	Functions, optimization, spinners
3	Amortization Tables [Assignment 1 posted]	Data validation, cell addressing & names
4	Amortization Tables	Introduction to VBA
5	Amortization Tables [Assignment 2 posted]	More VBA
6	Various	VBA Tools, Sub Procedures & Functions
7	Bonds, Duration & Immunization [Assignment 3 posted]	Data tables, graphs
8	More Bonds, Yield Curve & Capital Budgeting [Assignment 4 posted]	Scroll bar
9	Risk & Return	Arrays
10	Options [Assignment 5 posted]	
11	Capital Market Simulation [Assignment 6 posted]	Random numbers, speeding up VBA
12	Hiding and Protecting the Worksheets & Modelling Review	Hiding, protection, time
13	TBA	
14	Final exam	