

**MFIN 701
Financial Econometrics I
Winter 2020 Course Outline**

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

COURSE OBJECTIVE

This course introduces students to the theory and applications of statistical techniques for testing economic theory. It covers the basic tools of estimation and inference in the framework of the linear and nonlinear regression model. The main topics include specification of an econometric model, hypothesis testing, model selection, forecasting, and estimation procedures such as instrumental variable estimation, generalized least squares, systems-equation estimation, time series, and generalized method of moments and maximum likelihood estimation.

INSTRUCTOR AND CONTACT INFORMATION

Instructor Name: Dr. Bijan Alagheband, CFA
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Office Address: TBD
Office Hours: After Class
Phone: (905) 525-9140 x20693
Class Location: DSB 505

TA Name: Efthymios (Mike) Nikolakopoulos
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TA Office: TBD
TA Office Hours: TBD
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COURSE ELEMENTS

Credit Value: 3	Leadership: Yes	IT skills: No	Global view: Yes
A2L: Yes	Ethics: Yes	Numeracy: Yes	Written skills: Yes

Participation:	Yes	Innovation:	Yes	Group work:	Yes	Oral skills:	Yes
Evidence-based:	Yes	Experiential:	Yes	Final Exam:	Yes	Guest speaker(s):	No

COURSE DESCRIPTION

This course is taught primarily through lectures, short assignments, and an elective project. Lectures may include additional material compared to the textbook for this course so that class notes are important. The course is essential for market analysis and, thereby, for planning and business decision making processes.

LEARNING OUTCOMES

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

- Analyse regression results,
 - Test hypothesis and select appropriate regression model,
 - Select functional form, handle structural change and forecast,
 - Estimate linear, nonlinear, and nonparametric models,
 - Estimate models using instrumental variables,
 - Estimate models subject to non-standard errors,
 - Estimate system of equation,
 - Perform generalized methods of moments,
 - Perform maximum likelihood and time series estimation.
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REQUIRED COURSE MATERIALS AND READINGS

“Econometric Analysis”, by William H. Greene, seventh or eighth edition, published by Prentice Hall.

Software*: EViews University Version or Student Version Lite

* Other software, e.g., SAS, TSP, R (free download), and SPSS will also be discussed. Acquiring such additional software is not required.

EVALUATION

Assignments	20%
Project	35%
Final Examination	30%
Participation	15%
Total	100%

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. (***SUGGESTED conversion scheme***)

LETTER GRADE	PERCENT
A+	90 - 100
A	85 - 89
A-	80 - 84
B+	75 - 79
B	70 - 74
B-	60 - 69
F	00 - 59

Assignment #1

This assignment is worth **10%** of your final grade and will be marked individually.

Assignment #2

This assignment is worth **10%** of your final grade and will be marked individually.

Project

This project is worth **35%** of your final grade and will be marked individually

Final Examination

This examination is worth **30%** of your final grade and will be marked individually

Participation

Participation in class is worth **15%** of your final grade.

Please review the Graduate Examinations Policy (if applicable):

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

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.

ACADEMIC DISHONESTY

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.

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, located at: www.mcmaster.ca/academicintegrity

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations

Use of Turnitin

In this course we will be using a web-based service (Turnitin.com) to reveal plagiarism. Students will be expected to submit their work electronically to Turnitin.com and in hard copy so that it can be checked for academic dishonesty. Students who do not wish to submit their work to Turnitin.com must still submit a copy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, etc.). To see the Turnitin.com Policy, please go to; <http://www.mcmaster.ca/academicintegrity/turnitin/students/>

MISSED EXAMINATIONS/TESTS/CLASS PARTICIPATION

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

To document absences for health related reasons, please provide the Petition for Relief for MFIN Missed Term Work and the McMaster University Student Health Certificate which can be found on the DeGroote website at <https://mfin.degroote.mcmaster.ca/current-students/forms/>.

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 Program Director.

To document absences for reasons other than health related, please provide the Petition for Relief for MFIN Missed Term Work which can be found on the DeGroot website at <https://mfin.degroot.mcmaster.ca/current-students/forms/> 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; representing university at an academic 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 MFIN Program 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 MFIN Program 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 MFIN Program 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 MFIN Final Examination and a statement from a doctor certifying illness on the date of the examination. The Application for Deferred MFIN Final Examination and the McMaster

University Student Health Certificate can be found on the DeGroote website at <https://mfin.degroote.mcmaster.ca/current-students/forms/>

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 MFIN Program 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 such as religious or representing the University at an academic event.

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.

If a student is representing the University at an academic 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 MFIN Program Office. In such cases, the request for a deferred examination privilege must be made in writing to the MFIN Program 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 MFIN Program Office 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

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca.

For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities:

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

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. 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 enrolment in COURSE MFIN 701 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

WEEK	DATE	TOPIC / READING LIST
1	Jan 6	Linear Regression Model, Ch. 1, 2
2	Jan 13	Multiple Linear Regression Model, Ch. 2
3	Jan 20	Multiple and Partial Regression Model, ANOVA, Ch. 3
4	Jan 27	Properties of OLS Estimator, Confidence Interval and Forecasting, Ch. 4.1-4.8.4
5	Feb 3	Data Problems and Hypothesis Testing, Ch. 4.9-4.10, 5.1-5.5
6	Feb 10	Model Selection, Functional Form, and Structural Change, Ch. 5.6-5.9, 6.1-6.4, 6.6-6.7
7	Feb 24	Nonlinear Regression, Ch. 7.1-7.3.1

WEEK	DATE	TOPIC / READING LIST
8	Mar 2	Semiparametric and Nonparametric Regression Models, Endogeneity, and Instrumental Variable (IV) Estimation, Ch. 7.3.2-7.6, 8.1-8.4.2
9	Mar 9	Continue IV Estimation, Nonlinear IV Estimation, and Serial Correlation, Ch. 8.5.1-8.11, 20.1-20.9
10	Mar 16	Generalized Regression Models and Heteroscedasticity, Ch. 9
11	Mar 23	Systems of Equations: Seemingly Unrelated Regression and Nonlinear Systems Ch. 10.1-10.3.1
12	Mar 30	Generalized Methods of Moments, Time-Series Models and Nonstationary Data, Ch. 13.4-13.7, 20.10-20.11, 21
13	Apr 6	Maximum Likelihood Estimation, Ch. 14.1-14.6.4