

MFIN604 - Fall 2019 - 1 of 8



## MFIN604 Statistics for Financial Applications Fall 2019 Course Outline

## Finance Area DeGroote School of Business McMaster University

# COURSE OBJECTIVE

Statistics involves the study of collection, organization, presentation, analysis and interpretation of data. The ultimate goal of business statistics is business improvement through informed action when faced with uncertain outcomes. In this course we provide an introduction to some of the statistical analysis methods such as confidence intervals, hypothesis testing, experimental design and analysis of variance, and regression analysis to aid business decision-making.

#### INSTRUCTOR AND CONTACT INFORMATION

William Huggins <u>hugginsw@mcmaster.ca</u> 647-289-9240 Office hours and location TBA Tuesday section 7:00pm - 10:00pm in DSB 505 Friday section 10:30am - 1:30pm in DSB 505

TA Name, email/phone, office (and hours) TBA

#### **COURSE ELEMENTS**

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





#### **COURSE DESCRIPTION**

This foundational course will to prepare students for professional work in finance, and for their later course in econometrics, by providing them with a firm foundation in the basics of hypothesis testing and regression analysis. The structure of scientific inquiry, and both the correct choice of tools and the interpretation of results will be emphasized. Topics include probability, sampling, confidence intervals, the formulation of falsifiable hypotheses, and both multiple and time series regression. The primary objectives will be on understanding how and when to apply statistical techniques to managerial problems, and on the translation of statistical output into actionable recommendations. Classroom learning is reinforced through the completion of two statistical case studies.

## LEARNING OUTCOMES

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

- Understand sampling distributions, with emphasis on comparing population mean and variance
- Understand the nature of statistical relationships between variables.
- Explore regression analysis, including simple linear regression, and multiple linear regression.
- Be able to identify common regression pitfalls.
- Select appropriate factors and regression models for prediction.
- Be sufficiently familiar with Excel to perform and analyse the output of various statistical tests and regression models.

#### **REQUIRED COURSE MATERIALS AND READINGS**

Required: "Business Statistics, 3rd Canadian Edition"; Sharpe, De Veaux; 2018





#### **EVALUATION**

Case #1 – Hypothesis Testing	(Oct 14) at 11:59PM EST	15%
Test #1	(Oct 25) at 2:30-5:30pm	35%
Case #2 - Regression	(Dec 2) at 11:59PM EST	15%
Final Exam	(TBA) at TBA	35%
Total		100%

The test and the final exam cover each unit of the course independently and are non-cumulative A standard McMaster calculator (non-programmable) is allowed for tests and the final exam

Exam Policy: http://www.mcmaster.ca/policy/Students-AcademicStudies/GradExamsPolicy.pdf

#### 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	
A+		90 - 100
А		85 - 89
A-		80 - 84
B+		75 - 79
В		70 - 74
B-		60 - 69
F		00 - 59

#### **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: <a href="https://www.mcmaster.ca/academicintegrity">www.mcmaster.ca/academicintegrity</a>

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

#### 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 DeGroote website at <a href="https://mfin.degroote.mcmaster.ca/current-students/forms/">https://mfin.degroote.mcmaster.ca/current-students/forms/</a> 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 <a href="https://mfin.degroote.mcmaster.ca/current-students/forms/">https://mfin.degroote.mcmaster.ca/current-students/forms/</a>





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 <u>sas@mcmaster.ca</u>.

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 MFIN602 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	READING LIST
1	Sept 10, 13	<b>Chapters 4,5</b> – Visualizing data and introduction to Excel
2	Sept 17, 20	<b>Chapter 8</b> – Probability and Distributions
3	Sept 24, 27	<b>Chapters 9, 10</b> – Sampling and the Central Limit Theorem
4	Oct 1, 4	Chapter 13 – Confidence Intervals and Hypothesis Testing
5	Oct 8, 11	Chapter 14 – Means and the Difference of Means
6	Oct 15, 18	Case #1 – Discussion
7	Oct 25	TEST #1
8	Oct 29, Nov 1	Chapters 15, 16 – F Tests, Analysis of Variance, and Chi Tests
9	Nov 5, 8	Chapters 6, 7 – Correlation and Regression
10	Nov 12, 15	Chapters 18, 19 – Interpreting Regression and Residuals
11	Nov 19, 22	Chapters 20, 21 – Multiple Regression
12	Nov 26, 29	Chapter 22 – Time Series and other forms of regression
13	Dec 3, 6	Case #2 - Discussion