McGILL UNIVERSITY
DEPARTMENT OF ECONOMICS

ECON 227D1
ECONOMIC STATISTICS[1]
FALL 2020

Instructor:	**Moshe Lander**
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Office Location:	**LEA 321A**
Office Hours:	**F 09:00 – 14:00**
Lecture Hours:	**MWF 08:35 – 09:25**
Lecture Location:	**ENGTR 0100**
Teaching Assistant:	**Mr Syed Abidi (syed.m.abidi@mail.mcgill.ca)**

Course Overview:
ECON 227D covers distributions, averages, dispersions, sampling, testing, estimation, correlation, regression, index numbers, trends and seasonals.

Course Restrictions:
- Students must register for both ECON 227D1 and ECON 227D2.
- No credit is given for this course unless both…
    - ECON 227D1 is completed successfully in Fall 2020 and
    - ECON 227D2 is completed successfully in Winter 2021.
- ECON 227D1 and ECON227D2 together are equivalent to ECON 227 and to ECON 227D.
- You may not be able to receive credit for this course and other statistics courses. Check here (www.mcgill.ca/oasis/academic/courses/course-overlap) for more details.

Number of Credits:
6 credits for ECON 227D1 and ECON 227D2, upon successful completion of ECON 227D2.

Required Textbook and Materials:
- McClave, J.T., P.G. Benson and T. Sincich. *Statistics for Business and Economics, 13th Edition*. Pearson Canada Ltd., 2018.
    - The textbook and MyStatLab can be purchased, using the instructor code lander81052, at: www.pearsonmylabandmastering.com/northamerica/students/get-registered/index.html

Correspondence:
All email correspondence in this class is through McGill email addresses *only*. Any email coming from any other address is treated as spam and is neither read nor answered. If you have not activated your McGill email already, please follow the instructions at www.mcgill.ca/it/get-started-it/students.

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[1] In the event of extraordinary circumstances beyond the University's and/or instructor's control, the content and/or evaluation scheme in this course is subject to change. Timely announcements will be made by email and/or on *myCourses*.

Course Assessment:

COMPONENT	WEIGHT	CONTENT	DATE
Labs	20 percent	Chapters 1 – 5	Sundays starting September 20
Midterm 1	20 percent	Chapters 1 – 2	October 13
Midterm 2	20 percent	Chapters 3 – 4	November 16
Final	40 percent	Chapters 1 – 5	TBD

- ECON 227D1 and ECON 227D2 are each worth 50 percent of the overall grade, except in the situation described below (see *Honours to Major Transfers*). The weights listed in this table are only for the ECON 227D1 portion of the course.

Honours to Major Transfers
- Honours to Major transfers are routine and can be done using one of two windows. (Transfers at any other times are not permitted.)
  - Up to the end of the 7th week of the Fall semester (Friday, October 16).
  - The January add/drop period in the Winter semester.
- Your performance in ECON 227D determines your grade in ECON 227D (ie, your grades from ECON 257D are disregarded entirely) and your ECON 227D instructor(s) will determine the appropriate weighting scheme of the various ECON 227D components.
- Note that the grading arrangements for transfers from ECON 250D to ECON 230D may be different. Consult those outlines for specific details.
- Note further that the coverage of ECON 227D and ECON 257D are not identical. You are responsible for ensuring your familiarity with all aspects of ECON 227D before you transfer, a particular challenge for those looking to transfer in January.
- If you decide to transfer, please speak with advisors in the economics department to ensure that it is done correctly and seamlessly

Grade Criterion:

Letter	Points	Percent	Letter	Points	Percent	Letter	Points	Percent
A	4.0	85 – 100	B	3.0	70 – 74	C	2.0	55 – 59
A-	3.7	80 – 84	B-	2.7	65 – 69	D	1.0	50 – 54
B+	3.3	75 – 79	C+	2.3	60 – 64	F	0.0	00 – 49

- The official grade in this course is the letter grade. Where appropriate, a class average appears on transcripts expressed as the letter grade most representative of the class performance.
- Consult your department for the minimum grade necessary to fulfill your programme requirements.
- The grade distribution for ECON227D will be approximately normal, centred around 70 percent.
- At the end of ECON227D2, if the distribution differs significantly, the instructor(s) may exercise discretion and adjust the grade thresholds. This will not serve as grounds for grade appeals.

Lectures:
- The international nature of the student body makes it nearly impossible to find a thrice-weekly one-hour timeframe in which all students can gather online to attend a live lecture.
- For that reason, lectures are pre-recorded and posted on *myCourses* according to a traditional in-class semester schedule (see *Tentative Lecture Schedule and Assigned Readings* on page 5).
- Lectures last 2 – 3 hours and, with the e-text, contain all the information needed to complete the course.
- Once posted, each lecture is always available (as long as *myCourses* is working) except during exams.

Office Hours:
- Office hours are not recorded, optional and take place online F 09:00 – 14:00 Eastern.
- As with traditional on-campus office hours, you are received on a first-come, first-served basis and not by appointment. You sit in a virtual waiting room until I am ready to receive you.
- If you use office hours, you are expected to "arrive" prepared (ie, with your questions ready) and to be efficient so that the maximum number of students can make use of the available time.
- If you are unable to attend office hours because of scheduling conflicts, you can email your questions with attached audio, video and/or pictures. The more precise the information you provide, the faster and more precise I can respond.

Instructional Method:
I have been told that my lecture style is fast-paced and intense but engaging and humorous. Although students often find that this style makes the concepts easier to understand, they are often disappointed when they fail to perform to the level to which they are accustomed on my exams. My exams tend to reward those that are sufficiently knowledgeable of the underlying concepts and have developed an intuitive approach to the material. **Memorisation is almost never rewarded**.

To give you the best chance for success in my course, I strongly encourage you stay on schedule as if you were in class, approach the material with a positive attitude, read the relevant materials before (and after) watching the videos, do the assigned homework before advancing to the next chapter, work in a comfortable environment and identify problems and seek help as soon as they occur.

Labs:
- There are five MyLab labs, one for each chapter and each worth four percent. These labs are very similar to more traditional, hardcopy assignments that students would submit to instructors. The purposes of the labs are to: (1) reinforce material covered in class; (2) teach material for which there is insufficient time in class; (3) keep students on track with course learning objectives; and, (4) provide students with immediate evaluation and feedback.
- Labs are open at all times but the grade on the FIRST attempt (if it is before the deadline) is the one that is recorded. After that, labs are still available but grades from those attempts do not count.
- Labs are due Sundays at 23:59 Eastern (exact due dates are listed on MyLab). The time is based on MyLab's clock. The best way to avoid missing deadlines is to do the labs ahead of time, not just prior to the deadline.
- You may ask for a 48-hour extension for any ONE of the five labs. No documentation and no reason are required, but you should use the extension opportunity judiciously and not use it without legitimate reason because a second extension will not be provided.
- Each lab consists of some multiple-choice, graphical, numerical and conceptual questions. Evaluation and feedback is provided immediately after submitting answers.
- Some MyLab questions are based on computer algorithms. This means that every time a lab is attempted, some parameters (eg, numbers, wording) of the questions may differ.
- You can access the labs at http://portal.mypearson.com/mypearson-login.jsp after you purchase the access code and register in the appropriate section.
- Labs do not have a preset amount of time to finish, but inactivity for extended periods could result in Pearson automatically logging you out.
- Address technical problems and questions directly to Pearson (https://support.pearson.com/getsupport).

Exams:
- There are two midterms written outside of class time (Tuesday, October 13 and Monday, November 16) that cover the first- and second-thirds of the course, respectively, and a cumulative final written during the final exam period. (See *Course Assessment* on page 2 and *Tentative Lecture Schedule and Assigned Readings* on page 5 for more details about the contents and weights.)
- While I will announce the date, time and location of the final exam, you are ultimately responsible for ensuring the accuracy of the information.
- If you miss a midterm for any reason (eg, illness, technical, religious, work obligation, exam scheduling conflict, etc.), the weight of that midterm is shifted automatically to the final. There are NO MAKEUP, ALTERNATE OR DEFERRED MIDTERMS under any circumstances, nor may they be written early.
- If you miss, or cannot write, the final, you must request a deferred exam according to the process described here (www.mcgill.ca/exams/dates/supdefer). Final exam accommodations are almost never approved for reasons relating to personal vacation/travel or family events.
- All exams are closed book, non-proctored, multiple-choice exams to be completed on *myCourses*.
- You may use a non-programmable calculator and scrap paper to assist you, but you many NOT use any other additional materials, including but not limited to notes, slides, online or offline materials, external websites, formula sheets, previous exams, dictionaries, your phone/tablet or anything else that would normally fall within the GENERALLY-ACCEPTED definition of cheating. Furthermore, you are to do this exam ON YOUR OWN, without discussing the materials with anybody inside or outside of the class. If you fail to follow any of these instructions, you will receive a grade of zero for the exam and will face academic misconduct proceedings in accordance with McGill's *Code of Student Conduct and Disciplinary Procedures*. If you are unsure if what you are doing is acceptable, ask first.
- Do NOT underestimate the difficulty of the exams. The style of the exams is to ensure timely feedback; you should not interpret that the exams are easy because they are multiple choice.
- Questions involve algebra, definitions, interpretations and multi-part questions where the answer to one multiple-choice question may lead to another.
- Each exam is available on *myCourses* 08:00 – 12:00 Eastern. You may begin the exam at a time of your choosing in that range, but once you begin, you must complete the 90-minute midterms before 12:00 Eastern. The final is similar but with a 2.5-hour final to be completed in a six-hour window.
- If you require university-approved special accommodations (eg, 30 min/hr extra writing time), you must notify me at least 24 hours prior to 08:00 Eastern on the exam day to receive it. You must factor these accommodations into your decision when to begin the exams.
- The first set of questions in each exam is a series of declarations that you will behave in accordance with the university's policies and procedures on academic integrity.
- After that, you see one multiple-choice question at a time. Questions are randomised so different students will be writing different exams, although the basic coverage is the same for all students.
- During the exam, you are not told whether you have answered the question (in)correctly and you do not see your grade for a few days after the exam closes. When the exam grade is ready, it is posted on *myCourses*.
- It is not possible to review your exams after you complete them. Do not worry though; the final consists of entirely different questions than those that appear on the midterms, so there is nothing to be learned from the exams after you complete them.

Tentative Lecture Schedule and Assigned Readings:

DATE	EVENT	COVERAGE
September 2	Introduction	—
September 4	Statistics, Data and Statistical Thinking	Chapter 1
September 9	Statistics, Data and Statistical Thinking	Chapter 1
September 11	Statistics, Data and Statistical Thinking	Chapter 1
September 14	Statistics, Data and Statistical Thinking	Chapter 1
September 16	Statistics, Data and Statistical Thinking	Chapter 1
September 18	Methods for Describing Sets of Data	Chapter 2
September 21	Methods for Describing Sets of Data	Chapter 2
September 23	Methods for Describing Sets of Data	Chapter 2
September 25	Methods for Describing Sets of Data	Chapter 2
September 28	Methods for Describing Sets of Data	Chapter 2
September 30	Methods for Describing Sets of Data	Chapter 2
October 2	Methods for Describing Sets of Data	Chapter 2
October 5	Methods for Describing Sets of Data	Chapter 2
October 7	Probability	Chapter 3
October 9	Probability	Chapter 3
October 13	MIDTERM 1 (08:00 – 12:00)	Chapters 1 – 2
October 14	Probability	Chapter 3
October 16	Probability	Chapter 3
October 19	Probability	Chapter 3
October 21	Probability	Chapter 3
October 23	Probability	Chapter 3
October 26	Probability	Chapter 3
October 28	Random Variables and Probability Distributions	Chapter 4
October 30	Random Variables and Probability Distributions	Chapter 4
November 2	Random Variables and Probability Distributions	Chapter 4
November 4	Random Variables and Probability Distributions	Chapter 4
November 6	Random Variables and Probability Distributions	Chapter 4
November 9	Random Variables and Probability Distributions	Chapter 4
November 11	Random Variables and Probability Distributions	Chapter 4
November 13	Random Variables and Probability Distributions	Chapter 4
November 16	MIDTERM 2 (08:00 – 12:00)	Chapters 3 – 4
November 16	Sampling Distributions	Chapter 5
November 18	Sampling Distributions	Chapter 5
November 20	Sampling Distributions	Chapter 5
November 23	Sampling Distributions	Chapter 5
November 25	Sampling Distributions	Chapter 5
November 27	Sampling Distributions	Chapter 5
November 30	Sampling Distributions	Chapter 5
December 2	Sampling Distributions	Chapter 5
December 3	Review	Chapters 1 – 5
TBD	Final Exam	Chapters 1 – 5

Course Objectives / Learning Outcomes:

Chapter 1
- Introduce the field of statistics.
- Demonstrate how statistics applies to business.
- Introduce the language of statistics and the key elements of any statistical problem.
- Differentiate between population and sample data.
- Differentiate between descriptive and inferential statistics.
- Introduce the key elements of a process.
- Identify the different types of data and data-collection methods.
- Discover how critical thinking through statistics can help improve our quantitative literacy.

Chapter 2
- Describe qualitative and quantitative data using graphs.
- Describe quantitative data using numerical measures.
- Describe the relationship between two quantitative variables using graphs.
- Detect descriptive methods that distort the truth.

Chapter 3
- Develop probability as a measure of uncertainty.
- Introduce basic rules for finding probabilities.
- Use probability as a measure of reliability for an inference.
- Provide an advanced rule for finding probabilities.

Chapter 4
- Develop the notion of a random variable.
- Learn that numerical data are observed values of either discrete or continuous random variables.
- Study two important random variables and their probability models: the binomial and normal models.
- Present some additional discrete and continuous random variables.

Chapter 5
- Establish that a sample statistic is a random variable with a probability distribution.
- Define a sampling distribution as the probability distribution of a sample statistic.
- Give two important properties of sampling distributions.
- Learn that the sampling distribution of both the sample mean and proportion is approximately normal.

Language of Submission:
In accordance with McGill University's *Charter of Students' Rights*, students in this course have the right to submit in English or in French any written work that is to be graded.

Academic Integrity:
McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the *Code of Student Conduct and Disciplinary Procedures*.

Text-Matching Software:
As per McGill University's *Policy on Text-Matching Software*, this course uses such software. Item 2 of the Policy states, in part, that, "*Students shall also be informed in writing before the end of the drop/add period that they are free, without penalty of grade, to choose an alternative way of attesting to the authenticity of their work. Instructors shall provide students with at least two possible alternatives that are not unduly onerous and that are appropriate for the type of written work.*"

If you prefer an alternative way of attesting to your work's authenticity be used, you may choose to…
- Submit copies of multiple drafts;
- Submit photocopies of sources;
- Take an oral examination directed at issues of originality; or,
- Respond in writing to a quiz or questions directed at issues of originality.

Student Assessment Policy:
The *University Student Assessment Policy* exists to ensure fair and equitable academic assessment for all students and to protect students from excessive workloads. Students are encouraged to review this Policy, which addresses multiple aspects and methods of student assessment (eg, the timing of evaluation due dates and weighting of final examinations).

Copyrighted Materials:
Instructor-generated course materials (eg, handouts, notes, summaries, exam questions, etc.) are protected by law and may not be copied or distributed in any form or in any medium without explicit permission of the instructor. Note that infringements of copyright can be subject to follow up by the University under the *Code of Student Conduct and Disciplinary Procedures*.

Inclusive Learning:
While I endeavor to provide an inclusive learning environment, if you experience barriers to learning in this course, do not hesitate to discuss them with me and/or with the *Office for Students with Disabilities*.

End-of-Course Evaluations:
End-of-Course Evaluations are one of the ways that McGill works towards maintaining and improving the quality of courses and the student's learning experience. You will be notified by e-mail when the evaluations are available.

Students' Rights:
Additional policies governing academic issues that affect students can be found in the *Handbook on Student Rights and Responsibilities*.