ECO 220Y: Quantitative Methods in Economics
Fall/Winter 2016-17, L0101 & L0201
Department of Economics, University of Toronto

Instructor: Prof. Patrick Baude |bōd| Email: patrick.baude@utoronto.ca
Office hours: Tuesday 12:30-1:30pm, *Max Gluskin House #323*
Lectures: L0101 – Tues 10:10am-12pm, SS 2135
                  L0201 – Tues 2:10pm-4pm, LM 159

Head TA: Hammad Shaikh   Email: hammy.shaikh@mail.utoronto.ca
Office hours: Wednesday 12:30-1:30pm, *Max Gluskin House #213*
Tutorial: L0101 & L0201 – Friday 9:10-10am & 10:10-11am, SS 2135

TA: Louis-Etienne Salmon-Belisle   Email: louis.salmon.belisle@mail.utoronto.ca
Office hours: Thursday 1:30-2:30pm, *Max Gluskin House #313*

ECM: Christy Chen   Email: christy.chen@utoronto.ca
ECM TA: Thomas Russell   Email: thomas.russell@mail.utoronto.ca

Course Description & Learning Objectives

The official description for this course is as follows: *Numerical and graphical data description; data collection and sampling; probability; sampling distributions; statistical inference; hypothesis testing and estimation; simple and multiple regression analysis (extensive coverage). Learn how to analyze data and how to correctly interpret and explain results. Applications include research papers in economics.*

That's a nice list, but since you haven't taken this class yet, it's likely that you don't know what all those words mean. So, why should you take this class?[1] In my view, the most important things in life involve decision making. Should I go to Uni or go get a job? Should I go out to a party on Thursday or to the library to study for Friday's ECO220 exam? Should I buy a house or continue renting? Am I ready to start a family? Have I saved enough to retire? The quantitative methods that you will learn in this course are tools for helping find answers to a broad array of questions like these. These methods fall under three broad groups: How to work with data, probability & statistics, and regression analysis. These topics will help you synthesize information, draw appropriate conclusions, and ultimately help you use information to help make better decisions.

The broad learning objectives for this course include:

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[1] Other than it being a requirement for many of you.

1) Distinguish by their merits and limitations between the different ways of presenting data in order to communicate information
2) Critiquing dishonest data presentation and the ramifications
3) Defining the probabilities of certain events occurring given information about their probability distributions and the probability distributions of possibly related events
4) To Define the central tendency and variability of a variable when randomness is involved
5) A thorough investigation of the statistical properties of data samples and the importance of the size of the sample in how sure you can be of your conclusions
6) Arguing the important distinction between an association between two things and the causal relationship between them
7) Dissecting how to interpret multiple linear regression estimates for a variety of types of models
8) Learning how to use statistics to make concrete statements about large groups by observing the characteristics of a small sample from the group

Prerequisites & Exclusions

Prerequisites: ECO100Y1(67%)/ECO105Y1(80%); MAT133Y1/(MAT135H1, MAT136H1)/MAT137Y1/MAT157Y1

Exclusions: ECO227Y1, GGR270H1, PSY201H1, PSY202H1, SOC300H1, STA107H, STA220H1, STA221H1, STA247H1, STA248H1, STA250H1, STA257H1, STA261H1

I am not authorized to waive prerequisites. See this link for details should you have questions.

Course Meetings

Two identical lectures will be given on Tuesdays, one in the morning and one in the afternoon. You may attend either regardless of which you are registered for. Note though, that the lectures are held in different locations!

Tutorial is scheduled for Fridays from 9:10-11am. The four midterm tests will be administered during the tutorial time and will take the entire 110 minutes. When there is not an exam, tutorials will be held by the Head TA from 9:10-10am and again from 10:10-11am.

Website

Course information including announcements, syllabus, problem sets, and additional readings will be posted on Portal. Be sure you can access the course via Portal and let me know after the first class if you cannot.

Required Textbook

Business Statistics, Third Custom Canadian Edition for ECO220Y, Published 2013 by Sharpe, De Veaux, Velleman, and Wright.

This book was published in 2013, so used copies should be available. Do not purchase other editions. The course will follow the required text relatively closely. Unless noted, you will be responsible for the entirety of the chapters listed even if some items are not covered during lecture nor tutorial. Any supplementary readings assigned throughout the course of the semester will be posted to Portal.

Course Requirements and Grading

You are expected to come to class on time and to ask questions during class if something is not clear to you. Your overall course grade will be determined based on the following:

	Weight
Excel Course Module	10%
Quizzes	15%
Midterm Exams	50%
Final Exam	25%

- **Quizzes** – Weekly online quizzes are meant to give you an incentive to keep up with the course material, and to inform me if certain topics need more attention. Quizzes will <u>open on Fridays at 1PM and close on Mondays at 8PM</u>[2]. You will have one hour to complete each quiz from when you start it, and you can use any resources available to you other than other human beings. Note that quiz questions can and will differ between students, so if you feel tempted to rely on your classmate's solutions, don't. Furthermore, the grading of quizzes will be such that it is in your best interest not to guess if you don't know an answer.[3]

  There will not be quizzes due on the first Monday of the fall term, nor on the Monday immediately following each midterm exam. This results in 19 quizzes, of which <u>the lowest three will be dropped</u>. The quiz deadlines are listed in the course schedule.

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[2] See schedule for the two exceptions during weeks 5 and 19.

[3] To illustrate, take the case of a multiple choice question with four options A,B,C, and D that is worth 1 point. Getting the question correct earns you 1 point. An incorrect answer results in a deduction of 0.35 points. Leaving the question blank results in no points earned/deducted. In this way, your expected score on a 10 question quiz on which you guess on all questions is -0.125. If you are able to eliminate one incorrect choice and guess among the remaining three choices, your expected score becomes +1. If you are able to eliminate two incorrect choices, your expected score becomes +3.25.

- **Midterm Exams –** There will be 4 midterm exams. Midterms will be 110 minutes in duration and the dates are listed in the course schedule. Each midterm will cover roughly 5-6 weeks' worth of material. <u>Your lowest scoring midterm will be dropped</u> and the remaining three midterms will be equally weighted and combined will constitute 50% of your course grade. Midterm exams will be administered on Fridays and graded using [Crowdmark](#) and returned electronically.

- **Final Exam** – The final exam for ECO220 is coordinated across sections and instructors. This means that you will take the same exam as your peers enrolled in other Professors' sections of ECO220. The final will be scheduled during the exam period by the university.

- **Homework –** In addition to the weekly graded quizzes, problems will be posted to Portal each Tuesday after lecture based on the material we cover. In general, these will be specific exercises from the text book that have been chosen specifically for our purposes. It is in your best interest to work through the questions on your own, preferably prior to the Friday tutorial because the best learning happens through doing.

  Even though your work on these problems will not affect your grade directly, doing these questions will undoubtedly have a positive effect on your course grade through higher exam/quiz scores.

Any request to have an exam regraded must come within 1 week of it being returned. Submit your request formally via email to the instructor (also CC all TAs) with your Crowdmark link and a detailed justification for your request. If granted, a regrade *can* result in a lower score.

I understand that unforeseen events happen and that ECO220 is only one slice of your life over these 24+ weeks. It is this appreciation for each student's personal circumstances that resulted in a grading scheme where your lowest midterm and three lowest quiz scores are dropped when computing your course grade. For this reason, DO NOT skip a quiz or exam thinking that it will be the one that gets dropped. You never know what may come up later on during the course. In the event that you need further accommodations due to extended health/family issues, contact your College Registrar. If you have known conflicts with the exam schedule below, please contact me before the second lecture.

Excel Course Module

This course is complemented by a required Excel Course Module (ECM). All students in ECO220 must enroll in the ECM.

The ECM is conducted by Instructor Chen ([christy.chen@utoronto.ca)](christy.chen@utoronto.ca).   Right away, you will sign up for weekly Excel tutorials held in a computer lab starting the week of September 26. (These are separate from regular TA tutorials.) These help you prepare for graded ECM work, which includes an Excel test in a computer lab. Instructor Chen develops the ECM curriculum and materials, trains a team of TAs, prepares the graded work, and supervises its marking. Look for the ECM site, including the ECM syllabus, on portal. Further, look for portal announcements and e-mails to sign up for Excel tutorials and tests: a range of times and days will be available, first-come, first-served. Make sure to double-check your schedule before signing up.

Electronic Communication

For questions about the course, please come to office hours. If you have a schedule conflict and cannot attend any of the office hours, send an email according to the following protocol:

To: TA Louis: louis.salmon.belisle@mail.utoronto.ca
CC: Prof Baude & TA Hammad: patrick.baude@utoronto.ca, hammy.shaikh@mail.utoronto.ca
Subj: ECO220 [Your subject here]

You will receive a response within two business days. This means that an email received on a non-holiday-weekend Friday at 4pm, may not receive a reply until the following Tuesday at 4pm. For certain questions, you will be directed to material on the course website, or to come to office hours in person. Again, be sure to email the professor and both TAs and to include "**ECO 220**" (no quotes) in the subject or you may not get a response. In addition, it is good practice to abide by the following guidelines:

- Use your utoronto.ca email address
- Do not send attachments of any kind
- Identify yourself and your section (L0101 or L0201)
- Listen to the advice here.

Extra Resources during Exam Weeks

The TAs will each be available for 3 additional hours during the week of each midterm exam and before the final exam for study help. Exact times and locations will be announced on Portal closer to the exams.

Economics Study Centre

The Department of Economics runs a study centre that is staffed by your peers in their 3rd and 4th years who got high marks on their 200-level courses. Please make use of the drop-in nature of the centre should you need guidance/mentorship on subject matter in this or any of your other 200 level economic courses. See their website for opening times and location details.

Academic Integrity

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (www.governingcouncil.utoronto.ca/policies/behaveac.htm) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:
- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:
- Using or possessing unauthorized aids.
- Looking at someone else's answers during an exam or test.
- Misrepresenting your identity.

In academic work:
- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see http://academicintegrity.utoronto.ca/).You are responsible for upholding the academic integrity of this course, and for abiding by the Faculty of Arts & Science

Rules & Regulations, and Policies:

- http://www.artsci.utoronto.ca/osai
- http://calendar.artsci.utoronto.ca/Rules_&_Regulations.html.

Accessibility & Accommodations

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code. This occurs through a collaborative process that acknowledges a collective obligation to develop an accessible learning environment that both meets the needs of students and preserves the essential academic requirements of the University's courses and programs.

For more information on services and resources available to instructors and students, please contact Tanya Lewis, Director, Director of Academic Success and Accessibility Services, at (416) 978-6268; tanya.lewis@utoronto.ca.

Accessibility services:
- http://studentlife.utoronto.ca/as/

Accommodations for Religious Observances:
http://www.viceprovoststudents.utoronto.ca/publicationsandpolicies/guidelines/religiousobservances.htm

Schedule

We will cover the topics in the order shown, but the exact dates may change if we get ahead or fall behind schedule. <u>See the instructor before the second lecture if you have any conflicts</u>.

Week	Lecture Date	Readings	Quiz Due?	Friday Tutorial
1	Tuesday, September 13, 2016	Ch 1-4 + Math Review	-	
2	Tuesday, September 20, 2016	Ch 5	Mon, Sep 19	
3	Tuesday, September 27, 2016	Ch 5	Mon, Sep 26	
4	Tuesday, October 4, 2016	Ch 6 + SW1.1	Mon, Oct 3	
5	Tuesday, October 11, 2016	CH 7 + Logarithms	Tue, Oct 11 10am*	**Exam Oct 14**
6	Tuesday, October 18, 2016	Ch 8	-	
7	Tuesday, October 25, 2016	Ch 9	Mon, Oct 24	
8	Tuesday, November 1, 2016	Ch 9 + Normal Table	Mon, Oct 31	
	Tuesday, November 8, 2016	**November Break - No Class**		
9	Tuesday, November 15, 2016	Ch 10	Mon, Nov 14	
10	Tuesday, November 22, 2016	Ch 10	Mon, Nov 21	
11	Tuesday, November 29, 2016	Ch 11	Mon, Nov 28	**Exam Dec 2**
12	Tuesday, December 6, 2016	Ch 12	-	
	Tuesday, December 13, 2016 Tuesday, December 20, 2016 Tuesday, December 27, 2016 Tuesday, January 3, 2017	**Winter Break - No Classes**		
13	Tuesday, January 10, 2017	Ch 12	Mon, Jan 9	
14	Tuesday, January 17, 2017	Ch 12	Mon, Jan 16	
15	Tuesday, January 24, 2017	Ch 13	Mon, Jan 23	
16	Tuesday, January 31, 2017	Ch 14	Mon, Jan 30	**Exam Feb 3**
17	Tuesday, February 7, 2017	Ch 18 + Logarithms	-	
18	Tuesday, February 14, 2017	Ch 18	Mon, Feb 13	
	Tuesday, February 21, 2017	**Reading Week - No Class**		
19	Tuesday, February 28, 2017	Ch 19	Mon, Feb 27#	
20	Tuesday, March 7, 2017	Ch 20	Mon, Mar 6	
21	Tuesday, March 14, 2017	Ch 20	Mon, Mar 13	
22	Tuesday, March 21, 2017	Ch 21	Mon, Mar 20	**Exam Mar 24**
23	Tuesday, March 28, 2017	Ch 21	-	
24	Tuesday, April 4, 2017	Catch Up / Extra Topic	Mon, Apr 3	
	April 10-28	**Final Exam Period**		

* The week 5 quiz will be due on *Tuesday at 10am* to accommodate the Thanksgiving Holiday.
\# The week 19 quiz will be *posted* on Friday, Feb 17 to accommodate the Reading Week.