AP/Econ 3210, Section A: Use of Economic Data

Code

Syllaus

Fall 2020: Remote instruction edition

Course Description

Introduces the theory and practice of empirical analysis of economic models. Develops tools to estimate economic relationships involving two or more variables and to test their significance. Relies on the use of Canadian data sets and statistical software packages to show how linear regression analysis is applied. Prerequisite: AP/ECON 2500 3.00 or equivalent. NCR: students who have successfully completed or who are currently enrolled in AP/ECON 4210 3.00. Course credit exclusions: HH/PSYC 3030 6.00, SC/MATH 3330 3.00. Note: Acceptable course substitutes are available in the Calendar.

Technical requirements for taking the course:

Several platforms will be used in this course (e.g., Moodle, Zoom, etc.) through which students will interact with the course materials, the course director/TA, as well as with one another. Please review this syllabus to determine how the class meets (in whole or in part), and how office hours and presentations will be conducted.

Students shall note the following: *Zoom is hosted on servers in the U.S. This includes recordings done through Zoom. If you have privacy concerns about your data, provide only your first name or a nickname when you join a session. The system is configured in a way that all participants are automatically notified when a session is being recorded. In other words, a session cannot be recorded without you knowing about it.*

Please review the technology requirements and FAQs for Moodle.

Computing

- A laptop or desktop computer with a working microphone and camera. A phone is not an acceptable substitute as some required components may not be accessible on smartphones.
- Stable, high-speed internet and reliable electricity.

Coursework

Component	Symbol	Calculation/grading	Weight toward grade
Homework (10)	**HW**	MyLabs	15%
Quizzes (10)	**Q**	MyLabs	20%
Assignments (4)	**A**	Me/TA	20%
Midterm (1)	**MT**	MyLabs	20%
Final Exam	**FE**	Me	25%

The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Assignments and tests will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 90, B+ = 75 to 79, etc.)

Components

Homework Homework is done on MyLabs. There is one homework for each chapter that we will study. The homework will be online for 5 days, and can be completed at any time during the allotted time. Each homework can be attempted twice. There are no extensions or regrades for homework. Your final grade on Homework is calculated by Mylabs as a best 8/10. Homework will become available on Fridays and must be completed before the following Thursday (Due at Tuesdays at Mid-night). Each homework will consist of 10 questions of varying types (multiple choice, true/false, numerical, ect.). For prepared students, the time commitment for each homework should be no longer than a half an hour.

Quizzes Quizzes are done on MyLabs. There is one Quiz for each chapter that we will study. The quizzes will be online for 3 days, and can be completed at any time during the allotted time. Each quiz only has **one** attempt. There are no extensions or regrades for quizzes. Your final grade on Quizzes is calculated by Mylabs as a best 8/10. Quizzes will become available on Thursday after the sync session and are due Saturdays at mid-night. Each quiz consists of 5 questions of varying types. For prepared students, the time commitment for each quiz should be no more than a half an hour. Once a quiz is started, there will be a half hour to complete it.

Assignments Assignments will be done in `Rmarkdown` and uploaded onto Moodle as an `HTML` document. There will be four (4) assignments during the term: two before the midterm and two after. There are no extensions for assignments, for any reason. Missed assignments receive a grade of zero. There are no make-up assignments. Students will have two weeks to complete each

assignment. **time commitment**

Assignments will be completed in `R Markdown` format (file extension `Rmd`). They will involve writing a combination of code and written prose, and the `R Markdown` format is crucial since it allows for a combination of the two. Assignments will be turned in through Moodle and they **must be submitted only in HTML format**, the result of calling "Knit HTML" from `RStudio` on your `R Markdown document`. Be careful that you do this, because work submitted in any other format will receive a grade of 0, **without exception.** I will post detailed instructions along with the first assignment when it is assigned.

Note also: all code used to produce your results must be shown in your HTML file (e.g., do not use echo=FALSE or include=FALSE as options anywhere).

Students may choose to collaborate with up to 4 friends on the assignments, but must indicate with whom they collaborated. Each student must submit their own assignment.

Midterm There will be one midterm exam, completed in MyLabs. The Midterm exam will be a similar format to the quizzes, but will be longer and comprehensive (covering chapters 2-5). Students will only have one attempt at the midterm exam. The midterm is written during class time, and will be one hour long. For students with the appropriate documentation, a make up midterm is available. The date and time of the make-up midterm will not be during regularly scheduled class time, and students will be required to make themselves available for the makeup exam, with no exceptions. The make-up midterm will **not be via MyLabs**. During the exam, you will have to be available on zoom to discuss your progress on the exam. Failing to make yourself available at any point during the exam will result in a grade of zero.

Students missing the mid-term exam must provide detailed documentation in the manner required by the Faculty of Liberal Arts and Professional Studies and the Department of Economics. You can find the requirements on the following link: Handbook (http://econ.laps.yorku.ca/files/2019/02/FW18-19_Undergraduate-Handbook.pdf)

Final Exam The final exam is scheduled by the registrar and must be completed during the scheduled time. The exam will be done online as a *Moodle* quiz. The format of the final exam will be announced before the exam.

Note: No permission is ever given to a student to write a test or exam in advance of its scheduled date.

Academic Honesty - exam and quiz taking

As your instructor, I am committed to your success as a York

University student which includes promoting and encouraging academic integrity in this course, and on exam and quizzes. I'd like to provide the following understanding of how to be academically honest on this exam:

1. You will complete your exam by yourself. No other person will complete the exam for you or will aid you. Impersonation or receiving any form of communication, assistance, paid or not, from another person during the exam will be considered cheating. Even sharing the test questions with other students is considered cheating.
2. Copying other people's words in your answers is not allowed and will be considered plagiarism/cheating. This means that you must put answers in your own words if you are using sources you have not written such as the course slides or other study notes.
3. You will not discuss the exam questions or potential answers with anyone during the test time. You will not replicate, copy, print or record any questions on this exam for any reason.
4. If you have technical difficulties during an exam, please email the instructor right away with a brief description (bmsand@yorku.ca (mailto:bmsand@yorku.ca)). I will be checking emails and will email you back immediately. Do not ask other students for help as that is not allowed (see the first point above).

Textbook and additional materials

Main text

We will use Stock and Watson (https://www.pearson.com/us/higher-education/program/Stock-Introduction-to-Econometrics-Plus-My-Lab-Economics-with-Pearson-e-Text-Access-Card-Package-4th-Edition/PGM2416966.html), 4th Edition. All students must have access to MyLabs.

Companion e-text

This e-text, Introduction to Econometrics with R (https://www.econometrics-with-r.org/index.html) is a great, free resource that follows the chapters in the main text with hands-on examples in `R`.

R and RStudio

R (https://www.r-project.org) is a free, open-source programming language for statistical computing. All of our work in this class will be done using R. **You will need regular, reliable access to a computer running an up-to-date version of R**. If this is a problem,

then let the Professor or TAs know right away.

RStudio (https://rstudio.com) is a free, open-source R programming environment. It contains a built-in code editor, many features to make working with R easier, and works the same way across different operating systems. Most importantly it integrates R Markdown seamlessly. You will use RStudio for the assignments.

Installing `R` and `Rstudio` is easy, free, and cross-platform. If you require help, please see this explainer. (https://www.dataquest.io/blog/tutorial-getting-started-with-r-and-rstudio/)

I will provide all examples and explanations of all code/commands in `R` that are required for this course. For students who wish to learn more, this is a good place to start. (https://education.rstudio.com/learn/beginner/)

Office hours / communication

I will host online one-on-one office hours using Zoom **by appointment only** on Monday from 1-2:30pm. This time is for private discussions only. I will not answer questions that could be readily answered by reading the syllabus or consulting google, or questions relating to exam coverage. Questions that relate to course material should be posted on the forum.

Course forum / Announcements

I will use the Moodle announcement function to post news/updates to the entire class. It is your responsibility to monitor the announcements often. If you have a question about course material, please use the course forum. Use email only to inform me of course problems (e.g. typos, missing information, etc.), pressing personal issues, and to make appointments for office hours. My email is bmsand@yorku.ca (mailto:bmsand@yorku.ca). If I can answer your email briefly, I will try to respond to within 3 business days. Otherwise, we can discus your issues via Zoom.

Course delivery

Course content will be delivered by a series of pre-recorded (Async) videos and live zoom sessions (Sync).

Async:

Video drops will be done on Fridays thoughout the semester, according to the schedule below. Some topics may have more than one video, and lengths may vary.

Sync:

The live zoom sessions will **not be recorded and uploaded**. These sessions will happen on Thursdays throughout the semester at

7pm, according the the schedule below. Lengths may vary, but will never exceed the scheduled class time.

Course layout

The layout of the course delivery is as follows for a generic three week segment. The symbols are **V** (video drop), **HW** (Homework), **L** (sync lecture session), and **Q** (Quiz). Consider generic topics A, B, and C. In the first week, there is a video drop and a homework release for Topic A. Students can review this Async material on their own time during the next 6 days, when the homework is due. The idea is to complete the homework before the sync lecture session on Topic A the following week on Thursday Thus, all students will be somewhat familiar with the material, which will facilitate discussion. On Thursday, the quiz for topic A will become available in the evening and is due the following Monday. On Friday, a video drop and homework release for topic B will occur, and so on.

Week 1	**Sunday**	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Satur**
						V / **HW** (Topic A)	
Week 2	**Sunday**	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Satur**
				HW due (Topic A)	**L** / **Q** (Topic A)	**V** / **HW** (Topic B)	
Week 3	**Sunday**	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Satur**
		Quiz Due (Topic A)		HW due (Topic B)	**L** / **Q** (topic B)	**V** / **HW** (topic C)	

Schedule

Week 1: Sept 7th Week 2: Sept 14th

Week 3: Sept 21st Week 4: Sept 28th

Week 5: Oct 5th Week 6: Oct 12th Week 7: Oct 19th

Week 8: Oct 26th Week 9: Nov 2nd

Week 10: Nov 9th Week 11: Nov 16th

Week 12: Nov 23rd Week 13: Nov 30th

- Thursday **Start of Semester**
  - L0: Chapter 1
  - No Quiz
- Friday
  - V1: Chapter 2
  - HW1: Chapter 2

Description

The lecture for the first week will introduce myself, the text book, and the layout of the course. On Friday, async material will be posted covering key concepts from chapter 2 and a brief introduction to `R`, `Rstudio`, and `Rmardown`.

Chapter 2 key learning objectives

Key concepts

- review of probability, random variables,
- mean and variance of a random variable,
- the sample mean of a random variable with a sampling distribution.

In practice

- reading data,
- using `R` to visualize a single variable (discrete and continuous): brief intro to `ggplot2`.
- calculating the mean and variance of a variable,
- using `R` to take a random sample, and visualizing its distribution.
