

ECO 375 H1S: Applied Econometrics I

Summer 2025, L0101

Department of Economics, University of Toronto

Instructor: Adrian K. Schroeder

Contact: Max Gluskin House, Office 078; adrian.schroeder@mail.utoronto.ca

Lectures: Check the schedule! Usually Mondays and Thursdays 11:00 am – 1:00 pm

Office hours: Mondays 2:00 pm – 3:00 pm, Max Gluskin House 078

TA: Zhengluo (Harrison) Zhang

Contact: zhengluo.zhang@mail.utoronto.ca

Tutorials: Check the schedule! Usually Tuesdays 11:00 am – 1:00 pm

Course Description

Econometrics combines elements of Economic Theory, Statistics, Probability Theory, and Mathematics. The primary objective of the course is to provide students with a solid theoretical and practical foundation for the interpretation of empirical evidence in economics. The course is built around the statistical foundations, and economic application, of the multiple regression model. Students will gain practical experience working with economic data using statistical software. The course uses matrix algebra.

Previous Training

Prerequisites: (i) ECO200Y1 or ECO204Y1 or ECO206Y1

(ii) ECO220Y1 (70%) or ECO227Y1 or STA257H1+STA261H1

Recommended: MAT221H1 or MAT223H1 or MAT240H1

Exclusion: ECO327Y5

The prerequisites are checked by the administration of the Department of Economics and students will be removed from the course list if the prerequisites are not met.

Textbook

"Introductory Econometrics" by J. M. Wooldridge, 6th or 7th edition, South-Western Cengage Learning. The book will be available at the [University of Toronto Book Store](#) or can be purchased from various online bookstores.

Course Website

The course website on Quercus is accessible through <https://q.utoronto.ca/>.

Software

R (latest version available at <https://www.r-project.org/>).

Evaluation

The final grade is based on the following:

Task	Weight	Due date
Midterm	35 %	July 21, 2025
Two graded problem sets	15 % (each 7.5%)	July 29, 2025 August 12, 2025
Final Exam	50 %	Final Exam Period

The **midterm** will be held during the tutorial time.

- The midterm will have 60 minutes duration, short-answer questions + some long.
- Zero grade will be given to students who miss the test, unless a medical note is received by the instructor within 48 hours of the missed test explaining why the test was missed.
- The note must be provided using the University of Toronto medical certificate;
- The note must state that on the test date the student was too sick to write the test.
- It is an academic offence to feign illness to avoid a test.
- If a student has been excused from a test on medical grounds, they will be permitted to write a make-up test.
- The make-up test will be worth the value of the midterm.
- Consistent with university policy, there is no "make-up" test for the make-up test. A zero grade will be applied if the make-up test is requested but missed.
- If students wish to get a regrade, they must provide a written explanation of why they believe their grade is mistaken and submit it to the instructor within one week of the midterm being returned to the class. Your grade may increase or decrease after reevaluation.

Problem sets will be distributed throughout the semester and form the basis of the tutorials. They will consist of both theoretical and computer- (data-) based problems. The additional problems sets will not be graded but serve to prepare students for the graded exams and graded problem sets.

There will be two **graded problem sets**.

- Graded problem sets must be submitted through Quercus in a Portable Document Format (PDF). Neither paper submission nor email submission will be

counted. Problem sets are due at 11:59 pm on their due date. There is a short grace period of 1-hour after the deadline, but beyond that we do not accept late submissions (no exceptions). There are no make-ups and no extensions for ANY reason.

- Both text and R code needs to be submitted.
- Students who fail to submit problem sets on time for medical reasons may seek special consideration by submitting a medical note within a week after the problem set is due.

For accessibility accommodation see <http://studentlife.utoronto.ca/accessibility>.

Generative AI:

You may use generative AI (GPT, DeepSeek, et al.) to help understand code snippets, bug reports, or outline high-level ideas for your own understanding, but you must provide your own analysis in submissions. Copying text directly from AI software into your submissions is not accepted as your original work. You have to paraphrase text or code generated by AI **and cite it** using the [university template](#). Additionally, please provide prompts as an endnote. The prompts cannot be "Solve problem set question X and generate R code for me" but should reflect that you have solved the theoretical nuances of the problem yourself, and used AI only to help with very specific issues that you encountered.

Uncited or unedited AI content will be considered use of an unauthorized aid, reported as an academic offense, and will receive a penalty of up to 100% of your grade. If you are unsure about how your use of AI aligns with academic integrity, please reach out to us for clarification before submitting your work.

Tentative Course Schedule

Session	Date		Topic	Material
1	July	3	1.Syllabus; 2. Overview of Econometrics; 3. Statistics Review	Ch 1, App A, B, C.1, C.2, C.5, C.6
2		7	4. Simple and Multiple Regression – Estimation	Ch 2, 3
3		10	5. Matrix Algebra for Regression Analysis 6. Multiple Regression in Matrix Algebra	Appendix D.1-D.6 Appendix E.1
4		14	7. Multiple Regression – Properties 8. Multiple Regression – Inference	Appendix E.2, Ch 3 Ch 4
5		17	9. Multiple Regression – Further Issues 10. Multiple Regression – Qualitative Information	Ch 6 Ch 7
		21	<i>Midterm Exam</i>	

6		22	11. Heteroskedasticity	Ch 8
7		24	12. Specification and Data Problems 13. Introduction to Time Series	Ch 9 Ch 10, 11
		28	<i>Graded Problem Set 1 due</i>	
8		28	14. Instrumental Variables	Ch 15
9		31	15. 2SLS	Ch 15
	August	4	University Closed	
10		7	16. Endogeneity in Applications 17. Simultaneous Equations	References in slides Ch 16
11		11	18. Asymptotic Analysis	Ch 5, Appendix C.3, E.4
12		12	19: (Time Permitting) Panel and Diff in Diff Models	Ch 13, Some Ch 14
13		13	Q&A Review Session	
		13	<i>Graded Problem Set 2 due</i>	
<i>Exam period</i>			<i>Final Exam</i>	

How to do well in this course:

General guidance ranked by importance: As with all quantitative courses, practice makes perfect!

- Keep up with all the non-graded exercises at the beginning of lecture notes. Try them *without referring to your notes*, observe what you struggle with to complete. That's what you should spend time on reviewing. Complete exercises before showing up for tutorial.
- Search for more exercises in the textbook or online referring to the same topics you struggled with. Come to office hours if you're not sure about a solution or want more resources, I'm here to help!
- Do the readings ahead of class. This way you have two teachers to tell you about the topic – first yourself at home, then me in the classroom! This helps students much more than they realize, and also makes sure you can ask questions during classtime.
- During lectures, take notes, preferably by hand. There is ample research documenting this helps with retention and understanding over and above typed laptop notes and the worst - not taking notes at all. Don't transcribe the whole lecture – focus on what is emphasized and use a [good notetaking strategy](#). I personally use concept maps for all subjects, including math, to this day.