

# ECO 375 H1F: Applied Econometrics I

Summer 2019, L0101

Department of Economics, University of Toronto

**Instructor:** Prof. Martin Burda  
**Contact:** Dpt of Economics 234; 416-978-4479; [martin.burda@utoronto.ca](mailto:martin.burda@utoronto.ca)  
**Lectures:** Monday and Tuesday 10:00 am – 12:00 pm in BA1230  
**Office hours:** Tuesday 12:15 pm – 2:15 pm

**TA:** Connor Campbell  
**Contact:** [cjames.campbell@mail.utoronto.ca](mailto:cjames.campbell@mail.utoronto.ca)  
**Tutorials:** Wednesday 10:00 am – 12:00 pm in BA1230  
**Office hours:** Wednesday 12:00 pm – 2:00 pm in GE40

## 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, 6<sup>th</sup> or 7<sup>th</sup> edition, South-Western Cengage Learning. The book will be available at the University of Toronto Textbook 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/>) or Stata IC.

## Evaluation

The final grade is based on the following:

Task	Weight	Due date
Midterm	30 %	May 22, 2019
Two graded problem sets	10 % (each 5%)	May 29, 2019 June 12, 2019
Final Exam	60 %	Final Exam Period

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

- The midterm will have 50 minutes duration, short-answer questions.
- Zero grade will be given to students who miss the test, unless a medical note is received by the instructor within one week 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 appeal a grade, 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.

**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 the Blackboard 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.
- Both text and Stata log files need 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>.

## Tentative Course Schedule

Session	Date		Topic	Material
1	May	6	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		13	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
		20	<i>Victoria Day, university closed</i>	
5		21	9. Multiple Regression – Further Issues 10. Multiple Regression – Qualitative Information	Ch 6 Ch 7
		22	<i>Midterm Exam</i>	
6		27	11. Heteroskedasticity	Ch 8
7		28	12. Specification and Data Problems 13. Introduction to Time Series	Ch 9 Ch 10, 11
		29	<i>Graded Problem Set 1 due</i>	
8	June	3	14. Instrumental Variables	Ch 15
9		4	15. 2SLS	Ch 15
10		10	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	<i>Graded Problem Set 2 due</i>	
<i>Exam period</i>			<i>Final Exam</i>	