

Introduction to Econometrics
ECON 345-002
Fall 2018
Wednesday, 7:20 – 10:00pm
Robinson Hall B106
3 credit hours

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Office hours: Wednesdays 6:00-7:00pm, or by appointment

INTRODUCTION:

Econometrics is the use of statistical techniques to study economic problems. Economists use econometric methods to estimate economic relations, study relationships among economic variables, attempt causal inference, and test hypotheses. The tools you will learn in this course form the basis of a great deal of quantitative research in economics. You can therefore think of this course as teaching you a toolkit and language that you can use to read economics papers and pursue your own research.

REQUIRED TEXTBOOK:

Introduction to Econometrics, 5th Edition by Christopher Dougherty
Online resources related to this textbook may be found at
<http://global.oup.com/uk/orc/busecon/economics/dougherty5e/>

Additional readings will be assigned throughout the course, and will be available through the university library website, <http://library.gmu.edu/>

COURSE OBJECTIVES:

This course should help you become proficient in the use of ordinary least squares (OLS) regression and several techniques that build on it, such as multiple regression, nonlinear regression, and instrumental variables. You will learn about the assumptions that underly these techniques, and what to do when these assumptions are violated. Moreover, you will learn about common pitfalls in econometric research, including omitted variable bias and the problem of including variables that should not be included. You will also learn how to use Stata to implement these techniques in practice, and how to write research papers that employ these techniques.

WRITING INTENSIVE COURSE:

This course has been approved by the Faculty Senate Writing Across the Curriculum Committee to fulfill all/in part the Writing Intensive requirement in the economics major. It does so through the 2500-word final paper and a 1000-word research proposal. The research proposal will be

completed through a draft/feedback/revision process. The first draft will be due October 10th; I will provide commentary on the draft, and the revised draft will be due on November 14th. The 2500-word final paper may be an original paper on the same topic as your research proposal, though if you do not feel that is tractable I could recommend particular datasets to work with, hypotheses to test, or papers to replicate. The final paper will be due on December 5th.

GRADING:

Your grade will depend on weekly quizzes on the week’s readings, a midterm exam, a final exam, a research proposal, a final paper, and weekly problem sets.

The grade breakdown will be as follows:

- Final exam: 30%
- Midterm exam: 20%
- Final paper: 20%
- Research proposal: 15%
- Problem sets: 10%
- Quizzes: 5%

GRADING SCALE:

A+: 100-98. A: 97-93. A-: 92-90. B+: 89-88. B: 87-82. B-: 82-80. C+: 79-77. C: 76-73. C-: 72-70. D: 69-60. F: 60-0.

IMPORTANT DATES:

- October 10th: First draft of research proposal due
- October 17th: Midterm exam
- November 14th: Research proposal revisions due
- December 5th: Final paper due
- December 12th: Final exam

STATA:

Throughout the course, several of your weekly problem sets will involve the use of Stata, a statistical software package. Stata will also be useful for your final paper. George Mason University students can access Stata online through the Virtual Computing Lab at <http://www.vcl.gmu.edu/>

SCHEDULED OUTLINE OF COURSE EVENTS:

Week	Topic	Readings
Week 1 (August 29 th)	What is Econometrics: A Brief Introduction; Some Statistics Review; Syllabus Review	
Week 2 (September 5 th)	Statistics Review 1	Dougherty, Introduction-R.8 and Appendix R.1-R.2 (pages

		1-36, 81-84)
Week 3 (September 12 th)	Statistics Review 2	Dougherty, R.9-R.15 (pages 37-81)
Week 4 (September 19 th)	Simple Regression Analysis	Dougherty, Chapter 1 (pages 85-112)
Week 5 (September 26 th)	Properties of Regression Coefficients and Hypothesis Testing	Dougherty, Chapter 2 (pages 113-155)
Week 6 (October 3 rd)	Multiple Regression Analysis	Dougherty, Chapter 3 (pages 156-195)
Week 7 (October 10 th) Research Proposal First Draft Due	Midterm Review	Research Proposal First Draft Due
Week 8 (October 17 th)	Midterm: October 17th	
Week 9 (October 24 th)	Nonlinear Models and Transformations of Variables	Dougherty, Chapter 4 (pages 197-229)
Week 10 (October 31 st)	Dummy Variables	Dougherty, Chapter 5 (pages 230-260)
Week 11 (November 7 th)	Specification of Regression Variables and Heteroskedasticity	Dougherty, Chapters 6-7 (261-310)
Week 12 (November 14 th) Research Proposal Revisions Due	Stochastic Regressors, Measurement Errors, and Instrumental Variables	Dougherty, Chapter 8 (pages 311-342) Acemoglu, Johnson, and Robinson (2001). "The Colonial Origins of Comparative Development" <i>American Economic Review</i> 91(5): 1369-1401. Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2004). "Do Institutions Cause Growth?" <i>Journal of Economic Growth</i> 9: 271-

		303. Research Proposal Revisions Due
Week 13 (November 21 st) NO CLASS	NO CLASS: Thanksgiving Break	
Week 14 (November 28 th)	No Panaceas: The Limits of Quantitative Methods	Deaton (2010). “Instruments, Randomization, and Learning About Development” <i>Journal of Economic Literature</i> Acemoglu (2010). “Theory, General Equilibrium, and Political Economy in Development Economics” <i>Journal of Economic Perspectives</i> 24(3): 17-32. Levy & Peart (2008). “Inducing Greater Transparency” <i>Eastern Economic Journal</i>
Week 15 (December 5 th) FINAL PAPER DUE	Final Review	FINAL PAPER DUE
FINAL EXAM (DECEMBER 12TH, 7:30-10:15 pm)		

DISABILITY ACCOMMODATIONS:

If you have a documented disability or other condition that may require accommodations you should: 1) make sure this documentation is on file with Disability Services (SUB I, Rm. 4205; 993-2474; <http://ds.gmu.edu>) to determine the accommodations you need; and 2) talk with me to discuss your accommodation needs.

EMAIL AND STUDENT PRIVACY:

Due to the requirements of the [Family Educational Rights and Privacy Act \(FERPA\)](#), students must use their MasonLive email account to receive important University information, including communications related to this class. I will not respond to messages sent from or send messages to a non-Mason email address.

ACADEMIC INTEGRITY:

The integrity of the University community is affected by the individual choices made by each of us. Mason has an Honor Code with clear guidelines regarding academic integrity. Three fundamental and rather simple principles to follow at all times are that: (1) all work submitted be your own; (2) when using the work or ideas of others, including fellow students, give full credit through accurate citations; and (3) if you are uncertain about the ground rules on a particular assignment, ask for clarification. No grade is important enough to justify academic misconduct. Plagiarism means using the exact words, opinions, or factual information from another person without giving the person credit. Writers give credit through accepted documentation styles, such as parenthetical citation, footnotes, or endnotes. Paraphrased material must also be cited. More information on the Honor Code may be found at <https://oai.gmu.edu/mason-honor-code/>

UNDERGRADUATE COURSE REPETITION:

Beginning fall 2018, there is a limit of three graded attempts for this course. A W does not count as a graded attempt. Please see AP. 1.3.4 in the University Catalog and consult with your academic advisor if you have any questions.

SEXUAL HARASSMENT, SEXUAL MISCONDUCT, AND INTERPERSONAL VIOLENCE:

George Mason University is committed to providing a learning, living and working environment that is free from discrimination and a campus that is free of sexual misconduct and other acts of interpersonal violence in order to promote community well-being and student success. We encourage students who believe that they have been sexually harassed, assaulted or subjected to sexual misconduct to seek assistance and support. [University Policy 1202: Sexual Harassment and Misconduct](#) speaks to the specifics of Mason's process, the resources, and the options available to students.

As a faculty member and designated "Responsible Employee," I am required to report all disclosures of sexual assault, interpersonal violence, and stalking to Mason's [Title IX Coordinator](#) per [university policy 1412](#). If you wish to speak with someone confidentially, please contact the [Student Support and Advocacy Center](#) (703-380-1434), [Counseling and Psychological Services](#) (703-993-2380), [Student Health Services](#), or [Mason's Title IX Coordinator](#) (703-993-8730; cde@gmu.edu).

*For extra credit, please use your George Mason University email address to email me a picture of a cute dog before Wednesday, September 5th *