

Economics 385

Econometrics

Fall 2014

Tuesdays and Thursdays 10:30-11:50am in PAC 107

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Office Hours: Tuesdays, Wednesdays, and Thursdays 2-3:30pm¹

General Course Information

Purpose: Econometrics is the study of statistical techniques for analyzing economic data. The course reviews multiple regression and develops several more advanced estimation techniques. Students work on individual research projects and learn to use econometric software.

Assignments and Credit:

Class participation	10%
Problem Sets (10)	10%
Research paper	
- Proposal	5%
- Final paper	25%
Exam 1	25%
Exam 2	25%
Total	100%

Readings: There is one required text: Jeffrey Wooldridge, *Introductory Econometrics: A Modern Approach*, 5th edition, ISBN 978-1-111-53104-1. In addition, there is one highly recommended text: Peter Kennedy, *A Guide to Econometrics*, 6th edition, ISBN 978-1-4051-8257-7. Chapter numbers in the course schedule refer to these texts, denoted respectively as [W] and [K].² All other course readings will be made available through the course moodle. One copy of each textbook can be accessed at the reserve desk in the library, and I am also willing to lend out several older copies of Kennedy on a first-come, first-served basis. Exams are open books and open notes. You will not be allowed to use an e-book during the exam (only hard copies).

Class Participation: Class attendance is expected. You are expected to complete all assigned readings before class. I will use our class-time to focus on the most important topics as well as on those that are more difficult to comprehend.

I will give a *B* for class participation to a student who regularly gives the answers to my questions thereby demonstrating that s/he has read and understood the required materials. I will give an *A* for class participation to a student who regularly asks insightful questions as well as giving the answers to my

¹ Exceptions: no office hours on Thursdays Sept. 25 and Oct. 16.

² Google books has a mostly complete version of the 5th edition of Kennedy available for free. Two key differences between the 5th and 6th edition: (a) page numbers don't carry over for any chapter; (b) chapters 9 and 23 are brand new. If the syllabus lists one of chapters 10-22, just read chapter 9-21 in the older version instead. In addition, there are also small changes throughout the text.

questions. I will give a C or lower for class participation to students who never participate in class or who are often not able to answer questions. If you know that you will have to be late and/or leave early, please let me know in advance.

Excessive absences, late arrivals or early departures will lead to a lower class participation grade. If you are texting or using a computer at any time during a class, I'll mark you absent for that day even if you talk a lot during that day's class.³

Problem Sets: Problem sets are assigned regularly (almost every week). They have several purposes: to review and extend concepts from lecture or the notes, to introduce related topics not covered in lecture, and to provide feedback on your comprehension of the material to date. *Note: problem sets will occasionally cover material before it is covered in class.* There will be eleven problem sets and your ten best problem set grades will be counted towards your course grade.

There is no course assistant. You will have to figure out the problem sets on your own or with friends.

Problem sets will be due at 1pm on Wednesdays, and should be submitted via the Econ 385 slot in the departmental locked box. As the solutions to the problem sets will be posted promptly, late problem sets will receive a maximum grade of check-minus. Problem sets cannot be submitted directly to the course grader and receive credit unless we have made special one-off arrangements (which are not common).

Grading will be on a check-plus, check, check-minus scale. *Seriously deficient problem sets will receive no credit.* The rough rubric for determining grades: all questions answered correctly or all questions answered using right strategies (but with possible computational errors) = check-plus; some questions skipped or many questions answered incorrectly = check-minus; and almost everything in between = check. Late assignments will only get a check-minus irrespective of quality as solutions will be available on line as soon as the deadline for submission passes.

Up to three people may cooperate on each problem set; when students submit joint problem sets all students will get the same grade. All assignments will be returned via the student boxes in the alcove next to the economics department office. (When students cooperate on an assignment, the assignment will be returned to the box corresponding to the first student's surname.) Please do *not* list any students' name on the problem sets; instead, please put students' WesIDs.

Most assignments will require use of Stata, which is available in the data labs on campus. Three Stata workshops will be offered; each of the first two modules will be offered twice. All sessions are in Allbritton 204 and are also open to students from Econ 341. The google doc signup form will be posted to the course moodle.

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| 1. Introduction to Stata I | Thurs. Sept. 4 th , 4:30-6pm or 7-8:30pm |
| 2. Introduction to Stata II | Thurs. Sept. 11 th , 7-8:30pm or Fri. Sept. 12 th , 2:40-4:10pm |
| 3. Time Series and Panel Data | Thurs. October 23 rd , 7-8:30pm |

Additional assistance for Stata programming may be available from the QAC Statistics Tutors. Tutors are available in Allbritton 108 Mon-Fri 3-5:30pm, Mon-Thurs 7-10:30pm, and Sun 6-10:30pm.

Research Paper: A major goal of this course is to produce a well-written, carefully constructed, original piece of econometric research. The analysis employed in the paper should be more sophisticated than what would be acceptable for Econ 300, using techniques drawn from this course. Excellent papers will take a creative approach towards an interesting topic, and may form the first part of an honors thesis.

³ That said, if you will routinely use a computer for note-taking, that is different and will be okay.

Students who want to write a paper related to another elective should speak with both me and the other professor as early as possible to obtain our permission.

Your paper will be an in-depth exploration of any topic in empirical economics. The final paper will be about 15 pages long (not including references, appendices or exhibits), double-spaced, 12 point font, with the standard 1.25-inch margins (the Microsoft default setting). (Note: both the proposal and the final paper should follow this formatting.) Excessive length is generally detrimental to the quality of your work. As a result, papers cannot be longer than 20 pages, not including references, figures, tables, etc. At the low end: 14 pages is probably the minimum.

The proposal will be submitted electronically to moodle, and marked-up copies of your proposals will be returned via email. Hard copies of the final paper should be submitted to the locked box by the appropriate deadlines. You will also need to upload both the proposal and the paper to the appropriate file in turnitin (and I'll download them from there). *It is not necessary to also email me any of these files.*

The project has two stages: a proposal and a final submission.

Proposal: A 2-3 page prospectus is to be uploaded to a dropbox in the course moodle no later than 12 noon on Friday, October 24th. It should include a brief discussion of your topic, related citations (from academic research)⁴, data description and summary, and some discussion of the proposed econometric techniques. *Ideally, all relevant data will have been collected before this assignment is due.* (Note: do not print out your data set; I am simply seeking evidence that you can implement your proposed project.)

Final paper: Papers are due no later than 5pm on Thursday, December 4th (the last day of classes). All students can have an extension without penalty until 5pm on Tuesday, December 9th (the last day of reading period). Evaluation will be based primarily on the quality of your analysis. However, I expect your paper to be well-written and free of any grammatical, logical, or spelling errors.

Late papers: Late proposals and papers are penalized at the rate of one letter grade per day late.

Writing: If you would like assistance with your writing, consult with the Writing Workshop (sessions nearly daily in multiple locations around campus).

Turnitin: In addition to submitting your papers directly to me, the proposal and final paper must also be submitted by you to the class folder on turnitin.com by midnight on the appropriate due dates. Directions on how to use turnitin.com can be found on www.turnitin.com. (Obviously, if you have non-computer-readable attachments, you will not need to upload those into the system.) Our class ID number is 8452960 and the password is "econ385".

Prize: All papers that earn a grade of A or A+ will be eligible for consideration for the department's Lebergott-Lovell Prize, which is awarded annually to the best paper written in the current academic year that uses econometric techniques to analyze an economic problem. However, any paper that forms part of an honors thesis or senior essay is automatically excluded from consideration for the prize. The 3-person committee will be chaired by the econometrics instructor.

Exams: The exams are designed to be completed within the standard 80 minute class period but you may take up to two hours for each exam. The first exam will be held on Thursday, October 16th and you can

⁴ Newspaper or magazine articles are not appropriate references; wikipedia and its ilk are unacceptable.

stay until 12:30 if you want extra time.⁵ The second exam will be held during the registrar-assigned final exam time slot of Friday, December 12th, 2-5pm. [Although the final exam time slot is 3 hours, you will not be allowed to work past the 2 hour mark.]

You should view the problem sets as being mini-exams in the sense that the exam questions will be calibrated to the same degree of difficulty as the problem set questions. The key differences between problem sets and an exam will be: (1) time constraints, and (2) resources (you can't ask other folks for advice). Note, that these constraints automatically mean that the exam questions will have to be easier and/or shorter than problem set questions. (You will have access to old exams via the course moodle.)

Honor Code: All work submitted for a grade in this course must be your own original work. You are encouraged to discuss the assignments with your fellow students, but in accordance with the Honor Code, submitting another person's work as your own would constitute plagiarism and will not be tolerated. The research paper cannot be submitted in another course without express prior permission from both me and the instructor of the other course. If you have any questions about the application of the honor code, please contact me.

Missed Assignments: Should a personal emergency necessitate missing a scheduled exam or paper submission deadline, contact me as soon as possible **prior to the relevant date** to arrange for an alternative. Any such absence requires written certification from the Deans' Office.

Students with Disabilities: Wesleyan University is committed to ensuring that all qualified students with disabilities are afforded an equal opportunity to participate in and benefit from its programs and services. To receive accommodations, a student must have a documented disability as defined by Section 504 of the Rehabilitation Act of 1973 and the ADA Amendments Act of 2008, and provide documentation of the disability. Since accommodations may require early planning and generally are not provided retroactively, please contact Disability Resources as soon as possible. If you believe that you need accommodations for a disability, please contact Dean Patey in Disability Resources, located in North College, Room 021, or call 860-685-5581 for an appointment to discuss your needs and the process for requesting accommodations. Information can be found at <http://www.wesleyan.edu/studentaffairs/disabilities/>.

Contact: E-mail is my preferred way of being contacted. Normally I will respond within a day, excluding illness and travel. Placing in the subject of your email the phrase "Econ 385" plus a description of your message will likely result in a faster reply than a blank or generic subject.

My office is room 208 PAC. I will be available for questions during office hours and by appointment. If the door is open you should feel free to drop in, but understand that sometimes we may need to schedule a later appointment. If the door is closed, I am either not in or not available to meet with students.

⁵ Note, your professor will proctor the first half of this test before leaving for a flight. A different professor will proctor the second half of the test.

Course Schedule

Below is a list of topics to be covered in the course, and approximate dates for the material. This outline is meant to be a *very* rough guide only; the dates for the various assignments, however, are not expected to change. The required readings are almost entirely from the Wooldridge textbook [W] and some (optional) readings are listed from the Wooldridge and Kennedy textbooks [K]. For all readings from [K] the notes are considered exceedingly optional unless specifically listed below.

Assignments will be available on-line, and are due as indicated below. Check the course moodle for revisions to this schedule. Materials are added to the course moodle as the course progresses, including class lessons, handouts, homework assignments, links, and articles.

#	Date	Required readings	Optional readings	Assignment
I. Introduction and Review				
1	Tues., Sept 2	[W] Ch. 1.1-1.3 (1.4 optional); App. A; App. B	[K] p. xii; Ch. 1; App. A; App. B	
2	Thurs., Sept. 4	[W] App. C (can skim C.5-6); App. D		
Introduction to Stata I: Thur. Sept. 4 th , 4:30-6pm or 7-8:30pm in Allbritton 204				
3	Tues., Sept. 9	[W] App. D; Ch. 2		PS1 due Sept. 10
4	Thurs., Sept. 11	[W] Ch. 2 (including Appendix); App. E.1		
Introduction to Stata II: Thurs. Sept. 11 th , 7-8:30pm or Fri. Sept. 12 th , 2:40-4:10pm in Allbritton 204				
5	Tues., Sept. 16	[W] Ch. 3 (including Appendix)	[K] Ch. 3	PS2 due Sept. 17
II. Multiple Regression Analysis: Cross-Sections				
6	Thurs., Sept. 18	[W] Ch. 3; App. E.2	[K] Ch. 2.9 (see also the related notes); Ch. 12	
7	Tues., Sept. 23	[W] Ch. 4; App. E.3	[W] App. C.5-C.6 [K] Ch. 2.1-2.8; Ch. 3; Ch. 4.1-4.5	PS3 due Sept. 24
	Thurs., Sept. 25	No class – Rosh Hashanah		
8	Tues., Sept. 30	[W] Ch. 4	[W] App. E.4 [K] Ch. 6.1-6.2	PS4 due Oct. 1
9	Thurs., Oct. 2	[W] Ch. 5	[K] App. C; Ch. 3.2; Ch. 6; Ch. 7	
10	Tues., Oct. 7	[W] Ch. 6 (skim; cover 6.3-6.4 in class; exclude App.); Ch. 7.1-7.4 (skim; cover 245-248 in class)	[K] Ch. 5; Ch. 6; Ch. 15	PS5 due Oct. 8
11	Thurs., Oct. 9	[W] Ch. 8 (exclude 8.5)	[K] Ch. 8.1-8.3	
12	Tues., Oct. 14	[W] Ch. 9.4-9.5 Wrap up Review		
	Wed., Oct. 15	Exam review session, 6-8pm (optional) in PAC 125		
	Thurs., Oct. 16	Exam 1 (can stay until 12:30pm)		Exam 1

III. Multiple Regression Analysis: Time Series				
13	Thurs., Oct. 23	[K] Ch. 22 [W] Ch. 19	[K] Ch. 5; Ch. 6	Project proposal due to moodle by noon on Oct. 24
Analysis of Time Series and Panel Data: Thurs. Oct. 23 rd , 7-8:30pm in Allbritton 204				
14	Tues., Oct. 28	[W] Ch. 10 (skim; cover parts of sections 10.2, 10.3, and 10.5 in class)	[K] Ch. 8.4 (see also the related notes); Ch. 19	PS6 due Oct. 29
15	Thurs., Oct. 30	[W] Ch. 11.1-11.3; Ch. 12	[K] Ch. 19.1-19.4; Ch. 8	
16	Tues., Nov. 4	[W] Ch. 12		PS7 due Nov. 5
17	Thurs., Nov. 6	[W] Ch. 18.1-18.4 (skim 18.5)	[K] Ch. 19.5-19.6; Ch. 10.2	
IV. Multiple Regression Analysis: Panel Data				
18	Tues., Nov. 11	[W] Ch. 13 (skim it; we'll cover parts of sections 13.1-13.3, 13.5, and the appendix in class); Ch. 14	[K] Ch. 18	PS8 due Nov. 12
19	Thurs., Nov. 13	[W] Ch. 9.2; Ch. 15 (skim 15.4, 15.6-15.8)	[K] Ch. 9 (and the related notes for 9.2); Ch. 8.5 (and related notes); Ch. 10.1	
20	Tues., Nov. 18	[W] Ch. 15		PS9 due Nov. 19
21	Thurs., Nov. 20	[W] Ch. 16 (skim 16.5-16.6)	[K] Ch. 11	
22	Tues., Nov. 25	[W] Ch. 17 (including both Appendixes; skim 17.3)	[K] Ch. 16, Ch. 17.1-17.3	PS10 due by 4pm Nov. 25
23	Tues., Dec. 2	[W] Ch. 17 Wrap up		PS11 due Dec. 3
24	Thurs., Dec. 4	Cover extensions for future reference; Workshop papers		Research paper due Dec. 4⁶
	Fri., Dec. 12	Exam 2, 2-4pm⁷		Exam 2

⁶ All students have an automatic extension without penalty until 5pm on Tuesday, December 9th.

⁷ Exam review session will be arranged for Wednesday or Thursday based on our schedules.