Course Overview

The purpose of this course is to provide an introduction to econometrics – the statistical methods that economists use to evaluate empirical relationships and test economic theory. Attention will be given both to econometric theory and to the problems that arise when applying econometric techniques to real world data. We begin with an extended discussion of univariate and multivariate regression analysis. Later in the semester, we tackle more advanced topics, such as instrumental variables, limited dependent variable models, and the application of regression models to time series and panel data.

Prerequisites

The prerequisites for this course are Econ 310: “Statistics: Measurement in Economics” and Math 221: “Calculus and Analytic Geometry”.

Class Meetings

Lecture is held in Social Science 6104 on Tuesdays & Thursdays from 1 to 2:15 p.m. for Lecture 1 and from 2:30 to 3:45 p.m. for Lecture 2. My office hours are Mondays from 10:30 a.m. to 12:00 p.m. in Social Science 7321.

Textbook


Since I post my lecture notes online, some students have mentioned in past semesters that they found the textbook unnecessary. As a result, I now list it as an optional text. That said, I still highly recommend it as a resource.

Differences between the 4th, 5th, and 6th editions of Wooldridge are minimal, so if you prefer to save money buying a prior edition, that’s absolutely fine.

Course Webpage

Lecture notes and other course materials will be posted on Learn@UW: https://learnuw.wisc.edu/
Evaluation

Your overall grade for the course will be based on the following components:

• Midterm Exams: There will be two midterms, each worth 20% of your overall grade. Midterms will be held in class on October 12 and November 16. **Ensure you are available these dates, as midterm exams will not be rescheduled for any student for any reason.** On a case by case basis, in the event of a truly unavoidable absence (submit a written statement in advance of the exam), I may elect to shift the weight of a missed exam to subsequent exams. Note, however, that a cold or flu does not constitute an unavoidable absence – illnesses must be severe enough to make attendance impossible and must be fully documented.

• Final Exam: The (cumulative) final for this class is worth 30% of your overall grade and will be held **Wednesday December 20 from 7:25 p.m. - 9:25 p.m.** As with the midterms, in a class this size it is not possible to reschedule the final – even when students have multiple exams in a 24 hour period. However, if you have another exam at exactly the same time, then I am willing to reschedule so long as you provide evidence of enrollment in a class with a conflicting final and notify me at least two weeks in advance.

• Problem sets: There will be five problem sets, which together are worth 30% of your grade – so completing them will be critical to your success. **For full credit, problem sets must be submitted (either in-class or under my office door) by 3:45 p.m. on the day they are due.** Late problem sets may be submitted (under my office door) up to 24 hours after this deadline, but will receive a 20% deduction. After that point, late problem sets will no longer be accepted for any reason. Do not submit problem sets in my mailbox or to your TA, as these have a tendency to get lost in the shuffle.

In order to provide you with hands-on experience using the methods taught in this course, the computer package Stata will be used extensively on the problem sets. **To receive full credit, you must submit your Stata log.** To help prepare you for these assignments, Stata will be used during lectures and tutorials will also be provided during discussion section. **You are encouraged to form a study group with your classmates, but you must write up your answers independently (meaning that you should not be looking at another student’s answers as you write up your own).** Problem sets with identical answers will not be accepted (i.e., receive zero credit).

After receiving a graded exam or problem set, please compare it with the answer key. If you find a mistake or are otherwise unhappy with your grade, you have two weeks to bring your complaint to me.
Your overall grade for this class will be curved. This curve can help your grade, but cannot hurt it. For those who like the gory detail, I compute your grade using two different methods. First, I assign grades according to a percentage scale, where $A = [92, 100]$, $AB = [88, 92)$, $B = [82, 88)$, $BC = [78, 82)$, $C = [70, 78)$, $D = [60, 70)$, $F = [0, 60)$. (In other words, if you receive an overall grade in the class of 92% or better, then you’ll receive an A.) Second, I assign grades according to a percentile scale, where $A = [80, 100]$, $AB = [60, 80)$, $B = [40, 60)$, $BC = [20, 40)$, $C = [6, 20)$, $D = [3, 6)$, $F = [0, 3)$. (In other words, if you perform better than 80% of the class, then you’ll receive an A). Your overall grade in the class is the higher of these two grades.

Course Outline

We will cover the following topics in this course:

1. Overview of Econometrics (Chapter 1)
2. Statistics Review (Appendix B and C)
3. Univariate Regression (Chapter 2)
4. Multivariate Regression (Chapters 3-6)
5. Regression with Dummy Variables (Chapter 7)
6. Heteroskedasticity (Chapter 8)
7. Time Series (Chapter 10)
8. Panel Data (Chapters 13-14)
9. Instrumental Variables (Chapter 15)
10. Limited Dependent Variables (Chapter 17 Section 1)

Students with Disabilities

If you have a documented requirement for accommodation, please bring me a photocopy of your McBurney Visa (not the original) at least two weeks before the first midterm.

Grievance Procedure

The Department of Economics has developed a grievance procedure through which you may register comments or complaints about a course, an instructor, or a teaching assistant. The Department continues to provide a course evaluation each semester in every class. If you wish to make anonymous complaints to an instructor or teaching assistant, the appropriate vehicle is the course evaluation. If you have a disagreement with an instructor or a teaching assistant, we strongly encourage you to try to resolve the dispute with him or her directly. The grievance procedure is designed for situations where neither of these channels is appropriate.

If you wish to file a grievance, you should go to room 7238 Social Science and request a Course Comment Sheet. When completing the comment sheet, you will need to provide a detailed statement that describes what aspects of the course you find unsatisfactory. You will need to sign the sheet and provide your student identification number, your ad-
dress, and a phone where you can be reached. The Department plans to investigate comments fully and will respond in writing to complaints.

Your name, address, phone number, and student ID number will not be revealed to the instructor or teaching assistant involved and will be treated as confidential. The Department needs this information, because it may become necessary for a commenting student to have a meeting with the department chair or a nominee to gather additional information. A name and address are necessary for providing a written response.

**Misconduct Statement**

Academic integrity is critical to maintaining fair and knowledge based learning at UW-Madison. Academic dishonesty is a serious violation: it undermines the bonds of trust and honesty between members of our academic community, degrades the value of your degree, and defrauds those who may eventually depend upon your knowledge and integrity.

Examples of academic misconduct include, but are not limited to: cheating on an examination (copying from another student’s paper, referring to materials on the exam other than those explicitly permitted, continuing to work on an exam after the time has expired, turning in an exam for regrading after making changes to the exam), copying the homework of someone else, submitting for credit work done by someone else, stealing examinations or course materials, tampering with the grade records or with another student’s work, or knowingly and intentionally assisting another student in any of the above. Students are reminded that online sources, including anonymous or unattributed ones like Wikipedia, still need to be cited like any other source; and copying from any source without attribution is considered plagiarism.

The Dept. of Economics will deal with these offenses harshly following UWS14 procedures (http://students.wisc.edu/saja/misconduct/UWS14.html):

1. The penalty for misconduct in most cases will be removal from the course and a failing grade,

2. The department will inform the Dean of Students as required and additional sanctions may be applied.

3. The department will keep an internal record of misconduct incidents. This information will be made available to teaching faculty writing recommendation letters and to admission offices of the School of Business and Engineering.

If you think you see incidents of misconduct, you should tell your instructor about them, in which case they will take appropriate action and protect your identity. You could also choose to contact our administrator (Tammy Herbst-Koel: therbst@wisc.edu) and your identity will be kept confidential.