

University of Arkansas
Fayetteville, Arkansas
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AEAB
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AGEC/ECON 5613
ECONOMETRICS I
3:05 – 4:20 p.m. M&W
HOEC 106

Course Description

Use mathematical statistics to formulate models and estimate relationships posited by economic theory or other theories of human behavior. Learn how such models can be used as tests of theory and the use of such models to forecast events and evaluate policies via simulation and counterfactual events. The single equation model is examined with emphasis on the problems of statistical inference, structural change, multicollinearity, autocorrelation, heteroscedasticity, categorical regressors, distributed lags and time series regressions. Applied aspects of empirical model specification and interpretation are emphasized.

Value of the Course

As professional economists and social scientists it is necessary to be able to quantify economic or social relationships and make inferences about theory applicability and the economic behavior of individuals, firms, sectors of the economy, etc. This course will furnish the analytical methods likely necessary to carry out the empirical aspects of dissertation/thesis work as well as research throughout your careers. In addition to doing your own research, the course will enable you to critically appraise the quality of empirical research by other economists/social scientists. And perhaps come to appreciate Henri Theil's thought that: "Models should be used, not believed". (H. Thiel. Principles of Econometrics, 1971.)

Course Objectives

So far in your academic careers you have studied economic or social theories but have done little to apply them to real world situations. In this course you will learn how to hypothesize an economic structure based on relevant economic theory, organize the observations on variables included in that structure, and then use statistical inference to estimate the model parameters. This last part is the main focus of the course. We will concentrate on understanding the correct use of estimators and how one goes about determining if an estimated model is useful. We will approach model building primarily from the traditional economic theory approach (structural econometric model) as opposed to data mining. Interpretation of results will be emphasized.

Web Site Information

This course is being taught in a quasi-electronic mode and all materials--reading list, syllabus, homeworks and readings except for the textbook--will be on the campus Blackboard Learn system. This can be accessed from any computer in the world that has Internet access. To do this you first type in:

<https://learn.uark.edu/webapps/login/>

Then you would log in and go to AGECE 5613. Data sets that will be used in exercises and old exams will be on this server and you can download them at will. Problem sets and data sets will be sent to your uark.edu campus e-mail addresses as well. Course marks will be recorded in Blackboard so that you can verify that the marks are correct. ***Ignore the course grade information because Blackboard will not be programmed to compute that on an online, real-time basis.***

Text and Other Readings

Textbook: We will use a variety of texts. Verbeek is the main text but is not inclusive of all the materials. Its price is modest and it is worth purchasing. Class notes are the heart of the instruction in this class.

Verbeek, Marno. A Guide to Modern Econometrics. Fourth ed. John Wiley & Sons. Chichester, England. 2012.

Computer Reference Manual is available free as a .pdf file online at:

http://store.econometrics.com/SHAZAM/SHAZAM_Reference_Manual_11_Interior.pdf

Students will be given electronic access to SHAZAM Version 11.0 that they may load onto their own computers.

Mullins Reserve Room

Most of the material (particularly in Kmenta and in Maddala and Lahiri) is accessible electronically through **Library E-Reserves** on Blackboard for this class. In **Library E-Reserves** you should be connected electronically with the list of electronic reserves.

The following texts are also being held in Mullins reserve in hard copy:

Kennedy, Peter. A Guide to Econometrics. 6th Ed. MIT Press. Cambridge, MA 2008.

Kmenta, J. Elements of Econometrics. Second ed., Macmillan: New York, 1986.

Maddala, G. S. and K. Lahiri. Introduction to Econometrics. fourth ed.; John Wiley & Sons: Chichester, England. 2009.

Reading Assignments

A reading list will be distributed. We will also read articles and manuscripts to illustrate the use of econometrics. Students are better off reading assignments before the class period.

Class Procedures

There will be two 75 minute lectures each week except those weeks having midterm exams. Students must use computers to complete homework assignments and complete the second hourly examination. On some days we will discuss specific journal articles that have been assigned.

Special Requirements

Students must become sufficiently proficient on the computer in the use of the software SHAZAM 11 if they expect to receive a passing grade on the second midterm examination. Students may use alternative software but the student has the obligation to make sure that software is available to them for the second exam.

Office Hours

Formally office hours are Tuesday, 1:30-2:30 p.m. and Wednesday, 10-11 a.m. However, feel free to stop in and ask questions anytime the light is on in my office. My belief is that graduate students should have direct access to the instructor of a graduate course. If I am busy when you stop by, we will arrange for a mutually convenient time to meet. If you set an appointment and subsequently find out you cannot make it, please send an e-mail or call my office and leave a message to that effect. Education students are advised to call ahead to save the walk in the event I am not in my office.

Attendance Policy

Take the exams, do the homework. If you are going to come to class late or leave early, please sit on the side of the classroom by the door. If you already know the material, you should be enrolled in some other course.

Examinations

There will be two midterm examinations and one final examination. The midterms will be 75 minutes on February 22 and 75 minutes on March 30. The final exam will be two hours in length. The final will be given Wednesday, May 11 from 1:00 p.m. to 3:00 p.m. Students will be permitted to bring one page of notes to the first exam and three pages of notes to the final exam. The second exam is completely open note and open book. Any make-ups of the first midterm, due to not taking the exam on the day given, will be oral at a mutually convenient time for student and instructor. The first midterm is optional. A make-up will only be given for the first midterm if a student does not take it for medical emergency (personal or immediate family) or religious reasons and requests a make-up midterm.

The final exam counts 50 percent of the grade. Each midterm counts 20 percent of the grade and homework counts 10 percent. The actual mechanics of grading go like this: A certain number of points are assigned for homework and the three exam performances. The scores are added up for each student and then letter grades are assigned on the basis on the point total for each student. If a student does not take the first midterm she/he will be assigned a numerical grade for that exam that is as many standard deviations from the mean of the midterm as their final exam grade is from the mean on the final. Letter grades of A, B, C, D and F will be assigned.

Homework

Homework will be assigned, usually on a weekly basis. The assignment is due the following Monday unless specified otherwise. Assignments will be graded on a full credit, half-credit or no credit basis. Nine assignments will be graded and the two low grades will be dropped before computing the homework grade. So there will be no “excused” or “late” assignments. If a student has a paper to present at a meeting, a job interview, ill health, etc., they take the zero on the assignment. If a student misses more than two assignments, they might start to ask themselves why they are in the class...

Most assignments will involve the computer. Students are encouraged to work with other students in the class on homework assignments since group interaction often leads to greater learning for all involved. Nonetheless, each student must hand in a separate set of answers. For exercises involving the computer, please only report the requested information. **Do not submit printouts unless requested.** SHAZAM will be used for the class computer exercises. SHAZAM is available on the Ag Econ lab computers.

UA Academic Dishonesty Policy

“As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail.” “Each University of Arkansas student is required to be familiar with and abide by the University’s ‘Academic Integrity Policy’ which may be found at <http://provost.uark.edu/> Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.”

Disclaimer

The instructor reserves the right to alter dates of topic coverage to adjust to the speed the class is moving.

Learning Disabilities

Students with learning disabilities will be accommodated in accordance with campus policies. Students with such disabilities should contact the instructor early in the semester so that the means of accommodation can be arranged.

Inclement Weather Policy

If the campus is open and courses are to be taught, class will most likely be held since the instructor lives within the Fayetteville city limits. However, each student must assess their own personal risk of coming to campus and moving around on campus. If there is inclement weather and the student believes it is unsafe for them to come to campus, then they should not come to campus. No assignment would be graded down in such a case and an exam would be re-scheduled. During inclement weather the instructor will try to communicate with students via e-mail.

Alternative Textbooks and Readings

- Cameron, A. C. and P. K. Trivedi. Microeconometrics: Methods and Applications. Cambridge University Press, New York, 2005.
- Davidson, R. and J. G. MacKinnon. Econometric Theory and Methods. Oxford University Press, New York, 2004.
- Enders, W. Applied Econometric Time Series. 3rd ed., Wiley, New York, 2010.
- Greene, W. H. Econometric Analysis. 7th ed. Macmillan, New York, 2012.
- Hendry, D. F. and B. Nielsen. Econometric Modeling: A Likelihood Approach. Princeton University Press. Princeton NJ. 2007.
- Intriligator, M. D., R. G. Bodkin, C. H. Siau. Econometric Models, Techniques and Applications. 2nd ed. Prentice-Hall, Upper Saddle River, NJ. 1996.
- Maddala, G. Econometrics. McGraw-Hill, New York, 1977.
- Mittelhammer, R. C., G. G. Judge, D. J. Miller. Econometric Foundations. Cambridge University Press, Cambridge, 2000.
- Perrachi, F. Econometrics. Wiley, New York, 2001.
- Ruud, Paul A. An Introduction to Classical Econometric Theory. Oxford University Press, Oxford, 2000.
- Wooldridge, J. M. Econometric Analysis of Cross Section and Panel Data. 2nd ed. The MIT Press, Cambridge MA, 2010.
- More elementary texts are:
- Hill, R. C., W. E. Griffiths, and G. G. Judge. Undergraduate Econometrics. Second Edition, Wiley, New York, 2001.
- Gujarati, D. N. Basic Econometrics. 4th ed. McGraw-Hill, New York, 2003.
- Murray, M. P. Econometrics: A Modern Approach. Pearson, Addison Wesley, Boston, 2006.
- Stock, J. H. and M. W. Watson. Introduction to Econometrics. 3rd ed. Addison Wesley, Boston, 2010.
- Wooldridge, J. M. Introductory Econometrics—A Modern Approach. 5th ed. South-Western Cengage Learning, Mason, Ohio, 2013.