

## **Eco 312 - Introduction to Econometrics**

Instructor      [John Kane](#)  
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Office Address  121 Penfield Library  
Office Hours    MW - 2:00 - 3:00 pm, Tuesday - 10:30 - 11:30 am  
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Homepage       <http://www.oswego.edu/~kane/eco312.htm>  
Location        Penfield 121  
Times            Monday, Wednesday - 10:20 - 11:30  
Start Date      January 24, 2011  
Course Credits  3

### **Required Text**

*Econometrics: An Applied Approach* (available in the ANGEL course shell)

### **Course Description**

During the past several decades, econometric analysis has been widely adopted by government agencies, private industry and by researchers in the fields of economics, political science, history, psychology, anthropology, sociology, biology, chemistry, education, and many other disciplines. This course provides an introduction to the theory and practice of econometrics.

The primary focus of this class will be on the application of the multiple regression model to economic analysis. You will learn how to use regression analysis to estimate the magnitude of economic relationships and to test hypotheses involving economic variables. You will also discover how to test for and correct for the presence of multicollinearity, heteroskedasticity, autocorrelation, and specification error. In addition to the basic ordinary least squares (OLS) regression model, we will also briefly examine two-stage (2SLS) and three-stage least squares (3SLS) estimation procedures. You will also have an opportunity to work with a number of limited dependent variable models. These models include logit, probit, and Tobit analysis (as well as other sample selectivity models).

One best learns how to practice econometrics by applying econometric tools in real-world applications. Thus, you will work on weekly homework assignments in which you will have an opportunity to apply the econometric tools that you are learning to a variety of problems that are representative of the work conducted by practicing econometricians. To synthesize the material learned throughout the semester, each student will complete an econometrics project that involves the application of the econometrics techniques developed throughout the course. This project will be presented in class during the final two weeks of the semester. It will also be summarized in a research paper. This paper must be typed (double spaced) and submitted electronically. There is no specific minimum length required, but it would be appreciated if the length can be kept below 100 pages.

## **Course Objectives**

The purpose of this course is to provide you with an introduction to the theory and practice of econometrics. The successful completion of this course will allow you to conduct econometric analysis and to critically read and understand a large proportion of econometric studies in economics and other disciplines.

Econometric analysis is an important component of graduate study in economics and other social sciences, applied mathematics, public policy, and management science and MBA programs. Thus, this course will also help provide you with a sound preparation if you choose to engage in future graduate work in these or other related areas.

### **Important dates:**

Test #1 Wednesday, February 23

Project proposal due Monday, March 7

Test #2 Wednesday, April 6

First draft of research paper due April 25

Class presentations April 27 - May 6

Research paper due Friday, May 6

Final exam Monday, May 9 (10:30 - 12:30 pm)

### **Topics:**

1. Introduction - Chapter 1
2. Review of statistics - Chapters 2-3
3. The bivariate regression model - Chapter 4
4. Hypothesis testing - Chapter 5
5. The multiple regression model - Chapter 6
6. Hypothesis testing in the multiple regression model - Chapter 7
7. Functional form: linearity - Chapter 8
8. Dummy variables and interaction terms - Chapter 9
9. Specification error and measurement error - Chapter 10
10. Multicollinearity - Chapter 11
11. Autocorrelation - Chapter 12
12. Heteroskedasticity - Chapter 13
13. Limited dependent variable models - Chapter 14
14. Simultaneous equation models - Chapter 15 (as time permits)
15. Random walks, unit roots, and cointegration - Chapter 17 (if time permits)

## **Course Requirements**

Your final grade in the course will be based upon your ability to productively engage in econometric analysis. This will be assessed using your performance on homework assignments (10%), 3 exams (20% / exam) and the final project (30%).

## **Course Prerequisites**

It is expected that students in this class have successfully completed an introductory statistics course and introductory microeconomics and macroeconomics.

## **Course Links**

- [Econometric resources on the internet](#)
- [Gretl for Mac](#)
- [Gretl for Windows](#)
- [Gretl main page](#)
- [Homework datasets](#)
- [IDEAS](#)

## **Grading Policy**

Your final grade in the course will be based upon your ability to productively engage in econometric analysis. This will be assessed using your performance on homework assignments (10%), 3 exams (20% / exam) and the final project (30%).

## **Attendance Policy**

It is expected that students attend all class sessions.

## **Academic Integrity**

Intellectual integrity on the part of all students is basic to individual growth and development through college course work. When academic dishonesty occurs, the teaching/learning climate is seriously undermined and student growth and development are impeded. For these reasons, any form of intellectual dishonesty is a serious concern and is therefore prohibited. The full intellectual integrity policy can be found at:

[http://catalog.oswego.edu/content.php?catoid=1&navoid=12#inte\\_inte](http://catalog.oswego.edu/content.php?catoid=1&navoid=12#inte_inte)

## **Disability Policy**

If you have a disabling condition that may interfere with your ability to successfully complete this course, please contact the Office of Disabled Student Services, 226 Hewitt Union. Phone: 312-3358. E-mail: [dss@oswego.edu](mailto:dss@oswego.edu)