

**AGEC 451**  
**Applied Econometrics**  
**Spring, 2019**

The course is structured to provide students with a first hand knowledge of econometrics, both its uses and abuses. Goals for the course are for students who complete the course to be able to conduct their own research project, where they analyze economic phenomenon using real data.

**Texts: None Required.**

Extensive lecture notes will be provided.

**Recommended for those who find texts useful:**

Studenmund, A.H. *Using Econometrics: A Practical Guide, 5<sup>th</sup> or 6<sup>th</sup> Edition*. Reading, MA: Addison Wesley 2006, 2011.

**Alternative Text:**

Kennedy, P. *A Guide to Econometrics 6th ed.* Cambridge, MA: MIT Press, 2008.

Either of these should be available online, used.

## **Course Outline**

We will cover the basic regression model and hypothesis testing in a perfect world, in which all the assumptions underlying the use of ordinary least squares regression are true. This is part I of the course and should take up most of the first half of the semester. Then we will look at how violations of each of the assumptions affect performance of regression. Finally, we will examine the analysis of qualitative responses, such as did you pass this course or not, and time permitting cover use of regression models in forecasting.

An Overview of Regression Analysis (Jan 7-14, chap 1)

Ordinary Least Squares (Jan 16-28, chap 2)

Learning to Use Regression Analysis (Jan 28-Jan 30, chap 3)

The Classical Model (Feb 4-6, chap 4)

**First Midterm** (Feb 8-11)

Hypothesis Testing (Feb 13-20, chap 5)

Specification: Choosing the Independent Variables (Feb 25-Feb27, chap 6)

Specification: Choosing a Functional Form (Mar 4-6)

Spring Break (Mar 11-15)

Multicollinearity (Mar 18, chap 8)

## **Second Midterm** (Mar 20-22)

Serial Correlation (Mar 25-27, chap 9)

Heteroskedasticity (Apr 1-3, chap 10)

Dummy Dependent Variable Techniques (Apr 8-10, chap 13)

Forecasting (Apr 15-17, chap 15)

## **Final Exam** (Apr 22-26 & final exam period)

## **Course Organization**

### **Grading**

Values of course activities in final grade calculations

<u>Activity</u>	<u>Value in final grade</u>
Attendance	10%
Homeworks & Labs	30%
1 <sup>st</sup> Midterm Exam	20%
2 <sup>nd</sup> Midterm Exam	20%
Final Exam	20%

### **Homeworks & Labs**

There will be 5 homeworks. Labs will be given every week. Many will include computer work as well as answers to questions. Students may work together on homeworks, but each student must submit their own answers. Students will be required to work together on the lab material in specified groups. Each group will submit one set of answers for each lab. Late homeworks will be penalized 10% for each class period the homework is late.

### **Class Participation**

Students who become involved in class learn more. Students are strongly encouraged to ask questions in class.

## Attendance

Attendance will be taken, both in lecture and in lab. Each student starts out with 100 points for attendance and will be allowed 2 unexcused absences from either lectures or labs during the semester. Each subsequent absence will cost ten points. Unexcused absences from the lab, if beyond the two allowed, will result in loss of ten attendance points and any points your group receives on the lab answers.

## Tests

The midterms and final will constitute 60% of your total grade. You will be given review questions before each exam and a review session will be held in which answers to the review questions will be discussed. Students will be allowed to bring a calculator and one 8.5" x 11" crib sheet to each exam.

## Econometric software

We will be using Excel to do most of the homework and lab exercises. This will require some patience, but all of you will have access to Excel when you are done with this class and your studies at Purdue, so if you when you have to do what you learned in the class you will be able to do so.

## Email

I will occasionally communicate with the class using email. I will try to remember to use my Purdue account for all emails to the class. If you don't check your Purdue email account regularly, then please provide me one which you do.

## Students with Disabilities

Please make an appointment within the first three weeks of the semester for a visit in my office to discuss the appropriateness of the instructional methods in this class or any academic adjustments that you may require. It is important that we talk about this at the beginning of the semester.

## Instructor

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## If you can't contact me then try:

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