

University of Utah  
Economics 4650-001 Spring 2011  
Principles of Econometrics  
Monday/Wednesday 11:50 AM - 1:10 PM WEB 1230

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**Office Hours:** By appointment at: [steve.bannister@econ.utah.edu](mailto:steve.bannister@econ.utah.edu)

**Textbook:** Chapters 1 through 14 of *Introduction to Econometrics*, Christopher Dougherty, ISBN 978-0-19-928096-4. Required. Available in Campus Book Store

**Prerequisites:** ECON 3620 and ECON 3640 Fulfills Quantitative Intensive BS.

**Credits:** 3 semester credit hours

### Course Calendar

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## Course Description:

This class has the potential for being one of the most rewarding classes you can take as an undergraduate – and a different experience as this is a class in applied economics.

You will learn a lot about statistical modeling and learn to use software packages to perform econometric analysis. This will be an applied class and should prepare you for working with data in a job environment or in graduate school.

The class builds on Econ 3640 and we will review basic probability and statistics as we move through the material. No experience with computers is assumed, but we will use computers extensively.

## Class Goals:

- To become familiar with multivariate regression analysis.
- To review using Excel software mainly as a data gathering tool.
- To learn how to use a statistical software package named *R*.
- To learn how to detect violations of classical linear model assumptions (CLRM).
- To learn how to deal with violations of the CLRM
- To learn how to collect, summarize, and analyze cross-sectional, time series, and mixed cross-sectional/time series data
- *To learn how to pose useful and interesting economic questions and analyse them with statistical procedures.*

## Course Schedule:

Chapters 1 through 14 of Introduction to Econometrics, Christopher Dougherty, ISBN 978-0-19-928096-4

aWeek	Dates	Chapters	Calendar
1	1/10,1/12	Review, 1, Introduction to R	1/10 First day of class
2	1/19	2	1/17 MLK,Jr. Day
3	1/24,1/26	3	
4	1/31,2/2	4	
5	2/7,2/9	5	
6	2/14,2/16	6	
7	2/23	7	2/21 President's Day
8	2/28 3/2	Midterm Review Midterm Exam	
9	3/7,3/9	8	
10	3/14,3/16	9	
11	3/21-3/26	Find a Beach!	Spring Break

12	3/28,3/30	10	
13	4/4,4/6	11	
14	4/11,4/13	12	
15	4/18,4/20	13	
16	4/25 4/27 4/28	Final Review Last Class	Last Day of Classes Reading Day
17	5/3 1 - 3 PM	Final Exam	

## Coursework:

The course consists of about twenty seven in-class lectures, including in-class reviews for the midterm and final exam. Each lecture is associated with readings from the textbook and demonstrations of the applied techniques. The course schedule, above, is a guide, and will be modified depending on our actual lecture experience.

There are two ways to teach an introductory Econometrics class. One, we could study the underlying theory, and use examples to solidify that knowledge. Before the availability of cheap computing power, we would study theory and work examples manually, perhaps with the help of an electronic calculator, mechanical calculator, slide rule, or abacus.

The second way is to teach Econometrics as an applied science. That is what we will do in this class. We will learn to use computers to solve computationally intense statistical problems. We will not ignore theory. I will highlight key theoretical foundations and assumptions, otherwise you will end up as a class of button-pushers with no clue as to what you are really doing.

In fact, I selected this text book because it is particularly good at explaining the underlying theory in a very straightforward and complete way. No what I call algebraic leaps of faith. So for those of you who are interested in the theory, the text book is a good resource. It would not be surprising to me for some of you to find that you actually enjoy the mathematics underlying the science, perhaps for the first time in your academic life.

Because the applied skills are so important, we will early in the semester have a homework assignment designed to tell me whether you have learned the basic mechanical skills including, loading the computer software, loading the data we wish to analyse, and perform basic analysis.

However, the software is simply a scientific tool. The most important parts of the class will be you learning how to formulate interesting and relevant research questions, so the story you are trying to tell about some particular social science

example, and then how to interpret the results of the analysis properly. I sometimes condense these ideas into the phrase “searching for the truth.”

Finally, I will pick some interesting current analysis to present in every lecture, to get you used to looking at the wealth of information available today with a critical eye.

I have high expectations of you. Each of you will become a competent beginning statistical analyst using classical mainstream methods. Some of you will become passionate about the discipline and will go on to advanced work. Most of you will rise to the challenge and actually enjoy the class.

Assessment will be via the homework, the midterm, the final, and a group project.

## **Communications among us:**

You should send all questions not covered in lecture regarding the course content, assignments, midterm scores, final scores, final grades, and so forth, directly to [steve.bannister@econ.utah.edu](mailto:steve.bannister@econ.utah.edu). I frequently check this which is ***my preferred mail***. Blackboard/Vista e-mail is hardly useful, so send me your preferred email which will allow me to have a useful group and individual email for the class. I will also communicate with you on course questions and developments using your preferred mail, so please send that to me ASAP.

## **Office Hours:**

My approach to office hours is to be as flexible as possible; when I am not lecturing, I am usually in the Economics office, or available via email. So, if you want to meet, the best thing to do is send me a mail, and we'll find a jointly agreeable time to do so. [steve.bannister@econ.utah.edu](mailto:steve.bannister@econ.utah.edu).

Note that having your preferred email is important to make communicating easy. I will ask you for that several times, including the first day of class.

## **Computer system requirements:**

You will need access to a computer to complete this class. Many of you have personal notebook computers which are fine. The software we will use runs under Linux, OSX, or Microsoft Windows.

If you have a personal computer, I encourage you to bring it to class so that you can follow along with the demonstrations as I lecture.

If you do not have a personal computer, the software is available on the computers in the CSBS computer labs, as well as at the Marriott Library.

## Assignments (How to Complete the Course):

The course will be structured around lectures and discussions on the reading, class demonstrations, a group project, and the midterm and final exams.

All materials including lecture notes will be posted on WebCT, directly accessible at Class WebCT page.

To perform well in the class and to become a statistical analyst, you should focus on the following course elements:

1. **Follow the Course Schedule:** It provides you with a guide to the order in which we will cover the course content. It is a guide, and will be modified based on actual class experience.
2. **Attend Lectures:**
  - Lectures are where the meat is put on the bones of the principles you will be learning from readings.
  - Lectures are a way of making the links from the principles concepts to the real world.
  - Lectures are where relevant current events are tied to the principles.
  - Lectures are where I demonstrate how to use the computer software; it is possible but certainly more difficult to acquire that skill on your own.
  - Lectures are where you can ask questions, debate relevant points, and enlarge your worldview.
  - People who regularly attend lectures do better in the class on the average. While I do not take attendance, trust me on this one. And they tend to enjoy the class much more.
3. **Textbook Reading:** You should read the textbook material that corresponds to the particular lesson to be covered.

Also, I will have notes, computer related files, and PowerPoints which can be very useful in reinforcing one's knowledge.
4. **Lecture Notes:** For the class lectures, I will work from lecture notes that will highlight the important concepts, make sense of them, and tie them to the real world. Also, I will work from computer files called "scripts" that instruct the computer how to analyse the problems.

I will publish the lecture notes and the computer related files, usually after the lecture as a practical matter.
5. **PowerPoint Presentation:** Each lesson will have a link to a publisher - provided PowerPoint presentation for the relevant Chapter in the text. Some students may find these useful in reviewing or synthesizing the Lesson material.
6. **Group Projects:** Participate actively in your group project, which I will discuss further during class.

**The Midterm and Final Exams:** You will take a midterm and a final exam. Both of these tests will be take home tests, which I will discuss more as we progress. By the very nature of the class, the Final will be comprehensive.

**Test Schedule (tentative):**

Exam	Week	Date	From Chapter	Thru Chapter
Midterm	8	Wednesday 3/2	1	7
Final	17	Tuesday 5/3	1	13 or 14

**Grade Policy:**

Grades will be based upon four components: Each component is weighted as follows:

Activity	Grade weighting
Homework Assignment	10%
Midterm Exam	25%
Group Project	25%
Final Exam	40%

Final grades will be based on 90, 80, 65, and 50 percent cuts.

**Disclaimers:**

*"The University of Utah seeks to provide equal access to its programs, services and activities for people with disabilities. If you will need accommodations in the class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Union Building, 581-5020 (V/TDD). CDS will work with you and the instructor to make arrangements for accommodations. [www.hr.utah.edu/oeo/ada/guide/faculty/](http://www.hr.utah.edu/oeo/ada/guide/faculty/)"*

It is your responsibility to maintain your computer and related equipment in order to participate in the online portion of the course. Equipment failures will not be an acceptable excuse for late or absent assignments.

Classroom equivalency: Discussion threads, e-mails, and chat rooms are all considered to be equivalent to classrooms, and student behavior within those environments shall conform to the Student Code.