

Dartmouth College
Department of Economics
Winter 2008

Economics 20– Econometrics

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Office Hours:
Mon 2.30-6.00

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Overview:

This course intends to expose you to the statistical techniques that economists use for estimating, testing, and forecasting economic relationships. The emphasis is on understanding the techniques involved and also on what they mean in terms of the economic problem being studied. Successful completion of this course should allow you to read much of the professional empirical literature in economics. There will be significant emphasis on the use of the statistical software STATA.

Pre-Requisites

This course assumes that you have a good grasp of the concepts covered in Economics 1, 10 and Math 3. For example, you should be familiar with the material in Appendices A, B, C in the Wooldridge text. If you are not comfortable with this material, you should make time out of class to review this material. **It is extremely unlikely that you will pass this course without knowledge of this material.**

Textbook: You should buy the following two books.

1. *Introductory Econometrics: A Modern Approach* by Jeffrey Wooldridge, published by SouthWestern Publishing (Available at the bookstore). **3rd edition.**
 2. *Getting Started with Stata for Windows/Macintosh Manual*, published by Stata Press (Available from Stata bookstore at <http://www.stata.com/bookstore/documentation.html>).
- Be sure you purchase the version for stata v8.0, and for mac or windows (whichever you use).
3. *Stock and Watson's textbook "Introduction to Econometrics"* is optional reading. We will NOT follow that book. But if you want to look at an alternative treatment, you are welcome to look there.

Requirements:

There will be two in-class midterm exams and a cumulative final exam. There will be a project to be turned in. You will form groups of no more than 5 people and each group will turn in one project. I will tell you more about the project as we go along. In addition, I will assign a few selected papers from economics journals which use the techniques we learn in class to some questions of economic and/or social importance.

These will be presented by you and discussed in class. Presentation plus discussions will last no longer than 20 minutes. These readings are primarily for you to see some applications of the techniques you are learning. Some exam questions might be based on the IDEAS in those papers- not necessarily on the details. So familiarity with the papers will help you think through those questions.

I will also hand out (**ungraded**) problem sets, which will serve as practice for the exams. Please do **not** turn them in. For the problem sets, I encourage that you work in small groups, so you may learn from each other.

All exams are open-book, open note.

Exams and project may not be postponed except in the case of a **documented** emergency.

Grading: Your total grade will be determined as follows :-

Mid-term 1	20%
Mid-term 2	20%
Project	20%
<u>Final exam</u>	<u>40%</u>
Total	100%

We will make heavy use of the Blackboard website. All lecture notes, readings and assignments will be posted there.

Special Needs: If you have a learning, physical or psychiatric disability which may warrant disability-related classroom accommodations, please speak with me during the first week of classes. The Academic Skills Center in 301 Collis Center will be asked to verify that you are registered for these services.

Lecture Schedule and Readings:

The schedule below indicates the topic to be covered in each lecture. While we will cover the topics in the order shown, I may not be able to cover everything planned and/or postpone things to the following class. All the readings may not be covered in class if we run out of time but most of them will be.

Date	Topic	Textbook Reading	Skip
1/7	Introduction	Chap.1 Lecture_notes: Intro.ppt	
1/9	Simple regression	Chap. 2 Lecture Notes: simplereg.pdf	
1/10 X-hour	Stata Intro		

1/11	Multiple regression	Chap. 3 LN: multreg3.ppt	
1/14	Inference	Chap. 4 LN: multreg4.ppt	
1/16	Inference	Chap 4	
1/18	Dummy variables	Chap. 7 LN: multreg5.ppt	
1/23	Dummy Variables	Chap 7	249-261
1/24 X-hour	Asymptotics	Chap. 5 LN: None	185-6, Lagrange Multiplier
1/25	Further issues	Chap. 6	195-6, 209-17
1/28	Mid-term 1		
1/30	Heteroskedasticity	Chapter 8, Lecture Note multerg6.ppt	276-282 (read White Test), 295-6.
2/1	Data Problems	Chap. 9 LN: multerg7.ppt	309-17, 325-333.
2/4	Limited dependent variables	Chap 17 LN: limdep.ppt	595-622, i.e. Sections 17.2-17.5
2/6	Limited dependent variables (contd)	Chap.17 LN: limdep.ppt	
2/7 X-hour	<i>*Reading: Madrian</i> Limited dependent variables (contd)	Chap. 17 LN: limdep.ppt	
2/11	Panel Data	Chapter 13, 14 LN : panel.ppt	
2/13	Panel Data (contd)	Chap. 13,14 LN : panel.ppt	
2/15	Panel data (contd), Mid-term review		
2/18	Mid-term 2 Start thinking about project		
2/20	IV and 2SLS	Ch 15, LN: iv.ppt	519-20, 535-40

2/22	IV and 2SLS	Ch 15 LN: iv.ppt	
2/25	<i>*Reading: Anderson</i>		
2/27	Simultaneous equations	Chap. 16 LN: simul.ppt	565-71
2/29	Project tips		
3/3	Time Series Project due by 12 noon	Chap.10,11 LN: time_series1.ppt	355-362, 400-403
3/5	Time Series	Chap 12 LN: time_series1.ppt	436-440
3/7	Time Series	Chap 18 LN: time_series2.ppt	633-38, 654-669