Syllabus
(version 1.0)

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Office Hours: R 3:30-5 pm and 8:40–9 pm and by appointment

Prerequisites:
The course will presume knowledge of E521 and E570.
(Generally speaking, knowledge of E570 is a more critical prerequisite than knowledge of E521, but both are useful. We will do only a quick review of basic econometrics.)

The course will focus on empirical analysis in microeconomics, with special emphasis on econometric techniques used in my research areas of interest, the economics of the family, earnings and time allocation.

Most of you are already familiar with Stata and will use that for exercises and for the paper in this course. If you are not already familiar with Stata you should acquire the book, *A Gentle Introduction to Stata* by Alan C. Acock, Stata Press.

Textbooks:
*Mostly Harmless Econometrics* by Joshua Angrist and Jörn-Steffen Pischke [required] [AP]
*An Introduction to Modern Econometrics Using Stata*, Christopher F. Baum [required] [CB]

Software: Stata version 12.0. (Stata version 12 loaded on the computers in STC labs on campus—upgrade to Stata 13.0 not planned for 2013-14).

Other textbooks you may wish to consult:

Greene, William H. *Econometric Analysis*, Fifth (or later) edition, Prentice-Hall. [doctoral econometrics level]


In the schedule below, LN refers to my lecture notes which are posted on Oncourse; you are expected to be familiar with these before the class meeting for which they are listed. [except for class no. 1]
Schedule:

R Aug 22  Introduction and Models of Time Allocation and the Family
(Becker, Gronau, Ashenfelter and Heckman) [LN1-3]
R Aug 29  Models of Family Time Allocation II: Bargaining Models of the Family
[LN3-4]

Instructor not available for consultation from Friday, Aug. 30 through Tuesday, Sep. 3

R Sep 05  Applied Reg 1 [LN4-5], [JW chs. 3-6]; [CB chs.1-2, 4]  AP Chs. 1-2 [PC];
Assignment 1 due: Thursday, Sep. 05

R Sep 12  Applied Reg 2 [LN5-6], [JW 8-9]; [CB ch. 5-6]  AP Ch. 3 (27-51) [CC];
Assignment 2 due: Thursday, Sep. 12

+ [LN5b]  {or SL 1-3}
R Sep 26  I.V., Endogeneity & 2SLS [LN6-7, 7b] [JW 15]; [CB Ch. 8]
SO Causal Article presentation; AP Ch 3 (51-77) [KS]
JE Causal Article presentation
Assignment 3 due: Thursday, Sep. 26

R Oct 03  I.V., Endogeneity & 2SLS [LN6-7, 7b] [JW 15] [CB Ch. 8]; Probit
& Logit [LN8] [CB ch. 10, 247-256]
CC Causal article presentation; AP Ch 4 (108-133) [SC]
Assignment 4 due: Thursday, Oct. 03

R Oct 10  Midterm Exam
[approx wts = 15% Family Econ; 25% Appl Reg; 60% IV/2SLS/LDV’s etc.]

R Oct 17  Probit and Logit [LN9] MLE [LN9]; [JW 17], [CB 10, 247-256];
SC Causal article presentation; AP Ch. 4 (133-140, 150-161) [JE]

R Oct 24  Tobit [LN 10, 10b]; [CB 10, 262-266]
KS Causal article presentation; AP Ch. 4 (161-181) [SO]

R Oct 31  Sample Selection Corrections (Heckit) [LN10d], [JW Ch. 17]
Censored & Truncated Regression Models [LN 10C]; [JW 17]; [CB 10, 266-275]
Section A [SC, CC, JE], Present topics and plan of attack for project [15
minutes]—Section B [SO,KS, PC] discussant [5 minutes]
Assignment 5 due: Thursday, Oct. 31

R Nov 07 Cross-sections over time: Pooling, FD, FE, RE [LN11, 11b] [JW 13, 14]; [CB 3, 45-46 and 55-56]
Fixed and Random Effects Models [LN12] [JW 14]; [CB 9, 219-231]
[Section B [SO, KS], Present topics and plan of attack for project [15 minutes]—
Section A [SS,CC] discussant [5 minutes]

Assignment 6 due: Thursday, Nov. 07

R Nov 14 Fixed and Random Effects Models [LN12] [JW 14]; [CB 9, 219-231]
Count Models [LN13, (SL ch.8)]
Section A (SS,CC,JE)—Interim Report; discussants--Section B (SO,KS, PC) [15 minutes each; A discussant [5 minutes each

R Nov 21 Count Models [LN13, SL ch.8] ; Duration Analysis [LN 14];
Assignment 7 due: Monday, Dec. 03
Section B (SO, KS)—Interim Report; discussants--Section A (SS,CC) [15 minutes each; A discussant [5 minutes each
R Nov 28 Thanksgiving Holiday—No Class

R Dec 05 Ordered Probit [LN 15], [SL 5];
Multinomial Logit, etc.[LN 15] [SL 6,7];
Alternative Methods-Experiments/Mechanism Design [LN 16]

Sections A and B-- Final Report on Project [10-15 minutes each]; no discussants
Written project turned in.

R Dec 12 FINAL EXAMINATION
Comprehensive but more weight on material since midterm exam.

Grading: Grading will be on the usual scale: A+ (97-100); A (92-96); A- (90-92); B+ (87-89) and so on. As with all graduate classes, any grade below a B is an indicator that the student did not demonstrate the minimum competency expected of graduate students. The weighting will be:

At least 5 in-term assignments @ 20 pts. each. These include problems from Wooldridge and computer exercises using Stata.
[Grade based on a random selection by instructor of about half of the problems assigned (when necessary).]

1 presentation of material in Mostly Harmless Econometrics [AP] (25 pts.)
Student presentation of material in AP should focus primarily on intuition rather than details of proofs...Make appt with me no later than the Friday before you are scheduled to present. [15 minutes to half hour]
1 presentation of an empirical article/causation? (25 pts.) Student presentation of an empirical paper they are interested in—must use some technique related to this course. Does the paper claim to have uncovered evidence of some causal relation? If so, how convincing is the argument for causality? (microeconometrics—IV, LDV, FE/RE panel, count data, duration data) [15 mins to half hour]

1 or more quizzes (20 pts. Each)

1 midterm exam worth 100 pts.

1 final examination that focuses primarily on econometric techniques and intuitive understanding, worth 150 pts.

1 empirical project worth 160 pts. (See below for more detail.) [100 points on what is turned in on the 5th of December; 20 pts each on 3 in-class presentations.]

EMPIRICAL PROJECT

The empirical project carried out over E581 and E582 will address:

Option A: One of the empirical issues identified in the discussion concerning empirical models in family economics. A series of regressions and diagnostics will be carried out, using Stata, on an appropriate data set. If you use one of the class data sets it is possible to get an acceptable grade but it is tough to get a top grade using just the class data sets and one of the standard questions.

Option B: A replication of (at least) a portion of the empirical work for some current/recent paper appearing in the Journal of Human Resources (or other journal) that is appropriate for the econometric focus of this course. You must, typically, obtain a copy of the data set from the author of the article. (The JHR typically requires authors to make their data sets available for three years after their article is published.) If choosing this option, you should scan the JHR [or other journal of interest] between now and next week and send a request for the data right away. (There may be unforeseen difficulties or delays.) If a standard downloadable data set is used in the article it may be feasible to replicate from scratch by downloading the data directly from a website.

Option C: [Preferred] This has been the typical choice in recent years. An original question of your choice that relates to family or labor economics or another area where microeconometric methods [Cross-section and Panel Data] are applied. In recent years, students have chosen family, health, education, charity, and business/personnel topics. [Early conversations with the instructor are strongly advisable. It is good to pick
something where you can download data from the PSID or COPPS or ATUS unless you have a data set of your own or for your work]

In E581 a limited literature search is conducted, that literature discussed in the context of proposed work, and the data are downloaded, cleaned and analyzed at the level of descriptive statistics and relevant correlations and cross tabs. In E582 the full regression analyses are conducted and the final project paper turned in. Anyone who does not anticipate taking E582 this spring (2014) should include in their E581 paper at least a short description of the intended regression analyses which would have completed the research project.

The paper, ordinarily about eight to ten pages of written material, in addition to relevant tables, will consist of a discussion of the empirical issues involved in the topic, and a detailed description of the various regression results, diagnostics and final results of your study.
(If you anticipate difficulty in finishing the project on time, please talk to me, in advance, about an extension.)

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Students *may* wish to take a look at the *JEP* spring 2010 issue for a symposium (often critical) on the 'credibility revolution.' The June 2010 issue of *JEL* also has an interesting article or two on a similar topic.

**Journal of Economic Perspectives**

**Vol. 24, No. 2, Spring 2010**

**The Credibility Revolution in Empirical Economics: How Better Research Design Is Taking the Con out of Econometrics** (pp. 3-30)

*Joshua D. Angrist and Jörn-Steffen Pischke*

Abstract/Tools | Full-Text Article (Complimentary) | Comments (0)

**Tantalus on the Road to Asymptopia** (pp. 31-46)

*Edward E. Leamer*

Abstract/Tools | Full-Text Article (Complimentary) | Comments (0)

**A Structural Perspective on the Experimentalist School** (pp. 47-58)

*Michael P. Keane*

Abstract/Tools | Full-Text Article (Complimentary) | Comments (0)

**But Economics Is Not an Experimental Science** (pp. 59-68)

*Christopher A. Sims*

Abstract/Tools | Full-Text Article (Complimentary) | Comments (0)
Regression Discontinuity Designs in Economics David S. Lee and Thomas Lemieux 281

Forum on the Estimation of Treatment Effects

Building Bridges between Structural and Program Evaluation Approaches to Evaluating Policy James J. Heckman 356


Instruments, Randomization, and Learning about Development Angus Deaton 424

Recent Developments in the Econometrics of Program Evaluation
Guido W. Imbens and Jeffrey M. Wooldridge