BASIC ECONOMETRICS
(Abridged version)

Class meets: TWTh 6:00-8:15PM at Braker Hall 118

Prerequisite: EC13 (Introductory Statistics) or equivalent

Course Requirements:

- Two Mid-Term-Hour-and-Five-Min. Exams (15% each) – TBD
- One Take-Home Final Exam (30%) – Handed out on TBD and handed in on TBD
- One Term Paper (20%, see guidelines in the last page) – Due on TBD; proposal due on TBD.
- Practice Problem Sets (15%): You may (or may not) work in teams of up to three and hand in one set per team.
- Class Participation and Attendance (5%)

{Exam, Term Paper and Problem Sets Policy: There are no make-up exams. Problem set is due one week(seven days) after it has been handed out; after the deadline, the problem set looses 20% of its value for each late day; problem sets handed in six or more days after the deadline have no value; all grades in this class are curved.}

Texts and Software:

Stock, James and Mark Watson (2011) Introduction to Econometrics, Third Edition. Addison-Wesley, Reading, MA. A new text that is simple and effective. It presents the main materials with a few data sets. We will follow the book closely and expand on the data sets and empirical exercises (Second Edition is acceptable as well).
Angrist, Joshua and Stephen Pischke (2015) Mastering Metrics. Princeton University Press, NJ. As the authors put it, this companion reading focuses on five valuable econometric methods: random assignment; regression, instrumental variables; regression discontinuity designs; and differences in differences. We will read it along the course.

STATA: The software used for this course. Stata is on many of the machines in the computer labs on campus or you may purchase a copy to install on your own machine if you wish. You can order a (student) copy of Stata at http://www.stata.com/order/new/edu/gradplans/gp3-order.html. The version you will need for this course is Small Stata, although the more powerful (i.e., more expensive) versions would work of course also. Note: A new version of STATA 14 is now available. There are several online tutorial/resources for STATA, please search online and I’ll provide additional links.

Required Readings: TBD

FYI, in the past I have also assigned:

Mayer-Schönberger, Viktor and Kenneth Cukier (2014) Big Data: A Revolution That Will Transform How We Live, Work, and Think. Houghton Mifflin Harcourt, NY, NY. A new era of data analytics and mining of very large datasets presents an important challenge to econometrics as a meaningful method of data analysis. This is an introduction to the topic and beyond.

Ayres, Ian (2007) Super Crunchers: Why Thinking-by-numbers is the New Way to Be Smart. Bantam Books, NY, NY. This is a book for a general audience that explains and discusses the works and ideas of Ian Ayres from Yale University. This could be an important source of inspiration for young economists and social scientists alike. Reading this book along this course is important for your understanding of the use and application of econometric tools to modern issues.

Levitt, Steven and Stephen J. Dubner (2005) Freakonomics: A Rogue Economist Explores the Hidden Side of Everything. William Morrow, NY. This is a widely publicized recent book that synthesizes and explain the works and ideas of Steven Levitt from the University of Chicago. This can be an important source of inspiration for economists and social scientists alike and may be construed as a modern version of Beckerian economics of everyday life.

Tufts Library Research Guide: EC15 Basic Econometrics TBA
COURSE DESCRIPTION

This course focuses on learning and practicing basic econometrics with emphasis on the practice and less emphasis on deep econometric theory. Econometrics is a subfield of the economics discipline that mixes together economic theory, statistics and mathematics. The main purposes of the course are to introduce econometric theory at a very basic level and to let you apply the methods with the use of real world data. The theory is going to follow the material in the textbook by Stock and Watson (2011). The objective of the course is for the student to learn how to conduct – and how to critique – empirical studies in economics and related fields. Accordingly, the emphasis of the course is on empirical applications. The mathematics of econometrics will be introduced only as needed and will not be a central focus.

The applied work will be performed using a software program called STATA available at labs. Data sets for the applications will be provided. If you want to do the work on your own PC, you can order the STATA Classroom version available at http://www.stata.com/ (not required).

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REVIEW AND BACKGROUND

A prerequisite for this class is EC13, Statistics, or equivalent. Some review will be provided in class, but your EC13, Statistics material with your textbook for that course is fundamental background material that will be recalled very often in this class. You should have your Statistics book available and use it as background if needed.

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COURSE OUTLINE (Tentative)
Textbook: Stock, James and Mark Watson (2011)

Introduction and Overview: The Rubin Causal Model
(Very) Brief Review of probability & statistics
Bivariate linear regression with Cross-Sectional Data
Multiple linear regression with Cross-Sectional Data
Regression Analysis of Time Series Data
Model Specification
The Linear Probability Model
Introduction to Regression with Panel Data
Introduction to Simultaneity and Instrumental Variables regression
Synthesis and Review

M. Bianconi, April 2018
BRIEF GUIDELINES FOR RESEARCH PAPER

The research paper is intended to make you put to work the tools learned in the course and in economics in general.

Your research paper typically consists of:

- **Introduction**: you may explain the problem you are examining your contribution relative to the basic reference. Then, you may present the basic results you obtain, without showing how you get the results.

- **Data and Descriptive Statistics**: You present and explain the basic data with summary and possibly correlations etc.

- **Discussion of Econometric Analysis and Results**: You present the economic theory and econometric model, discuss main results etc.

- **Conclusion**: Here you summarize your contribution and may give some directions for further research.

- **References**: This is the bibliography that you consulted and refer to in the paper.

- **Appendix**: Full STATA output etc.

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*M. Bianconi; April 2018*