University of Florida
Food and Resource Economics Department

AEB 6933 Labor Economics
Spring 2018

Tuesday 1:55 pm – 2:45 pm in CBD 0224
Thursday 1:55 pm – 3:50 pm in CBD 0230

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Office Hours:	Monday, Wednesday, Friday 3–4PM, or by appointment
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E-Learning: There is an e-learning webpage for this course. To access E-learning you need your Gatorlink username and password. The site can be accessed at http://lss.at.ufl.edu. Click the "e-learning in Canvas" button. If you have difficulty accessing the page, contact UF computing Help Desk at (352) 392-HELP. Note that E-learning page may not be working the first week of class. Grades will be posted under the 'Grades' tab and assignments will be posted under 'Assignments' on the home screen.

Course description: This course has two goals. The first goal of the course is to provide an overview of modern empirical tools for conducting research in development economics, labor economics, and related fields; these tools are sometimes referred to as "microeconometrics." The second goal of this course is to turn each of you into capable users of the statistical package Stata. If you do not own Stata you can run version 15 using UF Apps (http://info.apps.ufl.edu), or Stata/IC can be rented for 6 months by students from the Stata website (do not rent Small Stata). All assignments will be written so that they will run on version 13 of Stata or higher. **If you have an earlier version of Stata, it is your responsibility to ensure that you can adjust your code in order to complete all assignments.** You should have a laptop computer that you can bring to class with access to Stata.

Readings: We will make heavy use of two books. The first book we will use is "An Introduction to Stata Programming" by Christopher Baum (henceforth referred to as ISP). I have placed three copies of the book on reserve at Smathers Library. Paper or electronic versions of the book can be purchased from the Stata web site, as well as purchased or rented from Amazon. Please use the second edition of the book (the one with the blue cover).

The other main text used in the course is "Mostly Harmless Econometrics" by Josh Angrist and Jörn-Steffen Pischke (MHE). I have placed one copy of the book on reserve at Smathers Library. MHE will be our main reference for the methods we will learn in this class.

Lastly, each problem set will have one or more corresponding journal articles. We will begin each problem set with a "lab" session in class, and you will be expected to have read all assigned articles before starting each problem set.

Other helpful resources include:

- Imbens, Guido and Jeffrey Wooldridge. "What's New in Econometrics?" http://www.nber.org/minicourse3.html. This is a set of lecture notes, slides, and videos describing many of the methods covered in the class.
- Morgan, Stephen and Christopher Winship. *Counterfactuals and Causal Inference: Methods and Principles for Social Research*. New York: Cambridge University Press, 2007.
- Woolridge, Jeffrey. *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press, 2002.
- Cameron, A. Colin and Pravan Trivedi. *Microeconometrics: Methods and Applications*. New York: Cambridge University Press, 2005. There is a helpful webpage for the book: http://cameron.econ.ucdavis.edu/mmabook/mmaprograms.html.
- Cameron, A. Colin and Pravan Trivedi. *Microeconometrics Using Stata*. College Station, Texas: Statacorp, 2009.
- Statalist, an online bulletin board where you can ask other Stata users for help and find answers to questions not readily solved elsewhere: http://www.stata.com/statalist

Course structure: The course is organized into a series of modules covering different topics in applied econometrics.
    Week 1: Introduction to the Rubin Causal Model, causal diagrams, threats to causal inference
    Week 2: Randomized experiments
    Week 3: How to structure an empirical paper, with emphasis on the introduction
    Week 4: Randomized experiments with spillovers
    Week 5: Estimation of treatment effects using linear regression
    Week 6: Matching methods; matching versus regression
    Week 7: Robust inference with independent data
    Week 8: Robust inference with dependent data
    Week 9: Instrumental variables, part 1: the basics
    Week 10: Instrumental variables, part 2: local average treatment effects
    Week 11: Difference-in-differences and related methods
    Week 12: Difference-in-differences and related methods (continued)
    Week 13: Regression discontinuity designs
    Week 14: Adjusting for multiple hypothesis testing

On the course Canvas site, under the "Modules" tab, you will find lecture notes as well as required and recommended readings for each module. Required readings that are taken from MHE are not on Canvas.

Course requirements and points breakdown:
    ALL ASSIGNMENTS WILL BE AVAILABLE ON CANVAS. ALL DUE DATES WILL BE POSTED ON THE COURSE CALENDAR ON CANVAS.

    Problem sets: 140 points total (due before class on Thursday every week unless otherwise indicated)
    You will complete 12 problem sets, each of which is worth 10 points. Each problem set will consist of one or more of the following:
- Replicating all examples in one or two chapters of ISP. We will work through the first ten chapters in the book.
- "Stata lab" questions where apply concepts learned in class to data from published papers.
- Methodological questions related to the concepts covered in class.

Each week, you will turn in the following:
- A Stata .do file, log file (in .smcl, .txt, or .pdf format), and any other relevant output (e.g. tables or figures) showing your work from that week's ISP chapters.
- A Stata .do file, log file (in .smcl, .txt, or .pdf format), and any other relevant output (e.g. tables or figures) showing your work from that week's Stata lab problems.
- Typed or neatly handwritten responses to any methodological problems. You may type your answers in the Stata .do file containing your work for that week's Stata lab questions.

Empirical project: 60 points total (deadlines on February 6th, March 1st, March 29th, April 19th, and May 1st): Your second class requirement is an empirical project. Your empirical project can take one of two forms:
1. A replication and extension of an existing paper, chosen by you and approved by me.
2. Original empirical research, proposed by you and approved by me.

The requirements for the empirical project and what I expect to receive at each deadline are on Canvas.

Reading list
Use the following guide to determine how closely you should read anything from the list below:
* = Required, = No stars = Recommended (i.e. read for your own benefit)

1. Introduction to the Rubin Causal Model, causal diagrams, threats to causal inference
   a. *MHE Chapters 1 – 2
   b. *Elwert, F. 2013. "Graphical Causal Models." In Morgan, S. (ed.), *Handbook of Causal Analysis for Social Research*. New York: Springer Netherlands. http://link.springer.com/chapter/10.1007/978-94-007-6094-3_13.
2. Randomized experiments
   a. *Duflo, E., R. Glennerster, and M. Kremer. "Using Randomization in Development Economics Research: A Toolkit." Technical Working Paper 333. Cambridge, MA: National Bureau of Economic Research, 2006. http://www.nber.org/papers/t0333.
   b. Bloom, H. 1995. "Minimum Detectable Effects: A Simple Way to Report the Statistical Power of Experimental Designs." *Evaluation Review* 19(5): 547-556. http://erx.sagepub.com/cgi/content/abstract/19/5/547.
   c. Lin, W. 2013. "Agnostic Notes on Regression Adjustments to Experimental Data." *The Annals of Applied Statistics* 7(1): 295-318. http://www.stat.berkeley.edu/~winston/agnostic.pdf.
3. Randomized experiments with spillovers
   a. Crépon, B., E. Duflo, M. Gurgand, R. Rathelot, P. Zamora. 2013. "Do Labor Market Policies have Displacement Effects? Evidence from a Clustered Randomized Experiment." *Quarterly Journal of Economics* 128(2): 531-580. http://qje.oxfordjournals.org/content/128/2/531.full.pdf+html.
   b. Baird, S., A. Bohren, C. McIntosh, and B. Ozler. 2014. "Designing Experiments to Measure Spillover Effects." Penn Institute for Economic Research Working Paper 14-006. https://docs.google.com/file/d/17O7mmhAt2AiiIbhi_iahtopRuNuDGZ2QyKfMOMbn5TR6EcnZzRgZlR0oK3gJ/edit.
4. Estimation of treatment effects using linear regression
   a. *MHE Chapter 3 (through 3.3.1)
   b. Aronow, P. and C. Samii. 2016. "Does Regression Produce Representative Estimates of Causal Effects?" *American Journal of Political Science*, 60(1): 250-267. http://onlinelibrary.wiley.com/doi/10.1111/ajps.12185/full.

c.   Solon, G., S. Haider, and J. Wooldridge. 2015. "What Are We Weighting For?" *The Journal of Human Resources* 50(2): 301-316. http://jhr.uwpress.org/content/50/2/301.full.pdf.
d.   Belloni, A., V. Chernozhukov, and C. Hansen. 2014. "High-Dimensional Methods and Inference on Structural and Treatment Effects." *Journal of Economic Perspectives* 28(2): 29-50. https://www.aeaweb.org/articles?id=10.1257/jep.28.2.29.

5.   Matching
a.   *MHE Chapter 3 (3.3.2 through the end of chapter 3)
b.   *Imbens, G. 2015. "Matching Methods in Practice." *The Journal of Human Resources* 50(2): 373-419. http://jhr.uwpress.org/content/50/2/373.full.pdf+html.

6.   Robust inference with independent data
a.   *MHE Chapter 8
b.   MacKinnon, J. and H. White. 1985. "Some Heteroscedasticity-Consistent Covariance Matrix Estimators with Improved Finite Sample Properties." *Journal of Econometrics* 29(3): 305-325. http://www.sciencedirect.com/science/article/pii/0304407685901587.

7.   Robust inference with dependent data
a.   *Cameron, A. and D. Miller. "A Practitioner's Guide to Cluster-Robust Inference." *The Journal of Human Resources* 50(2): 317-372. http://jhr.uwpress.org/content/50/2/317.short.
b.   Abadie, A., S. Athey, S., G. Imbens, J. Wooldridge. 2017. "When Should You Adjust Standard Errors for Clustering?" Unpublished manuscript. http://www.nber.org/papers/w24003.

8.   Instrumental variables: the basics
a.   *MHE Chapter 4, Sections 4.1 – 4.2.2
b.   *Angrist, J. and A. Krueger. 1991. "Does Compulsory School Attendance Affect Schooling and Earnings?" *The Quarterly Journal of Economics* 106(4): 979-1014. http://www.jstor.org/stable/2937954.
c.   Bound, J., D. Jaeger, R. Baker. 1995. "Problems with Instrumental Variables Estimation When the Correlation between the Instruments and the Endogenous Explanatory Variable is Weak." *Journal of the American Statistical Association* 90(430): 443-450. http://www.jstor.org/stable/2291055?seq=1#page_scan_tab_contents.
d.   Stock, J. and M. Yogo. 2005. "Testing for Weak Instruments in Linear IV Regression." In *Identification and Inference for Econometric Models*. D. Andrews, ed. Cambridge University Press, New York. http://scholar.harvard.edu/stock/publications/testing-weak-instruments-linear-iv-regression.
e.   Wooldridge, J. 2015. "Control Function Methods in Applied Econometrics." *The Journal of Human Resources* 50(2): 420-445. http://jhr.uwpress.org/content/50/2/420.full.pdf+html.

9.   Instrumental variables: Local Average Treatment Effects (LATE)
a.   *MHE Chapter 4, Sections 4.4 – 4.6
b.   Heckman, J. and E. Vytlacil. "Econometric Evaluation of Social Programs Part II." Chapter 71 in Heckman, J. and E. Leamer (eds.) *Handbook of Econometrics*, vol 6B. Amsterdam: Elsevier B.V., 2007. http://www.sciencedirect.com/science/handbooks/15734412.

10. Difference-in-differences
a.   *MHE Chapter 5
b.   *Card, D. and A. Krueger. 1994. "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania." *American Economic Review* 84(4): 772-793. http://www.jstor.org/stable/2118030.

11. Difference-in-differences (continued)
    a. *Autor, D. 2003. "Outsourcing at Will: The Contribution of Unjust Dismissal Doctrine to the Growth of Employment Outsourcing." *Journal of Labor Economics* 21(1): 1-42. http://www.jstor.org/stable/10.1086/344122. You do not need to pay close attention to the theoretical section. Pay attention to the empirical methods.
12. Regression discontinuity designs
    a. *MHE Chapter 6
    b. Imbens, G. and T. Lemieux. 2008. "Regression Discontinuity Designs: A Guide to Practice." *Journal of Econometrics* 142(2): 615-635. http://www.sciencedirect.com/science/article/pii/S0304407607001091.
        i. This is from a special issue of the *Journal of Econometrics* on RDD, found at http://www.sciencedirect.com/science/journal/03044076/142/2.
13. Adjusting for multiple hypotheses
    a. *Anderson, M. 2008. "Multiple Inference and Gender Differences in the Effects of Early Intervention: A Reevaluation of the Abecedarian, Perry Preschool, and Early Training Projects." *Journal of the American Statistical Association* 103(484): 1481 – 1495. http://amstat.tandfonline.com/loi/uasa20.
    b. * (but you only need to skim it before lab) Blattman, C., E. Green, J. Jamison, M. Lehmann, and J. Annan. 2016. "The Returns to Microenterprise Support among the Ultrapoor: A Field Experiment in Postwar Uganda." *American Economic Journal: Applied Economics* 8(2): 35-64.

The grading scale is as follows:

Letter grade	Point range			Notes
A	186	to	200	For general information about grading and grading policy at the University of Florida, please refer to: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx#grades
A-	180	to	185	
B+	160	to	179	
B	140	to	159	
B-	100	to	139	
C	80	to	99	
E	0	to	79	

I reserve the right to revise this grading scale during the semester as necessary. Grading scale revisions can only positively affect your grade.

Miscellaneous:

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied:

"On my honor, I have neither given nor received unauthorized aid in doing this assignment."

The Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor in this class.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx.

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

University grading policy: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at: https://evaluations.ufl.edu

Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at:

https://evaluations.ufl.edu/results