

# ECO 7452: Best Empirical Practices

## Syllabus

**Instructor:** Gunnar Heins

**Email:** gheins@ufl.edu

**Office Hours:** Wednesdays, 2-4 in MAT 320

**Class Meeting Times:** Tuesdays & Thursdays, 3rd/4th period (9:35 - 11:30)

Course meets only from 2/27/17 to 4/21/17

**Room:** MAT 18

## Course Description

A large part of current economic research is at least partially empirical, i.e. it uses statistical and econometric tools to analyze data. This course is a practical introduction to empirical research in economics and beyond, based on the more theoretical concepts learned in ECO 7415 and ECO 7938. The goal is to understand the challenges that come with working with data, to learn tools and good practices to overcome them, and to critically think about the setup and results of current work. We will discuss research articles that have answered interesting questions in a particularly neat and creative way, and you will get a sense of the toolkit that is commonly used by applied economists. Finally, you will write a research proposal for an empirical project and present it towards the end of the course.

## Course Requirements, Homework, and Grading

The final grade will consist of 3 parts:

1. In-class participation and presentations (40 %)
2. 2 Homeworks (20 %)
3. Your research project (40 %)

There will be readings for each session (except the first one) and we'll discuss them during the first hour of each class. In most cases this will be an in-detail discussion of an assigned paper: For example about its assumptions, data, identification strategy, and results. For

each paper, one of you has to give a short (10 minutes) presentation summarizing the idea of the paper and its findings. I will assign these presentations by the end of the first week.

The second hour of each class will cover the tools used in the papers we cover in more depth. A particular focus will be on good empirical design, natural experiments and identification, instrumental variables, selection, and regression discontinuity designs. The homeworks will be mainly on the topics we cover in this part.

Finally, an important requirement of the course is to find an empirical research question and turn it into a small research project by the end of the course. This involves writing a 2-page research proposal justifying why this is an interesting and relevant question and how you are going to answer it (data, method). During weeks 6 and 7 you will give a short 15-20 minute presentation on your project and submit the final version (not longer than 7 pages).

Your project will realistically not be a done and polished paper by the end of the course. I rather want you to come up with an interesting question, hypothesis, or empirical relationship along with suggestive evidence that this could turn into a good paper. You can use e.g. summary statistics, graphs, or regressions to make that point and I will do my best to help you along the way.

## Textbooks and Readings

The readings are described below and are either available from the websites of the authors, from JSTOR (<https://www.jstor.org>), or the respective journal in which they have been published. You can get access either through a UF computer or log in using a VPN client (See <http://www.uflib.ufl.edu/login/vpn.html> for details).

There will also be readings from the book:

Joshua Angrist, Jörn-Steffen Pischke: "Mostly Harmless Econometrics"; Princeton University Press, 1st edition (2009), ISBN 0691120358.

## Prerequisites

I expect a basic knowledge of graduate level econometrics, for example from taking ECO 7415 or ECO 7938. The course will not be very technical or theoretical, but you should for example be familiar with the terms OLS regression, identification, or endogeneity. If you are not sure if this is the right course for you, please contact me before or during the first week.

# Tentative Course Schedule

## Week 1

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[Session 1 \(Feb 28\)](#): Introduction to Modern Empirical Research I

Topic: Course Introduction and good empirical design

[Session 2 \(Mar 2\)](#): Introduction to Modern Empirical Research II

Topic: Good empirical design

Reading: Mostly Harmless Econometrics (Chapters 1-2)

## Week 2

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[Session 3 \(Mar 14\)](#): Selection, Natural Experiments I

Reading: Sandra Black (1999), “Do Better Schools Matter? Parental Valuation of Elementary Education”; *Quarterly Journal of Economics* 114 (2), pp. 577-99.

[Session 4 \(Mar 16\)](#): Natural Experiments II

Reading: Jeffrey Milyo & Joel Waldfogel (1999): “The Effect of Price Advertising on Prices: Evidence in the Wake of 44 Liquormart”; *American Economic Review* 89 (5), pp. 1081-96.

## Week 3

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[Session 5 \(Mar 21\)](#): Instrumental Variables I

Reading: 1. Mostly Harmless Econometrics, Chapter 4, pp. 113 - 138

2. Acemoglu, Johnson, and Robinson (2001): “The Colonial Origins of Comparative Development: An empirical Investigation.”; *American Economic Review* 91, 1369 - 1401.

Homework 1 due

[Session 6 \(Mar 23\)](#): Instrumental Variables II

Reading: Autor, Dorn, and Hanson (2013): “The China Syndrome: Local Labor Market Effects of Import Competition in the United States”; *American Economic Review* 103 (6), pp. 2121–2168.

## Week 4

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[Session 7 \(Mar 28\)](#): Panel Data and Fixed Effects

Reading: 1. Mostly Harmless Econometrics, Chapter 5

2. Donohue, Levitt (2001): "The Impact of Legalized Abortion on Crime"; *Quarterly Journal of Economics* 116 (2), pp. 379-420.

[Session 8 \(Mar 30\)](#): Detecting flaws in empirical research: Questionable assumptions, design, and conclusions.

Reading: To be announced.

Research Idea due

## Week 5

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[Session 9 \(Apr 4\)](#): Regression Discontinuity

Reading: 1. Mostly Harmless Econometrics, Chapter 6

2. Chen, Ebenstein, Greenstone, Li (2013): "Evidence on the impact of sustained exposure to air pollution on Life Expectancy from China's Huai River policy."; *Proceedings of the National Academy of Sciences* 110(32), pp. 12936-12941.

[Session 10 \(Apr 6\)](#): Introduction to Machine Learning and Variable Selection

Reading: Burlig, Knittel, Rapson, Reguant, Wolfram (2016): "Learning from Schools about Energy Efficiency"; mimeo.

## Week 6

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[Session 11 \(Apr 11\)](#): Student Presentations

[Session 12 \(Apr 13\)](#): Student Presentations

Homework 2 due

## Week 7

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[Session 13 \(Apr 18\)](#): Student Presentations

Apr 21: Final Draft due