ECO3088: Empirical Methods in Applied Microeconomics
Fall 2021

Class Day/Time: Friday 9:00–noon
Course Website: HY-ON course community
Classroom: online Zoom sessions

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Course Description and Objectives:

This course is designed to help students learn how to apply econometric techniques to real-world policy-related questions. The course will focus on experimental and quasi-experimental research designs that can yield credible causal inferences from economic data. The applications will be primarily in labor, education, public, health, urban, and micro-development economics, while the material is also relevant for studies in corporate or real estate finance. Objectives are for students to develop the ability to evaluate modern research in applied microeconomics and to ultimately create a perspective of conducting their own research in these fields. In addition, students will become reasonably proficient in STATA, a leading statistical software used for empirical research in applied microeconomics.

Prerequisites:

Undergraduate level econometrics and microeconomics. These prerequisites are non-negotiable. You cannot take this course without them.

Textbooks:

1. (*) Joshua D. Angrist and Jörn-Steffen Pischke, *Mastering 'Metrics: The Path from Cause to Effect*, 1st Edition, Princeton University Press

2. (*) James H. Stock and Mark W. Watson, Chapters 8, 10, 12, and 13 in *Introduction to Econometrics*, 4th Edition, Pearson, Addison-Wesley
(Earlier editions of this textbook are acceptable. The updated 3rd edition is available in a PDF ebook format at https://lib.hanyang.ac.kr/#/search/detail/17632879.)

3. Scott Cunningham, *Causal Inference: The Mixtape*, 1st Edition, Yale University Press
(The free online version of this textbook is available at https://mixtape.scunning.com.)

Grading:

Attendance	5%
Problem Sets	20%
Research Proposal	25%
Final Exam	50%

Administrative Details:

1. This course will be offered online this semester because of the continued COVID-19 crisis. Online lectures will be delivered live following the regular class schedule. We will e-meet in the HY-ON course community (via zoom) at the scheduled time on Fridays. As active participation and lively discussion are crucial in this course, please turn on your camera during the lecture. If you cannot attend class, please inform the instructor or the TA as soon as possible. Points will be deducted from your total grade for each unexcused absence. Six or more unexcused absences will result in automatic failure for this course.

2. There will be four problem sets. Problem set questions will ask you to conduct empirical analysis using STATA. You may work with other students on the problem sets, but the answers you submit must represent your own understanding of the material. Direct copying is not permitted and will be treated as cheating. Late problem sets will not be accepted. The problem sets will help you prepare for the exams and learn how to conduct an empirical analysis. We will go over some of the problem set questions in class.

3. At the end of the semester, you will have an opportunity to present your own research in empirical applied microeconomics. A group of up to 2 students will collaborate on a research proposal throughout the semester and make a 15-minute presentation on Friday, December 3. The presentation slides are due on Thursday, December 2.

4. The cumulative final exam will take place on Friday, December 17, during the regular class hour. The final exam will be a closed-book exam. You will carry out an econometric analysis of problems using data supplied for that purpose (similar to the problem sets). A 2-page summary sheet will be allowed during the exam. If you have a well-documented emergency (e.g., serious illness with a doctor's note, family emergency) that you cannot make it to the scheduled time, please raise this with us as soon as possible. Otherwise, missing the final exam will result in automatic failure for the course. The date, location, and format of the exam are subject to change depending on how the COVID-19 pandemic evolves.

5. We will use STATA for empirical exercises in this course. You will need your own computer for STATA tutorials. While you are free to use other packages (e.g., R, Matlab, Python, Julia, SAS, Eviews), the instructor will not provide much help.

6. No cell phone usage in class; this includes texting.

Course Outline (subject to change):

1. 9/3: Course Introduction, Moving from Correlation to Causation, Potential Outcomes Framework
2. 9/10: Randomized Experiments
3. 9/17: Randomized Experiments, Regression
4. 9/24: Regression
5. 10/1: Regression, How to conduct empirical research
6. 10/8: Fixed Effects
7. 10/15: Fixed Effects
8. 10/22: Differences-in-Differences
9. 10/29: Differences-in-Differences
10. 11/5: Instrumental Variables
11. 11/12: Instrumental Variables
12. 11/19: Instrumental Variables
13. 11/26: Regression Discontinuity Designs
14. 12/3: Student presentations
15. 12/10: Q&A session
16. 12/17: Final Exam

Updated: September 3, 2021