PPHA 311: Statistics for Data Analysis II
Winter 2022

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Office Hours:

TBA

Head TA:

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Description: This course is an introduction to econometrics and is a continuation of the empirical methodology core sequence that is intended to follow PPHA 310. The course focuses on multivariate regression methods and their interpretation.

Lectures: Lectures will be live in person, two times per week. Virtual accommodations will be made available on an as needed basis.

Assignments and Grading: The final grade for the course will be a function of the midterm (30%), final (40%) and seven homework assignments (30%). The final will be cumulative. There will be seven homework assignments. You may work on the problems with others in the class, but you must turn in your own set of answers and indicate on the first page who you worked with. No late problem sets will be accepted. At the end of the quarter, the lowest problem set grade will be dropped.

You may **not** use any materials from prior years of this course.

Examinations: All exams will be held in the evenings CT. We will inform you of the dates and times as soon as possible, no later than the first week of the quarter.

Virtual exam accommodations will be offered with prior approval. All requests for virtual accommodations for the midterm or final exam should go through the Harris Student Affairs who will determine if the request is for an acceptable reason. Please email Dean Kate Biddle and cc your instructor.

There will be no make up exams offered. In the rare case of a documented emergency where a virtual accommodation is not feasible, we will reweight other components of your grade. If you miss an exam without a valid reason, you will almost certainly fail the course.

Re-grading policy: If you believe that your grade on an assignment or exam question is incorrect or unfair, please submit your concerns in writing to the head TA within a week of the assignment or exam being returned. Fully summarize what you believe the problems are and why. The head TA and the TA responsible for the relevant question will respond in writing. If you still have concerns, you may submit them in writing to the professor, who will issue a final grade.

Recommended Textbooks:

- *Mastering 'Metrics* by Joshua D. Angrist and Jorn-Steffen Pischke

- *Introductory Econometrics: A Modern Approach* (7th Ed.) by Jeffrey M. Wooldridge

Supplemental Textbooks:

- *Introduction to Econometrics* (4th Ed.) by James H. Stock and Mark W. Watson

Other course readings, made available via Canvas, will supplement the text.

Discussion board: Students should post clarifying questions about the material and homework assignments on the Piazza course discussion board available through Canvas integration. More substantial questions should be brought to office hours.

Stata and R Support:

Harris offers free tutoring support to students in need of one-on-one help with their core courses as well as coding in Stata, R, and Python. Tutoring opens on Monday of Week 3 each quarter and students can utilize up 10 hours total of tutoring per quarter. If you would like to learn more about the tutoring program or book an appointment visit the Harris Student Handbook tutoring page here.

Ethical Academic Conduct: The University's Academic Policies and Procedures and guidance regarding Civil Conduct apply to all activity in our course. If you need to review the University's policies, please see:

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https://studentmanual.uchicago.edu/Policies#Honesty
https://studentmanual.uchicago.edu/university
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By taking this course, you explicitly pledge your honor that you will not cheat (or help others to cheat) in any way on the assignments/exams.

We adhere to the official Harris School protocol for ethical violations:
Harris Procedures for Allegations of Plagiarism, Cheating, and Academic Dishonesty

First Violation

If a student is accused by an instructor or teaching assistant of plagiarism, cheating, or any other form of academic dishonesty, the student will be summoned to meet with the Dean of Students and the instructor. In the meeting, the student and instructor both present information about the situation. If it is determined by the instructor and the Dean of Students that the student has, in fact, plagiarized or cheated, the following sanctions will be imposed for the first violation:

- The student will generally receive a grade of 0 on the assignment or exam in question (subject to the discretion of the instructor). They may be penalized in other ways, up to and including failing the class.

- The student may be asked to re-do the assignment or retake the exam (without credit) to ensure that the student has learned how to properly cite sources or demonstrate that he or she has command of material covered.

- A formal letter of finding is sent to the student stating that the student has been found in violation of the code of academic honesty and what the sanctions were. The letter, along with any evidence presented, is archived in Harris Student Affairs records until the student graduates if the student has no other violations.

Second Violation

If a student who has already been found in violation academic dishonesty is again accused of academic dishonesty, the case will be sent to the Harris Area Disciplinary Committee. Details about the Area Disciplinary Committee procedures can be found in the University Student Manual (`https://studentmanual.uchicago.edu/area`). If the student is found in violation of academic honesty a second time, the Area Disciplinary Committee can assign sanctions including suspension or expulsion from the University.

To clarify ethical academic conduct within the boundaries of your homework assignments:

You may work on the homework assignments with others in the class. However, you must turn in your own set of answers and indicate on the first page who you worked with. Copying the homework of another student/ passing code from student to student is cheating. Providing another students with your assignment to copy is cheating.

Copyrights and Course Content (Use of Course Hero and similar websites): This course is a work of original authorship. All course materials (including, but not limited to, class lectures and discussions, handouts, examinations, study guides and web materials) and the intellectual content of the course itself are protected by United States Federal Copyright Law. Students are permitted to make notes solely for their own private educational use. Students and all other persons are expressly forbidden from recording lectures or discussions and from distributing or selling lectures notes and all other course materials without the prior written permission of the instructors. Because the instructors own the copyright to the classroom presentations and all course materials, any notes taken during those presentations and subsequently sold or distributed to others would constitute an unauthorized derivative work and expose the person or persons involved to individual copyright infringement actions by the instructors.

Course Calendar

The following calendar is meant as a **rough guide**. We will do our best to keep the homework, midterm and final dates unchanged. In terms of lecture material, this is the order of the material, but we expect some content to take longer than one lecture, so the dates may change. Additional readings will be posted on Canvas.

1. **Week of** January 3

    Topic: Course overview, causal inference & randomized trials

    Textbook: Angrist & Pischke Ch.1

2. **Week of** January 10

    Topic: Bivariate regression

    Textbook: Wooldridge Ch. 2.1-2.4 pp. 19-40

3. **Week of** January 17

    - Monday, January 17, Dr. Martin Luther King, Jr. Holiday (No Classes)

    Topic: Multivariate regression, part 1

    Textbook: Angrist & Pischke pp. 47-68

4. **Week of** January 24

    Topic: Multivariate regression, part 2

    Textbook: Angrist & Pischke Ch.2 pp. 69-97,
    Wooldridge Ch. 3.1-3.2, pp. 66-78, Ch 3.3 pp. 83-87

5. **Week of** January 31

    Topic: Problems in practice

    MIDTERM, TIME TBD

6. Week of February 7

    Topic: Functional form

    Textbook: Wooldridge Ch. 6.2, 186-195

    Topic: Binary dependent variables

    Textbook: Wooldridge Ch. 7.5, pp. 239-244; Ch. 17.1, pp. 560-571

7. Week of February 14

    Topic: Difference-in-differences (DD)

    Textbook: Angrist & Pischke Ch.5

8. Week of February 21

    Topic: Instrumental variables (IV)

    Textbook: Angrist & Pischke Ch.3; Wooldridge CH 15.1 pp. 495-503

9. Week of February 28

    Topic: Regression discontinuity (RD) methods

    Textbook: Angrist & Pischke Ch.4

X. Week of March 7

    FINAL EXAM, additional detail TBA