



PPHA 311: Statistics for Data Analysis II Winter 2023

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Section Times and Professor Office Hours: See Canvas

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Head Teaching TAs: Michael Mckelligott (mckelligott@uchicago.edu); Yashaswi Mohanty (yashaswi@uchicago.edu)

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: This course consists of live lectures of 1 hour and 20 minutes 2 times per week. All lectures will be in person. There is also a recitation section once per week with a Zoom option.

If a student requires remote accommodations, only Student Disability Services (**NOT** your instructor) can approve students to take their courses on a fully remote basis. Please contact Dean of Students Kate Biddle (kbiddle@uchicago.edu) for more information.

Assignments and Grading: The final grade for the course will be a function of five homework assignments (30%), the midterm (30%), and final (40%). The final will be cumulative. 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.

Late problem sets/requests for extensions No late problem sets will be accepted, but your final grade will be based on your four highest problem sets. The idea is this should cover most requests for extensions.

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

Examinations:

The exams will be held on the following dates and times:

Midterm exam: Thursday, February 2, in class

Final exam: TBD

As of now, we are planning for in-person exams at these times. 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 the administrative TA.

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.

Gradescope Submission of Problem Sets:

We will be using Gradescope to manage assignments and grading this quarter. You can find the Gradescope shortcut on the left side of your Canvas menu. You must submit a PDF version of your assignment at that link, and NOT under “Assignments” on Canvas. We will not consider submissions if they are not on Gradescope. In order to include your coding work in the PDF, you can use one of the three options listed below:

1. Save your .R file as a PDF and attach it to your homework PDF with the rest of your assignment
2. Take screenshots of your .R file and copy them into your homework PDF with the rest of your assignment. Make sure it's legible if you use this option.
3. If you are so inclined, use R Markdown to knit your code + rest of your assignment together into a PDF.

You must include the outputs of your code, such as any numbers, figures, tables, or graphs, within your homework assignment PDF. Any homework assignment without these outputs will receive zero credit on the coding portion.

Re-grading policy:

If you wish to submit a regrade request for an assignment, you must complete TWO steps within **one week** of the released grade. Regrade requests submitted later than one week or omitting one of the two steps will not be considered.

1. Submit a request for specific questions through the Gradescope regrade request system
2. Email the administrative TA with the questions you are requesting regrades for, and an explanation of why you believe a regrade is necessary for that question

Some guidelines: regrade requests should only be made for idiosyncratic grading errors made by the grader. If you have questions about the interpretation of a question or the solution, **DO NOT** submit a grade request in this case. Please bring your questions to office hours or post to the Piazza discussion board, and your instructor can provide guidance on whether you should submit a grade request.

If your regrade request is approved, your grade on Canvas will be changed to reflect the regrade. It may take up to a week for your grade change to be available on Canvas.

Piazza Course 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 to 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](#).

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.

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:

<https://studentmanual.uchicago.edu/Policies#Honesty>

<https://studentmanual.uchicago.edu/university>

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 2

Topic: Course overview, causal inference & randomized trials

Textbook: Angrist & Pischke Ch.1

2. Week of January 9

Topic: Bivariate regression, Part 1 and 2

Textbook: Wooldridge Ch.2

3. Week of January 16

Topic: Multivariate Regression, Part 1 and 2

Textbook: Wooldridge Ch. 3.1-3.3, pp. 66-83

4. Week of January 23

Topic: Multivariate regression, Part 3

Topic: Binary dependent variables

Textbook: Wooldridge Ch 3.3-3.4, pp. 79-95, Ch.4, pp.117-152

Angrist & Pischke Ch.2

Wooldridge Ch. 7.5, pp. 239-244

5. Week of January 30

Topic: Midterm review

Feb 2 MIDTERM (in class)

6. Week of February 6

Topic: Functional form

Topic: Problems in practice

Textbook: Wooldridge Ch. 6.2, 186-195; Ch. 7.1-7-4, pp.220-239; Ch. 9.4-9.5, pp. 308-321

7. Week of February 13

Topic: Difference-in-differences (DD)

Textbook: Angrist & Pischke Ch.5; Wooldridge Ch 13.2 pp.431-439.

8. Week of February 20

Topic: Instrumental variables (IV)

Textbook: Angrist & Pischke Ch.3; Wooldridge Ch 15.1 pp. 495-512

9. Week of February 27

Topic: Regression discontinuity (RD) methods

Topic: Final review

Textbook: Angrist & Pischke Ch.4

X. Week of March 6

FINAL EXAM. Date TBD.