

ECON 523: Program Evaluation for International Development

Center for Development Economics
Williams College
Spring 2025

1 Contact Information and Course Logistics

1.1 Instructor

Dr. Pamela Jakiela (email: pj5@williams.edu)

1.2 Teaching Assistant

Agustin Aliaga (email: aa22@williams.edu)

1.3 Course Meetings

Mondays, Wednesdays, and Fridays from 11:00 AM to 12:15 PM in CDE A211

- Monday: lecture
- Wednesday: Stata lab
- Friday: R/Python lab (except 2/21, 5/2, and 5/9)

1.4 Office Hours

- Professor Jakiela's drop-in office hours will be held on Fridays from 2:00 to 4:00 PM in 339 Schapiro. If you have a course that conflicts with my scheduled office hours, you can email me to set up an appointment for an alternative time. Please note that I am unable to meet in the evening or on weekends.
- Augie Aliaga will also hold TA office hours every week on Sundays from 7:00 to 9:00 PM at the CDE (room TBD).

1.5 Course Websites

<https://pjakiela.github.io/ECON523/>

Most course material is available on the public website for the course. Specifically, the github website will have lecture slides, empirical exercises, and links to selected video lectures (from Spring 2021, so they are a little out of date).

<https://www.gradescope.com/courses/977010>

All assignments will be submitted via gradescope. You'll receive an email inviting you to join the course, and that will allow you to set up a gradescope account linked to your Williams email address.

1.6 Communication

Email (pj5@williams.edu) is the only way to contact me. Under normal circumstances, I will try to respond to course-related emails within two working days of receipt.¹ I am sometimes overwhelmed by the volume of email I receive; if I have not responded to you within two working days, please feel free to send me an email reminder.

Our fantastic TA Augie Aliaga is also willing to answer Stata-related questions over email (aa22@williams.edu). He stays up later than I do, so he is better placed to answer questions that come up the night before an assignment is due.

2 What Is This Course About, and Who Should Take It?

2.1 Course Description

This course provides an overview of modern microeconomic methods for program evaluation and causal inference, with a focus on their application in international development. The course covers experimental and quasi-experimental approaches to impact evaluation, with a focus on practical applications.

2.2 Learning Objectives

1. By the end of the course, students will have an understanding of the main experimental and quasi-experimental approaches to impact evaluation. Students will be able to explain the econometric theory underlying each approach, including the identification assumptions required for valid causal inference.
2. Students will also feel comfortable implementing these approaches in the statistical computing tool of their choice (either Stata, R, or Python).
3. By the end of the course, students will have a conceptual understanding of the process of implementing an impact evaluation: how to identify a viable research question, what data would be required to answer it, and what steps would be involved in collecting and analyzing the relevant data.
4. By the end of the course, students will be confident cleaning and analyzing data using the statistical computing tool of their choice (either Stata, R, or Python).

2.3 Prerequisites

Students enrolled in ECON 523 should either have completed ECON 255, ECON 503, STAT 346, or both ECON 502 and ECON 53. Familiarity with Stata is assumed, as is an understanding of fundamental statistical concepts including expected values, hypothesis tests, and linear regression.

¹So, if you send me an email on Tuesday at noon, I will try to respond by the end of the day on Thursday. I do not check my email on weekends. If you send me an email on Friday afternoon, I will respond to it by the end of the day on Tuesday.

3 How This Course Works

ECON 523 is a hands-on, coding-intensive course. The core content is divided into 12 modules. Each module consists of readings, lectures/discussions, and empirical exercises in Stata/R/Python. You will also complete two empirical projects, two one-on-one coding skills assessments, and one (relatively low-stakes) final exam.

4 Readings

In the second half of the course, we will make use of the textbook *Running Randomized Evaluations: A Practical Guide* by Rachel Glennerster and Kudzai Takavarasha. All other readings are available on the course website.

5 Assignments and Grading

Grades are calculated as follows:

One-on-one coding assessments	30 points
Empirical exercises	25 points
Replication project	12 points
Pre-analysis plan project	12 points
Final exam	12 points
In-class worksheets	4 points
Class participation	4 points
Getting-to-know-you survey	1 point

5.1 Empirical Exercises

Each module includes an empirical exercise that we will begin during class. Empirical exercises can be completed in Stata, R, or Python. These assignments must be completed after class, and you must submit your completed assignment on gradescope. You are encouraged to work together on these activities, though your written work (including do files/R scripts/Python colabs) must be your own. Scores on the empirical exercises account for 25 percent of your final grade.

5.2 Replication Project

You will complete an empirical replication project due in March (before spring break). You will replicate and extend the main results from a program evaluation study that has been published in an academic journal. Your replication project counts for 12 percent of your final grade.

5.3 Pre-Analysis Plan Project

You will complete a pre-analysis plan for a randomized evaluation, due at the end of the semester. Your pre-analysis plan will be individual-specific, and focused on a development policy topic of your choice. Your pre-analysis plan counts for 12 percent of your final grade.

5.4 Final Exam

There will be a short, in-person final exam during the exam period. The final exam is closed-book, closed-notes, and does not require a calculator or computer. You must not work together or receive help from or provide help to any other student in answering the questions on the final exam. Your final exam score counts for 12 percent of your final grade. If you have a foreseeable conflict with any part of the scheduled final exam period, you must discuss this with me and receive my written approval before February 14 to continue in the course.

5.5 In-Class Worksheets

There will be two worksheets that each take a few minutes over the course of the semester. These worksheets are short. The worksheets are closed-book, closed-notes, and do not require a calculator or computer. You must not work together or receive help from or provide help to any other student in answering the questions on the worksheets.

Each worksheet counts for two percent of your final grade. The first worksheet takes place on the Monday, March 10, at the end of class. The second worksheet takes place on the Monday, April 28, at the end of class. If you have a foreseeable conflict with either of these days, you must discuss this with me and receive my written approval before February 14 to continue in the course.

5.6 Class Participation

Active, constructive participation in lectures counts toward your final grade. Students who attend class regularly, pay attention, and ask an occasional question should expect to receive 3 out of 4 possible class participation points. To earn the remaining points, you must make regular, correct, insightful contributions to class discussions.

I do not expect students to have perfect attendance: if you need to miss class once or twice during the semester, you do not need to seek approval from me in advance (though you are welcome to alert me if you wish). If you expect to miss more than two or three classes, or you encounter challenges that prevent you from attending class consistently, you should discuss these issues with me in office hours or over email. Regular absences will result in a loss of class participation credit unless they are discussed with and approved by me in a timely manner.

You should also come to class ready to work in Stata SE 18 (which is available for free from OIT), or RStudio or Python if you prefer. Bring your laptop to class, and either make sure that it is fully charged or bring your power cord with you.

5.7 Getting-to-Know-You Survey

A getting-to-know-you survey is available now, and counts for one point in your final grade.

5.8 Late Assignments

Unless otherwise stated, all (unexcused) late assignments will be penalized: the maximum grade will be lowered by 10 percent for every day late for the first five days (including weekends). All assignments submitted more than five days late will receive half credit (less any reductions for incorrect responses).

6 Schedule of Topics and Important Dates

The schedule below is approximate, and may be updated throughout the semester.

Dates	Description
2/7	Organizational Meeting
2/10, 2/12, 12/14	Module 1: Selection Bias and the Experimental Ideal
2/17, 2/19	Module 2: Regression Review
2/24, 2/26, 2/28	Module 3: 2×2 Difference-in-Differences
3/3, 3/5, 3/7	Module 4: Diff-in-Diff in a Regression Framework
3/10, 3/12, 3/14	Module 5: Two-Way Fixed Effects
3/17–3/21	<i>One-on-One Coding Assessments</i>
4/7, 4/9, 4/11	Module 6: Treatment-on-the-Treated
4/14, 4/16, 4/18	Module 7: Instrumental Variables
4/21, 4/23, 4/25	Module 8: Regression Discontinuity
4/28	Module 9: Random Assignment in Practice
4/30	Module 10: Power Calculations
5/5	Module 11: Clustering
5/7	Module 12: Machine Learning for Causal Inference
5/12–5/16	<i>One-on-One Coding Assessments</i>

7 Honor Code

You are free (indeed, you are encouraged) to discuss the empirical exercises with other students in the class, but you should always write up your own work (so the work you submit should never be identical to the work submitted by another student).

The replication project and the pre-analysis plan are independent assignments, so you should not collaborate with any other student on coding or writing, though you are free to discuss the assignment in general terms with your classmates.

You should not present work produced by individuals outside this class (for example, academic economists) as your own work under any circumstances. Any written work that you submit for any assignment must either be your own intellectual property or cited appropriately. If, at any point, you are unsure about how to appropriately cite others' work, please discuss this with me during office hours or over email.

Learning how to code involves a lot of googling, and it is increasingly possible to ask AI tools such as ChatGPT for assistance with coding. You are free to use these tools in this class and when completing assignments – but be aware that the code that they suggest is often incorrect. You are responsible for the work you submit.

8 Tutoring through the Peer Academic Support Network

As a Williams student, you can use the free tutoring services provided by the Peer Academic Support Network. Step-by-step instructions for finding and scheduling tutoring sessions are on the Peer Academic Support Network webpage: <https://www.williams.edu/peer-academic-support/>.

9 Health and Accessibility Resources

Students with disabilities or disabling conditions who experience barriers in this course are encouraged to contact me to discuss options for access and full course participation. The Office of Accessible Education is also available to facilitate the removal of barriers and to ensure access and reasonable accommodations. Students with documented disabilities or disabling conditions of any kind who may need accommodations for this course or who have questions about appropriate resources are encouraged to contact the Office of Accessible Education at oaestaff@williams.edu.

10 Classroom Culture

The Williams community embraces diversity of age, background, beliefs, ethnicity, gender, gender identity, gender expression, national origin, religious affiliation, sexual orientation, and other visible and non visible categories. I welcome all students in this course and expect that all students contribute to a respectful, welcoming and inclusive environment. If you have any concerns about classroom climate, please come to me to share your concern.

11 How Long Is This Syllabus? This One Goes to Eleven

Congratulations on making it to the end of the syllabus. Do professors enjoy writing syllabi? Not really. Do students enjoy reading them? Probably not. Hopefully, this document will provide us with a shared set of expectations for the semester, making the course more constructive and enjoyable for everyone. Also, if you send me an email containing a picture of an elephant before midnight on February 9 (subject line: ECON 523 ELEPHANT), you will earn a point of extra credit.