



**NYU**

**ROBERT F. WAGNER GRADUATE  
SCHOOL OF PUBLIC SERVICE**

# **PADM-GP 2875**

## **Estimating Impacts in Policy Research**

### **Spring 2024**

#### **Instructor Information**

- Renata Howland (Email: [reh6@nyu.edu](mailto:reh6@nyu.edu))
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- Office Hours: by appointment
  
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#### **Course Information**

- Class Meeting Times: Wednesdays, 1/24– 5/3, 4:55 PM - 6:35 PM
- Class Location: 60 Fifth Ave Room 110

#### **Course Prerequisites**

Prior coursework:

1. Statistical Data Analysis: Multiple Regression (PADM-GP 2902)
2. Program Analysis and Evaluation (PADM-GP 2171) **or** instructor's permission

Skill prerequisites. Stata is used in this course, and we will assume that you are familiar with basic data analysis using that package. If you are not, see the suggestions posted under the "Getting Started" section of our Classes site. We will also assume that you are capable with algebra at the pre-calculus level, are comfortable with algebraic notation, and understand the concept of a function.

## Course and Learning Objectives

This advanced course is offered for students who want to work as policy analysts in the not-for-profit or governmental sectors.

Your goals in this course should be to:

1. extend your familiarity with methodologic issues in policy research, including sampling, study designs, and analytic approaches.
2. get hands-on experience analyzing and presenting data, including managing datasets, selecting appropriate analyses, interpreting computer output, and presenting your findings in writing and tables.
3. improve your skills in reading, understanding, and reporting on journal articles. You'll learn to interpret tables and findings and weigh the strengths and weaknesses of research reports.
4. enrich your professional vocabulary, drawing from the language of program evaluation, econometrics and epidemiology.

In other words, you should aim to become more confident and competent with the skills that are required of junior policy analysts.

## Textbook

We will use **Angrist and Pischke's Mastering Metrics** (Princeton University Press, 2015); hereinafter, MM. Other course readings will be available electronically through the Bobst library, via our Brightspace site.

## Stata

You will need access to Stata during class time and outside of class. Some of our assignments use it, and we will have a couple "labs" during our weekly class using Stata. Information on buying/accessing Stata can be found on our Brightspace site.

## Class website

Our Brightspace site houses many files, including the syllabus, PowerPoints for each lecture, videos, assignments, datasets, article links and other core course documents. It will be used to broadcast urgent matters such as assignment changes or glitches and class cancellations.

## Class Policies

### Keeping up/missed classes

This course moves quickly. There is a lot of work— most students spend many hours each week on the course. There is a fair bit of informal in-class give-and-take. Students who miss a class should consult a partner student or attend office hours.

### Preparing for class

So that we can use class time efficiently, we will provide resources (articles, videos) for review before class. I'll also post pre-class non-graded assignments based on those resources. You should complete the assignments, save them as .pdfs and upload them in the Assignments tab of Brightspace at least ½ hour before class begins. In planning your submission, be mindful that Brightspace can be buggy. Assignments uploaded after that time will be accepted by Brightspace, but they will not count as completed. Please do not email late assignments – we can't accept them.

We assume that you will come prepared for class and ready to contribute to this advanced class. We sometimes cold call on students to encourage everyone to participate.

### Getting help with assignments out of class

Most of the class assignments use Stata, and students often have questions. If/when you do, you can ask me, either during office hours or via email. We're happy to take email questions at any time. We can respond efficiently if you ask your questions clearly, attaching as a Word, or .pdf the original assignment document plus any output, tables, etc. Please don't send .smcl files, or anything that we can't read on my phone. Again: please always attach the relevant assignment sheet, so that we have it on hand to see what you're working on – this saves going to the course website.

Other options for getting Stata help are:

- (a) through the consultants at NYU Quantitative Data Services at Bobst or
- (b) asking a fellow student.

You're welcome to work together on assignments, though each of you must do your own Stata runs (create your own code) and write your own papers.

### A note on journal articles

Articles used in the course are taken from journals representing an array of sectors and disciplines. There is great variation in emphasis, presentation, and statistical approaches. Some articles are dense and complex and may take hours to digest. You should keep at it, because reading journal articles is a skill that you can only learn by doing. I have tried to select papers that are accessible and not excessively technical. In some cases, these are oldies-but-goodies. Don't worry that the research findings may be obsolete. Your goal is to learn to read and think

critically.

During class, we will discuss some of the articles in depth. Other articles will only be mentioned in passing. For the final exam, you will be expected to understand the gist of all articles.

## Grading

Course grades will be based on:

1. Assignment 1: (15%) – Medicare costs and supplemental insurance
2. Assignment 2: (5%) – Estimating impacts with dichotomous data
3. Assignment 3: (15%) – High school mentoring program
4. Assignment 4: (15%) – Program to decrease school suspensions
5. Final Exam: (30%)
6. Class preparation and participation: (20%)

This includes your readiness with and completion of non-graded assignments

Graded assignments must be submitted on time (1/2 hour before the start of the relevant class). Again, make allowances for the bugginess of Brightspace. Late submissions can be uploaded to Brightspace but will be graded with a lateness penalty. Please do not email graded assignments to me. We cannot accept them.

We will follow the Wagner School policy on incomplete grades.

## Academic Integrity

Academic integrity is a vital component of Wagner and NYU. All students enrolled in this class are required to read and abide by [Wagner's Academic Code](#). All Wagner students have already read and signed the [Wagner Academic Oath](#). Plagiarism of any form will not be tolerated and students in this class are expected to report violations to me. If any student in this class is unsure about what is expected of you and how to abide by the academic code, you should consult with me.

## Course Overview

What follows is an outline of the topics that we'll be covering in each class, along with the dates for submitting assignments and taking the final exam. Information about class videos, readings and other resources are on Brightspace.

### Class 1: 1/24 - A framework for estimating impacts

- Goals of the course, course mechanics
- Impacts, outcomes and the counterfactual
- Review of estimation concepts with extension to the regression framework

### Class 2: 1/31 - Validity in social research

- What is validity?
- Internal validity, external validity, validity in measurement, conclusion validity (aka "statistical power")
- In-class exercise on statistical power

### Class 3: 2/7 - "Holding constant," "controlling for," "conditioning on observables"

- What does it mean to hold constant?
- Discussion of strategies beyond regression: matching, stratification, propensity scoring

### Class 4: 2/14 - In-class lab

- Preparation for Assignment 1

### Class 5: 2/21 - Dichotomous outcomes, non-linear functions & heterogeneous treatment effects.

- Clarifying "non-linearity"
- The linear probability, logit and probit models
- In-class exercises using the models; preparation for Assignment 2

### Class 6: 2/28 - Heterogeneous treatment effects, continued: coding using interaction terms

- In-class exercises with interactions: Preparation for Assignment 3

ASSIGNMENTS 1 & 2 DUE ½ HOUR BEFORE CLASS

## Class 7: 3/6 – Difference-in-differences

- Logic of D-in-D
- Assumptions, strengths, limitations of the D-in-D strategy
- In-class exercise with D-in-D

## Class 8: 3/13 –Panel data 1 (Theory)

- The logic of panel data analysis
- True panels versus pooled cross sections
- Two period panel data, multi-period panels
- Method of first differences
- Fixed effects estimation
- Assumptions, strengths, limitations of the panel data strategy

## Spring Break (3/20)

## Class 9: 3/27 – Panel data 2 (Practice)

- Review of characteristics of panel data
- Time fixed effects
- In-class lab with preparation for Assignment 4

## ASSIGNMENT 3 DUE ½ HOUR BEFORE CLASS

## Class 10: 4/3 – Regression Discontinuity (RD)

- The RD paradigm: examining the data, analyzing the data
- Assumptions and consequences of violations of the assumptions
- Interpretation of estimates
- Strengths and limitations of the RD strategy

## Class 11: 4/10 – Instrumental Variables

- The IV paradigm
- Assumptions and consequences of violations of assumptions
- Interpretation of estimates
- Strengths and limitations of the IV strategy

## Class 12: 4/17 - Randomized experiments

- Review of the logic of random assignment
- Residual threats to validity for experiments
- Applying the IV approach to get impact estimates beyond ITT

Class 13: 4/24 – Review

ASSIGNMENT 4 DUE ½ HR BEFORE CLASS

Class 14: 5/1 – Final Exam

## **Henry and Lucy Moses Center for Student Accessibility**

Academic accommodations are available for students with disabilities. Please visit the [Moses Center for Students with Disabilities \(CSD\) website](#) and click the “Get Started” button. You can also call or email CSD (212-998-4980 or [mosescsd@nyu.edu](mailto:mosescsd@nyu.edu)) for information. Students who are requesting academic accommodations are strongly advised to reach out to the Moses Center as early as possible in the semester for assistance.

## **NYU’s Calendar Policy on Religious Holidays**

[NYU’s Calendar Policy on Religious Holidays](#) states that members of any religious group may, without penalty, absent themselves from classes when required in compliance with their religious obligations. You must notify us in advance of religious holidays or observances that might coincide with exams, assignments, or class times to schedule mutually acceptable alternatives. Students may also contact [religiousaccommodations@nyu.edu](mailto:religiousaccommodations@nyu.edu) for assistance.