Estimating Impacts in Policy Research (PADM-GP 2875)  
** DRAFT **

This course covers selected analytic and design issues that are relevant to policy research and program evaluation. It applies and extends skills that are developed in other courses offered at the Wagner School. For example, the concepts of experimental and quasi-experimental design that are introduced in Program Evaluation and Analysis (P11.2171) are applied in understanding and critiquing research reports, and in analyzing data. Multivariate analytic skills introduced in Statistical Data Analysis: Multiple Regression (P11.2902) are extended to various types of research designs and analytic situations.

Your goals in this course should be to:

- extend your familiarity with methodologic issues in policy research, including study designs, analytic approaches, and ethical issues.
- enrich your professional vocabulary. Understand and learn to use terms from program evaluation, econometrics and epidemiology.
- get hands-on experience in analyzing and presenting data, including managing data, selecting appropriate analyses, interpreting computer output, and presenting your findings in writing and in tables.
- improve your skills in reading, understanding, and reporting on journal articles.

The course is not a comprehensive or exhaustive review of the field of policy-relevant research or program evaluation. It is not a statistics course, nor is it a course in how to evaluate a program. The focus is on impact analysis (rather than process evaluation, performance monitoring, cost effectiveness analysis, or evaluation synthesis, all of which are covered in other Wagner courses). There is a substantial amount of data analysis both in and out of class. There is also a significant amount of new statistical material presented. All of this is done using real world examples, to solidify the base as you build your career as a practitioner and consumer of the research that informs public policy.
Course prerequisites (neither may be taken concurrently)

1. Program Evaluation and Analysis (P11.2171)
2. Statistical Data Analysis: Multiple Regression (P11.2902)

Skill prerequisites. Stata is used in this course, and I will assume that you are familiar with basic data analysis using that package. In addition, I will assume that you are capable with algebra at the pre-calculus level, are comfortable with algebraic notation, and understand the concept of a function.

Required purchases. There is no textbook for this course. Most of the course readings are available electronically through the Bobst library. A few are hardcopies on reserve at Bobst.

To supplement the required readings, you may wish to look at online sources or textbooks. Suggestions listed on the BB, under “Course documents.”

You must have Stata installed on a laptop to bring to class. If you do not yet have STATA, consult the class BB before you rent/buy. You will need to bring your laptop computer to class on the evenings when we analyze data together.

Blackboard (BB). A number of resources have been posted on the course BB. These include the syllabus, scheduling information, datasets, assignments, videos, article links and other core course documents. Blackboard will be also be used to communicate urgent matters such as assignment changes or glitches, class cancellations, and changes in office hours. You should check the site frequently. By the Friday evening before each Thursday class, all materials will be posted on BB.

Keeping up/missed classes. This course moves quickly. There is a lot of work! While the reading is important, there is a fair bit of informal in-class give-and-take. An effort is made to capture class work in handouts, but this is not always feasible. Students who miss a class should consult a partner student for copies of notes and handouts.

Preparation for class. So that we can use class time efficiently, I post a number of resources and exercises for you to review before class. I will assume that you are prepared, and will collect some of the non-graded exercises (noting them as “complete” and “incomplete/missing”). For in-class discussions, I cold call on students, drawing on the non-graded assignments (as is done in law schools). Come to class prepared to contribute!

A note on journal articles. Articles used in the course are taken from journals representing an array of sectors and disciplines. You will find that there is great variation in emphasis, presentation, and statistical approaches across this array. Some articles are dense and complex, and may take hours for you to digest. Keep at it!
Reading journal articles is a skill that you can only learn by doing. I have tried to select articles 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 in this advanced masters-level course, you will be expected to know all of the assigned articles at the level of an 11-points outline\(^1\). You will also be expected to have an understanding of the basic tables. To avoid being overwhelmed at final exam time, I suggest that you keep a running file of every journal article that you read, with a sentence or two for each of the 11 points.

**Getting help with assignments.** Most of the class assignments are use Stata, and students often have questions. If/when you do, you can (a) ask me during office hours or via email. I’m happy to take email questions at any time, and can respond efficiently if you ask your questions clearly, attaching as either a Word, .txt or .pdf any output, tables, etc. Please don’t send .smcl files. Also please attach the relevant assignment sheet, so that I have it on hand to see what you’re working on; (b) get help from the consultants at NYU ITS Data Service Studio (DSS) at Bobst (see website for details); (c) ask a fellow student. You’re welcome to work together on assignments, though each of you must do your own Stata runs, and write your own papers.

**Course grades will be based upon:**

1. Assignment 1 (15%) Supplemental insurance and Medicare expenditures
2. Assignment 2 (5%) Estimates of effect with dichotomous data
3. Assignment 3 (15%) Impact of a mentoring program in New York City
4. Assignment 4 (15%) Enterprise zones and employment rates
5. Assignment 5 (10%) TBA
6. Final Examination (25% of grade)
7. Class preparation and participation (15% of grade)
   ➢ This includes your readiness with non-graded assignments, some of which will be collected.

The Wagner School grading policy will be applied in awarding grades (see BB for details).

The Wagner School Honor Code will be enforced. If you are unclear as to how the code applies to collaboration on assignments, or to any part of the course, please ask.

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\(^1\) You may bring a one-sided handwritten 8.5 x 11 inch “cheat sheet” to the final exam.
TOPICS


To prepare:
- Take a 2 or 3 hours to review your class notes and textbooks from Stat 1, Stat 2, and Program Analysis and. Evaluation. Pay attention to these terms: statistic, parameter, sample, population, estimation, confidence interval (aka “interval estimate”), sampling distribution, standard deviation, standard error (in general; specifically as it applies to means and differences of means), hypothesis test, p-value, OLS regression assumptions, coefficient, unbiased-ness, efficiency, “controlling for,” “holding constant,” impact, counterfactual.
- Review the 11 points document (posted under “Course documents” on BB).


To prepare:
- Take time to review basic study designs and threats to validity from Program Analysis and Evaluation. Pay special attention to internal validity, threats to internal validity (but not in great detail), external validity.
- Watch the course video on statistical power (link posted on BB)
- Skim Littwin MS. Chapter 2 “Reliability” and Chapter 3 “Validity” in How to Interpret Survey Psychometrics, 2nd edition. Sage Publications (note that you may have read this previously in Program Analysis and Evaluation).
- Complete The non-graded assignment (posted on Blackboard).

Week 3. September 20. In-class lab Preparation for Assignment 1

To prepare:
- Review bivariate statistics from Stat 1, perhaps by reading chapters 5 and 6 in the Wagner Way (posted under “Course documents”).
- Watch three course videos: these will acquaint you with some Stata maneuvers, and introduce you to bivariate analysis with Stata; see links posted on BB.
• Complete
  The non-graded assignment that goes with the videos; bring hardcopy to class.
• Bring your laptop to class.

**Week 4. September 27. Cross sectional data.** Logic of cross sectional designs. Thinking further about what it means to adjust for or hold constant. Further understanding of these terms: omitted variables bias, selection bias, endogeneity. General strategies and methods to minimize bias. Discussion of journal article.

To prepare:
• Review material on omitted variable bias from your Stat 2 text.
• Complete an “11-points” discussion of the Devaney et al. article
• Work on Assignment 1, with the goal of completing your data analysis this week.


To prepare:
• Complete these non-graded assignments – make sure that your math skills are up to par by completing these class Blackboard postings. **If you don’t get this, you won’t get what follows**
  • “Review of percent change and percentage point change”
  • “Review of logarithms” – note that you should perform a calculator check; bring your calculator to class.
• Read
  *Stock JH, Watson MW. Introduction to Econometrics, Second edition, Chapter 11, “Regression with a binary dependent variable”* (on reserve @ Bobst), and.
• Non-graded assignment: Prepare an 11-points discussion of the Munnell article.

**ASSIGNMENT 1 due**

To prepare:
- Re-read Stock and Watson’s Chapter 11 from last week, and review your class notes
- Complete the first non-graded assignment that is posted on Blackboard (“Probit practice”).
- Complete the second non-graded assignment that is posted on Blackboard (“Fourfold table”), and work the problems on pages 3 & 4.
- Read:
- Complete a third non-graded assignment, on Semba and Wen.
- Download and preview Assignment 2, and bring questions to class.

Week 7. October 18. Finishing up dichotomous outcomes and non-linearity; Interaction as another form of non-linearity. Subgroup analysis, heterogeneity of treatment effects. In-class exercises with interactions; preparation for Assignment 3.

To prepare:
- Watch three course videos on interactions (URLs on course BB). Bring your questions to class.
- Read
  Cropsey KL, Weaver MF, Eldridge GD et al. Differential success rates in racial groups: Results of a clinical trial of smoking cessation among female prisoners. Nicotine and Tobacco Research. 2009. 11(6):690-697. Note that the course BB includes some info/guidance on approaching this paper
- Download and read Assignment 3, and bring it to class, along with your laptop + the dataset.

ASSIGNMENT 2 due

To prepare:
- Read
  
  *Albouy D. Program evaluation and the difference in difference estimator. Handout posted on our BB.*
  
  *Newcomb, TM. Conservation program evaluations: The control of self selection bias. Evaluation Review. 1984; 8(3): 425–440.* This is a re-read, posted under Week 1.
  
  *Kenney GM, Long SK, Luque A. Health reform in Massachusetts cut the uninsurance rate among children in half (main paper + appendix; both posted on BB). Health Affairs. 2010;29(6):1242-1247 + appendix pp.1-5. Use the appendix to make sure that you understand D-in-D notation.*
  
  

- Complete
  
  An 11 points discussion of the Torche paper, and the non-graded assignment on BB.


To prepare:
- Read
  
  *Stock JH, Watson MW. Introduction to Econometrics, Second edition, Chapter 10 (“Regression with panel data”); on reserve in Bobst, and*
  
  
  
  *One other reading, TBA.*

- Complete
  
  Non-graded assignment, posted on BB.

**ASSIGNMENT 3 due**

To prepare:
• Reread from last week:

  Chapter 10 of S & W, (“Regression with Panel Data”).

• Download and read Assignment 4 before coming to class.
• Bring your laptop to class.

Week 11. November 15. The Regression Discontinuity (RD) and Instrumental Variables (IV) approaches. The paradigm for classic RD: examining the data, analyzing the data. IV as “fuzzy” RD. Assumptions of instrumental variables analyses.

To prepare
• Read:

  Trochim, W. “The regression discontinuity design” followed by “Regression discontinuity analysis” in the Research Methods Knowledge Base (URL on course website), then


• Complete:

  Worksheet on Niu and Tienda article.

Thanksgiving (November 22)


To prepare:
• Readings and non-graded assignment TBA


To prepare, download “Non-graded assignment sheet for ethics section on the class BB”. Then, read:


Johns Hopkins University, “Lead based paint study”. A fact sheet posted by the university on the School of Medicine website. Our BB includes the link to lots of other material that Hopkins has made available.


Then, complete the non-graded assignment sheet “Non graded assignment for ethics session.”

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Our final exam will be on Thursday December 20th during the regular class time.

Assignment 4 should submitted no later than 6 PM on Friday December 21, as hardcopy to Prof. Blustein’s box at Puck.