New York University  
Robert F. Wagner Graduate School of Public Service

**GP 5902**  
**Doctoral Research Methods**  
Autumn 2013  
Wednesdays 10:00 am – 11:40 am  
Waverly 366

**Professor Rajeev Dehejia**  
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**Office Hours**  
Tuesday, 3.30 – 4.30 pm, by appointment  
Sign up here: http://goo.gl/TnJEM

**Course Description and Objectives**
This course offers an introduction and overview to empirical research methods. Research methods refer to the set of tools that a researcher uses to design and execute a study to answer a research question. There are two overarching goals of the course. First, to develop the ability critically to assess the strengths and weaknesses of the research design used in a given paper. Second, given a research question, to be able to: formulate testable hypotheses, and think through a research design and the essential features of its execution, ranging from experimental design, to survey methods, to data analysis. As an introductory course, we will survey the range of processes that go into a research project. As your own doctoral research proceeds, you will certainly find it necessary to delve more deeply into whichever methods are most relevant for your work.

**Course Structure**
The class includes lectures, readings, discussion, and a class presentation. You are strongly encouraged to relate the general material of the course to your specific research interests throughout the course and especially in the written assignments and final paper, where you are asked to propose a research design on a question of your choosing. Class participation is critical as class discussion and input are an essential aspect of this course and the learning process associated with it.

**Readings**
The required textbook for this course is:


This is a classic reference in evaluation research. As we will discuss, while not all research projects are program evaluations in the classic sense, the evaluation paradigm has become one of the key frameworks for research design.

Supplemental books for this course include:


In addition to the main textbook, there are additional readings and web material that you are required to read and complete. These are listed in the syllabus and are usually available on our course web directory. Students should read the required readings in detail, and are encouraged to prioritize, scan, and digest all the readings.

Course Requirements
Class participation: 10%.
Four written assignments: 3.5% each for a total of 15%.
Mid-term exam: 35%.
An in-class presentation: 10%.
An individually written research design paper: 30%.

Writing Assignments – Preliminary Steps in Writing the Final Design Paper
Short thought pieces in which you are asked to apply the course readings to the development of your research design paper. These assignments serve not only to encourage you to think about your final presentation and paper throughout the course, but to struggle with real-world applications of what you are learning in the readings and lectures. Assignments should be informed by the readings for that day or from the previous week. In other words, read everything first, then work on the assignment.

Writing assignment 1 – Describe the research question (Due Sept 17): Describe a theory that interests you, and some testable (ideally open) hypotheses. One good way to do this, but not the only choice, is to draw a logic model representing the theory and/or describe/depict the causal model for hypothesis testing. [1 page, single-spaced]

Writing assignment 2 – Design your rest (Due Oct 1): Using your selected research question describe an experimental research design that you think could be used to test your research question. Describe the goal of each approach and then discuss the merits of the design you have proposed for achieving that goal. Identify and describe three plausible threats to internal validity and then discuss the degree to which each design controls for or deals with each of these threats. [1 page, single-spaced]

Writing assignment 3 – Measuring variables (Due Nov 26): For the research question you have selected and the design you developed in assignment 2 (or if you’ve come up with an even better research design since then, use that design), identify appropriate data sets or data collections strategies, describe the sampling procedures used or that you would use, and describe the measures you would use or assess the measures available within the data set. Refer to empirical articles for guidance on the format and how much detail to provide. [1 page, single-spaced]

Writing assignment 4 – Full research design (Due Dec 3): This writing assignment is essentially a summary of the three previous assignments. You should provide a one-page outline of your entire research design proposal. This final version allows you to improve upon your earlier attempts (as demonstrated in the first three assignments). Describe the theory underlying the program, the research questions and hypothesis, the program or context of your research, the research design, the outcome and input measures, data collection, sampling procedures, and finally what the results from this research project will tell us about the underlying theory. You
will be presenting this proposal and therefore should be prepared to defend your ideas.  **[1 page, bulleted and/or outline format]**

### Exercises

Three individual assignments in which you are asked to commit writing to paper both to make you think and to help you identify what you’re struggling with. Each is required but is not submitted and not graded. They will aid your individual thinking.

**Exercise 1 – Find a theory that interests you - (Sept 3-10):** Simply start thinking out loud (and eventually on paper) about what kinds of questions interest you, and thinking about what theories are out there and what the open questions are.

**Exercise 2 – Literature Review - (Due Oct 22):** Find (using electronic database searching strategies) at least six empirical articles that are relevant to your evaluation and summarize the overall “state of the art” based on those articles – what do we know about this topic?

**Exercise 3 – Critique a Prior Study -- (Due Nov 12):** Fully critique one of the empirical articles you found in your literature review.

### Midterm Examination (Nov 5)

The midterm exam is take home, ideally to be completed the night of November 5th. I will email you and post the exam questions by 3 p.m. on the 5th and you have until 5 p.m. the next day (Thursday, November 6th) to take the examination and submit your responses back to me (hard copy to be turned in at the Puck Building – electronic copies won't be accepted). That gives you a day but you shouldn’t need more than 2 hours or so to actually write the exam and an hour or so for thinking about the exam prior to writing.

### Final Presentation and Paper: Research Design (Dec 10)

This is the culmination of the course and the opportunity for you to learn the most about research design. The presentation and paper build on the four writing assignments as well as any feedback you may have received from me and/or from your fellow students during the last class. You must select a research question and then design a comprehensive research plan. You are strongly encouraged to consult with me about this. Good research designs are seldom developed in isolation – feedback from others always helps make a good evaluation even better. This is a challenging assignment and you should be thinking about and working on this throughout the course. You will present the research design in class. After receiving feedback, you will write up the design into a paper. There is a 10 page maximum for the paper (with 12 point font and one inch margins). **The final paper is due Monday 16 December. Late papers will not be accepted.**

### Class Participation

Students are encouraged to actively engage with the course materials. To that end, students should read the required class materials in advance of every class, skim supplemental material where possible or when interested, and be prepared to discuss them. Every class will include opportunities for class discussion and students are strongly encouraged to ask and answer questions. Students are invaluable resources for each other and provide insights that go far beyond what this one professor can provide. Students will be graded on their participation; this reflects not just the frequency of class contributions, but also their quality, relevance, precision, and originality. If I haven't heard your thoughts in class for a while, I may call on you.
One specific assignment that is graded through class participation requires students to give a two minute presentation on a current research project that they have read about (either the paper must be dated from 2013 or must have been written about in a newspaper or journal in 2013). Describe the underlying theory and question, how it was tested, conclusions, any weaknesses you can spot. This is a lot in two minutes so be prepared and be concise. Students will be assigned at random on the first class.

**Expectations**

**Preparation before class:** come prepared for each class having read the assigned material carefully.

**Absence, punctuality, and in-class conduct:** You are expected to attend all classes, and arrive on time. Systematic tardiness, disruptive behavior (including side conversations and use of your cell phone) will negatively impact your class participation grade. If you miss a class due to unavoidable circumstances, please contact another member of the class and ask him or her about what was covered in class.

Laptops and other technologies: To make the classroom environment as engaging as possible for everyone, I ask that you use laptops and tablet computers only for note taking. Please refrain from using these devices and cell phones for texting, web browsing, and social media. These are distracting not only for your fellow students and me, but also you! I will post my slides the evening before each class, allowing you to focus on and participate in the class discussion.

**Lecture topics and readings**

- Required reading.
- Supplemental reading (scan, read more deeply if interested).
  - Extra reading (strictly if you are interested).

**Meeting 1: Sept 3**

**Topic:** Introduction to the Course, Introduction to Causality

**Assignment due:** None.

**Readings:**

- Rossi, Chapter 1.

**Meeting 2: Sept 10**

**Topic:**

- From Theory to Hypothesis Testing
- Understanding the Program: Program Theory, Theory of Change, Logic Models

**Assignment due:** Exercise 1: Describe a (some) program(s) you might want to evaluate.

**Readings:**

- Rossi, Chapters 4 and 5.
• CDC, pp. 21-36.
  o Bamberger, Chapter 1 (pp. 17-34), Chapter 2 (pp. 35-50), and Chapter 16, pp 373-379.
  o Kellogg Foundation Logic Model Development Guide

Meeting 3: Sept 17
Topic: Introduction to Randomized Trials
Assignment due: Writing assignment 1.
Readings:
  ❖ Rossi, Chapters 7 (pp. 204-213) and Chapter 8.
    o Cox, The Planning of Experiments, selected chapters (currently unavailable online; check the library if you are interested in this topic).

Meeting 4: Sept 24
Topic: Randomized Trials, Advanced Issues
Assignment due: None.
Readings:

Meeting 5: Oct 1
Topic: Instrumental Variables, An Introduction
Assignment due: Writing assignment 2.
Readings:

Meeting 6: Oct 8
Topic: Regression Discontinuity, Introduction
Assignment due: None.
Readings:
  manuscript, Department of Statistics, University of Pennsylvania.
  o Lee, David, and Thomas Lemieux, “Regression Discontinuity Designs in Economics,” Journal of
    Economic Literature, Volume 48 (June 2010).

Meeting 7: Oct 22
Topic: Introduction to Matching
Assignment due: None.
Readings:
  ❖ Rossi, Chapter 9.
    Forward,” manuscript, Department of Biostatistics, Johns Hopkins University
    Matching Estimators for Average Treatment Effects in Stata,” The Stata Journal, Volume 1,
    Number 1, pp. 1-18.

Meeting 8: Oct 29
Assignment due: None.
Topic: Difference-in-Differences
Readings:
  ❖ Rossi, Chapter 9.
    Duration: Evidence from a Natural Experiment,” American Economic Review, Volume 85,
    Number3, pp. 322-340.

Meeting 9: November 5
Topic: No lecture.
Assignment: Mid-term exam.
Readings: None.

Meeting 10: Nov 12
Topic: External Validity
Measurement
  • Reliability
  • Construct Validity
  • Types of Variables
  • Indicators
Assignment due: none.
Readings:
  ❖ Rossi, Chapter 7 (pp. 213-232).
  • Bamberger, Chapter 5 (pp. 88-111) and Chapter 11 (pp. 240-262).
    o Preparing to Collect Data.
    o National Quality Center, Quality Academy Measurement and Data Tutorials (Tutorials 7, 8, 9)
Meeting 11: Nov 19

Topic: Data Collection, Sampling and Power (Effect Size and Sample Size), Overview of Data Analysis.
Assignment due: Assignment #3: Outline possible measures, data collection, and sample (sampling) for your Evaluation

Readings:
- Rossi, Chapter 10.
- Bamberger: Chapter 14 (pp. 323-354).
- Taylor-Powell, Ellen, Program Development and Evaluation Sampling Guide

Meeting November 26: No lecture – Thanksgiving.
Assignment due: Writing assignment 3.

Meeting 12: Dec 3
Topic: Qualitative Methods.
Assignment due: Writing assignment 4.
Readings: guest lecture.

Meeting 13: Dec 10
Topic: Final Design Presentations.
Assignment due: Final design.
Readings: none.