Course Description and Objectives
This course offers an introduction and overview to quantitative 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.

A companion course, Advanced Empirical Methods, delves more deeply into applying quantitative methods to analyze data.

Course Structure
The class includes lectures, readings, discussion, and in-class presentations. 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 design an empirical research project.

Readings
The required textbook for this course is:

7th ed. Sage Publications. [ROSSI]

This is a classic textbook. One advantage over Bamberger is that each chapter is more closely linked to a single topic, which in turn relate quite closely to our lectures.

A supplemental textbook for this course is:


This textbook is very practical in nature and can be read on multiple levels – read the introduction to get a sense of how the book was designed and organized. There are a number of empirical cases integrated into its chapters.
An optional textbook is:
Also a classic reference.

In addition to the main textbook, there are additional readings and web material that you are required to read. 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 the other readings.

Course Requirements
Class discussion presentations, 20%.
Three writing exercises, ungraded.
Four written assignments, 3.5% each for a total of 15%.
An in-class research proposal presentation 15%.
A written research design proposal based on the assignments and presentation, 25%.
Take-home midterm, 25%.

Due Dates and Late Policy
All assignments are due by 1 pm on the dates noted below. Late submissions lead to grade reductions for missing the deadline and up to a one-week delay. For writing assignments: 0.5%, and 1% and for the written research design 3% and 2%, respectively. No late submissions are accepted one week after the due date.

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 evaluation 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: Describe a theory that interests you, some testable or open hypotheses, and ideally some empirical implications that could be tested. 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].
Prepare for class discussion (not to be written up): find a paper that interests you and discuss its theory and empirical implications.

Writing Assignment 2 – Design your test: Using your selected research question describe an experimental and non-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]. Prepare for class discussion (not to be written up): find a paper that interests you and discuss its experimental or non-experimental design.

Writing Assignment 3 – Measuring variables: 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]. Prepare for class discussion (not to be written up): find a paper that interests you and discuss the measurement issues that c.

Writing assignment 4 – Full research design: 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 (ungraded)
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. Indeed, some degree of disagreement and discussion can be very productive.

Exercise 1 – Find a theory that interests you: 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: 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: Fully critique one of the empirical articles you found in your literature review.

Midterm Examination
I will post a pool of exam questions by 5 p.m. on the Monday prior to the midterm. On Wednesday at noon I will post the exam, consisting of four questions from the pool. You have until 5 p.m. the next day (Thursday) to complete the examination and submit your responses back to me (electronic copy via NYU Classes). That gives you a day but you shouldn’t need more than an hour or so to actually write the exam and a few hours or so for thinking about the exam prior to writing.

Final Presentation and Paper: Research Design
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. 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).

Elements to include are:
- Research Question(s)
• Design
• Measures/Data Collection
• Sample/Sampling and Power
• Strengths and limitations
• Potential research and policy implications

The final paper is due the Monday after our last class. Late papers will not be accepted.

Class Discussions and Participation
We will have four class discussions days, each devoted to a one of the writing assignments: causal models and hypothesis testing; experimental and non-experimental designs; measures and validity; and presentation of your research design. For the first three class discussions, you will also be asked to choose papers and discuss the features of these papers relevant to the theme of the day: how a paper develops a theory and draws out its testable implications; how a paper uses an experimental or non-experimental design to test a theory and the internal validity challenges of that test; and what measures a paper uses to operationalize concepts under discussion and validity issues surrounding those measures. For the fourth class discussion, you will present your research design, discussing theory, research design, measurement, and validity of the empirical tests and measures. Assuming our class size says at the current level you will have 15-20 minutes to present per class.

Expectations
Reading e-mail: I will communicate to you through your NYU e-mail. I’m assuming you read it at least once a day.

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

Absenteeism, 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 laptop 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.
Legend

- Required reading.
- Supplemental reading: readings mentioned in the lecture that you might wish to glance at before the lecture or read after the lecture.
  - Extra reading: additional readings listed on the syllabus, but not specifically discussed in class; for further reading if interested.

The course web directory at http://users.nber.org/~rdehejia/$DRM is organized by lecture and will provide copies of most readings mentioned in the syllabus under these three headings, except for required and supplemental textbooks mentioned above. For some lectures there is also a sub-directory labeled “yet more”: these are further readings that related to our topic that you can pursue if you have an interest in the topic.

Meeting 1

Topic: Introduction to the Course, Overview of Research, Program Evaluation vs. Research

Assignment due: None.

Readings:

- Rossi, Chapter 1.

Meeting 2

Topic:

- Needs Assessment: Understanding the Need for a Program or Research Project
- Understanding the Program: Program Theory, Theory of Change, Logic Models

Assignment due: Exercise 1: Describe a theory that interests you and its empirical implications.

Readings:

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

Meeting 3

Topic: What Does the Program Do?

- Process Evaluation
- Formative Evaluation
- Program Monitoring and Quality Improvement
- Implementation Analysis

Assignment due: Writing assignment 1: Explaining a theory, hypotheses, and testable implications
Readings

- Rossi, Chapter 6.
- WHO Process Evaluation Workbook
- Bamberger: Chapter 9 (pp. 169 – 193) and Chapter 8 (pp. 156-168).

Meeting 4
Assignment: Class discussion 1: theories, causal theories, hypotheses, and testing.

Meeting 5
Assignment due: Exercise 2: literature review.

Topic: Outcome evaluation: Cause and Effect (Internal Validity);
- How Isolate the Impact of the Program?
- Experimental Designs

Readings:
- Rossi, Chapters 7 (pp. 204-213) and Chapter 8.

Meeting 6
Topic: Non-experimental Designs
Assignment due: none.

Readings:
- Rossi, Chapter 9.
- Dehejia, Montgommery, and Morduch (2010). "Do Interest Rates Matter: Loan Demand in the Dhaka Slums".
- Galasso, Emanuela, “With their effort and one opportunity”: Alleviating extreme poverty in Chile, manuscript.
- Litschig, Stephan, “Intergovernmental Transfers and Elementary Education: Quasi-Experimental Evidence from Brazil,” manuscript.
- Bamberger: Ch 12, pp 266-277 and Ch 16, pp 373 – 391.
- Litschig, Stephan, “Rules vs. political discretion: evidence from constitutionally guaranteed transfers to local governments,” manuscript.

Meeting 7
**Topic:** Internal and External Validity

**Measurement**
- Reliability
- Construct Validity
- Types of Variables
- Indicators

**Assignment due:** Writing assignment 2: Outline both an experimental and a quasi-experimental design to test a research question

**Readings:**
- Rossi, Chapter 7 (pp. 213-232).
- Bamberger, Chapter 5 (pp. 88-111) and Chapter 11 (pp. 240-262).
- **Preparing to Collect Data:**
- National Quality Center, [Quality Academy Measurement and Data Tutorials](#) (Tutorials 7, 8, 9)

Meeting 8
**Assignment:** Class discussion 2: experimental and non-experimental designs.

Meeting 9
**Topic:** Data Collection, Sampling and Power (Effect Size and Sample Size), Overview of Data Analysis.

**Assignment due:** none.

**Readings:**
- Rossi, Chapter 10.
- Bamberger: Chapter 14 (pp. 323-354).
Meeting 10
Topic: Review of Measurement and Data Collection
Assignment due: Writing assignment 3: Outline possible measures, data collection, and sample (sampling) for your research design.

     - World Bank Evaluation Manual, Chapter 10
   - Bamberger, Chapter 16 (pp. 391 – 402).

Meeting 11
Assignment: Class discussion 3: Measurement and validity.

Meeting 12: Midterm.
Assignment: Exercise 3: critique a prior study.

Meeting 13:
Topic 13.1: Cost Benefit and Cost Effectiveness Analyses; Meta Analysis
Assignment due: Writing assignment 4: Full research design.

Readings:
   - Rossi, Chapter 11.
   - Bamberger, Chapter 11 (pp. 230-236) review, Chapter 12 (pp. 266 – 302), and Chapter 3 (pp. 303 – 322).

Topic 13.2: Real World Evaluation
   - Politics, Controversy
   - Research with Human Subjects
   - Regulations
   - Ethical Obligations and Responsibilities, NYU Human Subjects Tutorial:

Readings:
   - Rossi, Chapter 12.


o NYU Human Subjects Application:
  o http://www.nyu.edu/ucaihs/docs/application.doc


Meeting 14
Assignment: Research design presentations.

One week after final class: Final paper due.