

**The Heller School for Social Policy and Management, Brandeis University
International Program on Health Policy and Management, Master of Science**

HS 402f. Research Methods
Spring 2017 (Module 2)
Tuesday, 2:00 – 4:50 pm

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University Notices

1. If you are a student with a **documented disability** on record at Brandeis University and wish to have a reasonable accommodation made for you in this class, please see me immediately.
2. You are expected to be honest in all of your academic work. The University policy on **academic honesty** is distributed annually as section 5 of the [Rights and Responsibilities Handbook](#). Instances of alleged dishonesty are subject to possible judicial action. Potential sanctions include failure in the course and suspension from the University. If you have any questions about my expectations, please ask.

Academic integrity is central to the mission of educational excellence at Brandeis University. Each student is expected to turn in work completed independently, except when assignments specifically authorize collaborative effort. It is not acceptable to use the words or ideas of another person – be it a world-class philosopher or your roommate – without proper acknowledgement of that source. This means that you must use footnotes and quotation marks to indicate the source of any phrases, sentences, paragraphs or ideas found in published volumes, on the internet, or created by another student. If you are in doubt about the instructions for any assignment in this course, you must ask for clarification.

Course Requirements

1. Attendance at all sessions; prompt arrival.
2. Preparation of all readings.
3. Participation in class discussions and any small group work.
4. Timely submission/presentation of assignments.
5. Completion of a research proposal and a final paper and in class participation.
6. Participation in class discussion.
7. Contribution to requirements and objectives of group work.
8. Being helpful and considerate to other students.

This is a module course of the MS/GHPM program. This course is also open to students in other programs who are interested in the topic.

This syllabus is subject to change at any time at the discretion of the instructors. When in doubt, please ask the instructors.

Course Description

The purpose of this course is to prepare students (1) to understand the fundamentals of the rigorous conduct of health policy research methods and (2) to be sophisticated consumers of empirical health policy research. A variety of class formats will be used throughout the semester including lectures, discussions, and seminars, depending upon the topic and readings. Every student is expected to come to each class prepared to raise questions from the readings, respond to questions raised by other students and the instructor, discuss issues, and point out implications of the readings for policy and planning research.

Course Reading

The primary text for this course is Shadish, W.R., Cook, T.D., & Campbell, D.T. (2002). Experimental and quasi-experimental designs. Boston: Houghton-Mifflin Co. Additional papers and reports are indicated for each unit of the class. These will be available online or on Latte.

Other important readings are specified under the various lecture topics. Reading extensively from the professional literature on health system performance is very important for this course. Students are expected to do these readings, and to be able to summarize what they have read when called upon to do so in class.

Student Evaluation

Research Proposal	35%
Final paper	45%
Class participation	20%

Course Outline Sessions & Assignments

Date	Session	Topic	Instructor
March 14	1	Topic 1 Course overview Topic 2 Presentation of research methods, discussion of motivation for research, cause and effect, hypotheses, internal and external validity, etc	Bowser
March 21	2	Review of Internal and External Validity Sample, sample size	Bowser
April 28	3	Randomized Controlled Trials (RCT)	Bowser
April 4	4	Observational Studies (case control, cohort, pre-post policy change) Assignment #1 due	Bowser
April 11	5	Quasi Experimental Designs and Difference-in-Differences Designs	Razavi
April 18	6	Topic 1: Alternative Quasi Experimental Designs: Interrupted Time Series and Regression Discontinuity Designs Topic 2: Matching: Background characteristics based matching and Propensity Score Matching	Razavi
May 25*	7	Topic 1: Generalized Inference: Multistudy programs, Systematic Reviews and Meta Analysis Topic 2: Mixed-Method Quantitative-Qualitative Evaluation Designs Topic 3: An overview of alternative designs for dynamic and complex systems: static and dynamic microsimulations, complex system modeling, Case Study: PRISM	Razavi

*(Date may change based on spring registrar schedule)

Writing Assignments

Students will complete two writing assignments and post them on LATTE. Specific details on each assignment will be detailed during class.

Class Schedule and Topics
(Preliminary and subject to change)

14 March 2017

**Class 1: Course overview (Topic 1): Presentation of research methods, discussion of motivation for research, cause and effect, hypotheses testing
(Topic 2): Internal and External Validity**

Shadish, Cook & Campbell, chapters 1 (pages 1-12), 2 & 3

Lui, Li et al. (2015). Global, regional, and national causes of child mortality in 2000–13, with projections to inform post-2015 priorities: an updated systematic analysis. *Lancet*. 385(9966): 430-440 (Introduction and Methods Only)

21 March 2017

Class 2

**Topic 1: Review Internal and External Validity
Topic 2: Sample, Sample Size**

Shadish, Cook & Campbell, chapters 8-10

28 March 2017

Class 3: Randomized Control Trials

Shadish, Cook & Campbell, chapters 4 & 5 (sections of these chapters)

Case Study: Luca M. Bigatello, H.A., A. K. H., B. N., J. D. R., K. A., A. C., U. S., Moaven Razavi. "Effects of routine monitoring of delirium in a surgical / trauma intensive care unit." *Journal of Trauma and Acute Care Surgery* 74. 3 (2013): 876–883.

4 April 2017

Class 4: Observational Studies

Assignment 1– Developing a research protocol with a RCT design

Shadish, Cook & Campbell, chapter 6

Levine, R.S., Rust, G.S., Pisu, M., Agboto, V., Baltrus, P.A., Briggs, N.C., et al. (2010). Increased Black-white disparities in mortality after the introduction of lifesaving innovations: A possible consequence of US federal laws. *American Journal of Public Health*, 100, 2176-2184.

Additional reference to be added

11 April 2017

Class 5: Quasi Experimental Designs and Difference-in-Differences Designs

Shadish, Cook & Campbell, chapter 5

Moaven Razavi (2011). Impact of Structural Adjustment Programs on Healthcare Financing in Iran. Chapter 3 and Chapter 4

Grace et al. (2012). Effect of Nonpayment for Preventable Infections in U.S. Hospitals. *New England Journal of Medicine*. 367:1428-1437

Additional reference to be added

18 April 2017

Class 6:

Assignment 2–Adapting your research question to a new study design

Topic I: Alternative Quasi Experimental Designs: Interrupted Time Series and Regression Discontinuity Designs

Topic II: Matching: Background characteristics based matching and Propensity Score Matching

Shadish, Cook & Campbell, chapters 6 and 7

Ralph B. Doagostino. 1998. Tutorial in Biostatistics: Propensity Score Methods for Bias Reduction in the Comparison of Treatment to a Non-Randomized Control Group. *Statistics in Medicine*. 17, 2265-2281

Keisuke Hirano. (2001) Estimation of Causal Effects using Propensity Score Weighting: An Application to Data on Right Heart Catheterization. *Health Services Outcome and Research Methodology*. 2:259-278

Additional reference to be added

25 April 2017 (this last date is subject to change)

Class 7:

Topic I: Generalized Inference: Multistudy programs, Systematic Reviews and Meta Analysis

Topic II: Mixed-Method Quantitative-Qualitative Evaluation Designs

Shadish, Cook & Campbell, chapter 13

Andy P. Field¹ and Raphael Gillett (2010). How to do a meta-analysis. *British Journal of Mathematical and Statistical Psychology*. Volume 63, Issue 3, 665–694

John W. Creswall (2003). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*, Second Edition. SAGE Publications.

Additional reference to be added