**PLCY801 Design of Policy Research**

**Fall 2015**

Tuesdays and Thursdays, 12:30-1:45

Location: Mitchell 106

**Instructor**

Douglas Lee Lauen

Associate Professor of Public Policy

**Office**: 121 Abernethy Hall

**Office hours**: Wed., 2:00-3:30

**Phone**: (919) 843-5010

**Email**: dlauen@unc.edu

**Course Goal**

To increase student competence in understanding, critiquing, and creating research designs with a strong basis for making causal inference

**Target Audience**

Ph.D. students in the public policy, planning, health policy, and the social sciences

**Skills and Knowledge Developed**

* The theoretical principles of making causal inferences from quantitative evidence;
* Statistical simulation to better understand the theoretical principles of causal inference
* Identifying assumptions, strengths, and limitations of research designs often used in applied social science research fields such as planning and public policy;
* Constructive critique of research designs of peer-reviewed quantitative social science research published in academic journals; and
* Creating quantitative research designs that have a stronger basis for causal inference.

**Prerequisites**

At least one graduate level course in multiple linear regression analysis

**Course Sakai Site**

The course Sakai site has pdfs of selected readings (under Resources). Important notices about schedule changes and other operational details will be posted on Sakai with a cc to your email. You are responsible for all information on Sakai and to your email, so please check both regularly. You will submit assignments through Sakai and in hard copy in class.

**Course Texts**

*All have been ordered by UNC Student Stores and are widely available through online vendors*

*Required*

Hernan, M. & Robins, J. (2015). *Causal Inference*. Prepublication drafts available at no cost here: <http://www.hsph.harvard.edu/miguel-hernan/causal-inference-book/>

Murnane, R. J., & Willett, J. B. (2010). *Methods matter: Improving causal inference in educational and social science research*: Oxford University Press, USA.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*: Wadsworth Cengage learning.

*Recommended*

Angrist, J. D., & Pischke, J. S. (2008). *Mostly harmless econometrics: An empiricist's companion*: Princeton University Press.

Firebaugh, G. (2008). *Seven rules for social research*: Princeton University Press.

Morgan, S. L., & Winship, C. (2014). *Counterfactuals and causal inference: Methods and principles for social research*: Cambridge University Press. 2nd edition

Wooldridge, J. M. (2009). *Introductory econometrics: A modern approach*: South-Western Pub.

**Assignments**

*All assignments must be completed individually unless otherwise noted.*

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| --- | --- | --- |
| **Pts** | **Assignment** | **Due Date** |
| 10  | Simulation / DAGs – exercise / problem set | Sept. 8 |
| 15 | Theory of causal inference take-at-home exam | Sept. 10, 7-9 pm |
| 10  | One brief in-class presentation (~20 minutes) of an empirical paper critically evaluating its research design – oral, no written component. You may choose one that is on the syllabus (see the Applications readings on the syllabus, below) or one that you select for the class. Any reading selections you propose to discuss must be cleared with the professor two weeks in advance of the date of the presentation AND the proposed paper must use a research design we are scheduled to discuss on the day of the paper presentation. See Sakai wiki site under “Applications Paper Presentations” for more details.  | Various |
| 20  | Research design #1\* – closed ended, written, approx. 4-6 pages | Nov. 3 |
| 30  | Research design #2\* and presentation (~35 minutes) – open ended – must be IV, RD, CITS, DD, or FE – four page single spaced handout and oral presentation. **Teams of two** students per research design.  | Nov. 17-24 |
| 15 | Participation – quantity and quality of contributions to class discussion.  | Always! |

\* Note: Any design receiving a grade of “fail” or “low pass” will be permitted a one-week revise and resubmit period in which the written portion will be re-graded. A revised design will be graded no higher than a “pass.”

**Grading**

Graduate student grades at UNC are assigned as follows:

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| **H** | High Pass - Clear Excellence |
| **P** | Pass - Entirely Satisfactory Graduate Work |
| **L** | Low Pass - Inadequate Graduate Work |
| **F** | Fail |

All assignments will be graded on a four-point scale: 1 (fail), 2 (low pass), 3 (pass), 4 (high pass). Scores will be weighted by point value and averaged to create a final grade composite score. Final grades will be awarded based on the following translation of points to grades:

**H** 3.50-4.00

**P** 2.50-3.49

**L** 1.50-2.49

**F** 1.00-1.49

**Grade Appeal Policy**

I take the evaluation and grading of your work very seriously because I know that most of you take the preparation and writing of your work very seriously. If you think you deserve a higher grade on your work, you may write a letter and explain why you would like to appeal the grade.  Before making an appeal, you should review the grading criteria and grading comments and re-read your work with these in mind.  After I receive your letter, I will re-read your work.  Depending on my re-reading, your grade may stay the same, be raised, or be lowered. This system is designed to minimize frivolous grade appeals and to ensure that you have carefully examined and reflected on the quality of your work before deciding to initiate a grade appeal.

**Late Assignments and Extensions**

Points will be subtracted from late assignments at a rate of ten percent of total point value per day. All assignments must be submitted to Sakai for a “date and time stamp.” The late assignment policy will apply to the date and time on which an assignment was received by Sakai. If technical problems prevent you from submitting your first assignment to Sakai, you will receive an automatic grace period of 24 hours provided you also submit documentation that your technical problem was genuine (e.g., a tech support “help ticket.”). No such grace periods will apply to assignments subsequent to the first. You are expected to verify that your assignments have been properly submitted.

If personal or extenuating circumstances prevent you from turning in an assignment on time, please contact me as soon as possible *in advance* of the deadline. Extensions will be handled on a case-by-case basis, but job interviews, work commitments, extracurricular activities, weddings, travel plans, and academic workload issues will not be considered valid reasons for extensions. Serious medical emergencies and other unexpected events, with documented proof, may be grounds for an extension.

**Norms of academic behavior**

The purpose of class time is to enhance your understanding of material covered in the course reading. To state the obvious, to get the most out of these experiences you must come to class prepared and on time, get enough sleep the night before, and avoid any distractions that might hinder your learning. Failing to read outside of class, coming to class late, falling asleep and/or text messaging during class wastes your time, my time, and insults your fellow students. **During class time, therefore, please refrain from using electronic devices such as phones.** You may use your laptop to take notes on a laptop, but note that I will provide lecture slides in advance of every lecture and many lectures will include equations and graphs that will be difficult for you to reproduce “on the fly” while typing on a laptop.

**Honor Code**

The honor code is on effect in this class and all others at the University. I treat Honor Code violations seriously and urge all students to become familiar with its terms set out at http://instrument.unc.edu. If you have questions, it is your responsibility to ask us about the Code’s application. It is assumed that all exams, written work and assignments submitted by you are in compliance with the requirements of the Honor Code.

**Academic Integrity/Plagiarism**

In order to ensure effective functioning of the Honor System at Carolina, all students are expected to:

1. Conduct all academic work within the letter and spirit of the Honor Code, which prohibits the giving or receiving of unauthorized aid in all academic processes. If unsure about the limits of group work versus individual work on papers and projects, ask the instructor. Do not guess.
2. Consult with faculty and other sources to clarify the meaning of plagiarism; to learn the recognized techniques of proper attribution of sources used in written work; and to identify allowable resource materials or aids to be used during completion of any graded work.
3. Sign a pledge on all graded academic work certifying that no unauthorized assistance has been received or given in the completion of the work.
4. Treat all members of the University community with respect and fairness.
5. Report any instance in which reasonable grounds exist to believe that a student has given or received unauthorized aid in graded work or in other respects violated the Honor Code. Reports should be made to the office of the Student Attorney General.

At UNC, plagiarism is defined as "the deliberate or reckless representation of another's words, thoughts, or ideas as one's own without attribution in connection with submission of academic work, whether graded or otherwise." ([*Instrument of Student Judicial Governance*](http://instrument.unc.edu/)*,* Section II.B.1.). Because it is considered a form of cheating, the Office of the Dean of Students can punish students who plagiarize with course failure and suspension. Full information can be found on the [UNC Honor System](http://honor.unc.edu/) page UNC Writing Center Handout: <http://writingcenter.unc.edu/resources/handouts-demos/citation/plagiarism>)

**Course Schedule**

In general, Tuesdays will be lectures and Thursdays will be discussions. Lectures will serve to introduce, clarify, and elaborate upon key points from thereadings. Discussions will provide an opportunity for students to deepen their understanding of key points through Q&A, exercises, and constructive critique of empirical papers. On days with empirical papers to discuss, students will lead the discussion portion. Background/optional readings are optional selections for those interested in further reading on the topic. Note that in some cases only portions of a reading selection are assigned. This is the case when page numbers are listed.

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| **Date** | **Format** | **Topic** | **Readings** | **Due** |
| Tu Aug 18 | L&D | Course Overview |  |  |
| Th Aug 20 | L | Validity typology | SCC, chapters 1-3 |  |
| Tu Aug 25 | L | Causal effects  | Pearl 2000, epilogueHolland 1986Heckman 2005, pp 1-9.  |  |
| Th Aug 27 | D | Causal effects | HR, chapters 1-3 |  |
| Tu Sept 1 | L | Causal graphs / Confounding | HR, chapters 6-7Morgan & Winship, chapters 3 & 4Pearl 2000, d-separation without tearsBackground / OptionalHernán et al 2002Elwert 2013, pp 245-262  |  |
| Th Sept 3 | L | Confounding / Simulation | See above |  |
| Tu Sept 8 | D | Selection bias / Mediation | HR, chapter 8Imai et al 2011VanderWeele 2015, pp 20-35Background / OptionalElwert & Winship 2014Hernán et al 2004Baron & Kenny 1986Valeri & VanderWeele 2013 |  |
| Th Sept 10 | D | Causal Inference |  | Take Home Exam – Released 7 pm. Due 9 pm. |
| Tu Sept 15 | L | Experiments  | MW, chapters 4-5 (chapters 6-7 optional) | Simulation / DAG Exercise |
| Th Sept 17 | D | Experiments | Applications of RCT:Katz et al 2001 |  |
| Tu Sept 22 | L | Natural Experiments / IV | MW, chapters 8, 10-11Background / OptionalMeyer 1995Angrist and Krueger 2001Rubin 2008, pp. 808-815Angrist & Pischike 2010 Morgan and Winship, chapter 7 |  |
| Th Sept 24 | D | IV | Applications of IV:Angrist 1990Research IV papers in an area of interest |  |
| Tu Sept 29 | L | RD | SCC, chapter 7MW, chapter 9Background / OptionalImbens & Lemieux 2007 |  |
| Th Oct 1 | D | RD | Applications of RD:Gormley & Gayer 2005 |  |
| Tu Oct 6 | L | DD / CITS | Angrist & Pishke 2009, chapter 5SCC, chapter 6St. Clair & Cook 2015 |  |
| Th Oct 8 | D | DD / CITS | Applications of DD:Card & Krueger 1994 Cheng & Hoekstra 2013 |  |
| Tu Oct 13 | L | CITS/FE/RE | Angrist & Pishke, chapter 5Wooldridge 2003, chapter 14 |  |
| Th Oct 15 | No Class – Fall Break |
| Tu Oct 20 | D | FE | Applications of FE / CITS:Budig & England 2001Also – Dee & Jacob 2011 NCLB CITS paper |  |
| Th Oct 22 |  |  | Class Cancelled |  |
| Tu Oct 27 | L | PSM | MW, chapter 12Rosenbaum & Rubin 1983 |  |
| Th Oct 29 | D | PSM | Applications of PSM: Gunter & Daly 2012Also: Ito 2014 DD paper |  |
| Tu Nov 3 | L | Within-study comparisons | Cook, Shadish & Wong 2008Lauen et al IES ProposalSt. Clair, Cook, Hallberg 2014 | Research Design #1 |
| Th Nov 5 | D | Pros and cons of designs | TBA |  |
| Tu Nov 10 | D | Constructive critique | TBA |  |
| Th Nov 12 |  |  | Class Cancelled |  |
| Tu Nov 17 | D | Student presentations | Student research proposal presentations  | Research Design #2 |
| Th Nov 19 | D | Student presentations | Student research proposal presentations  | Research Design #2 |
| Tu Nov 24 | D | Student presentations | Student research proposal presentations  | Research Design #2 |
| Th Nov 26 | No Class - Thanksgiving |
| Tu Dec 1 | L&D | Wrap up |  |  |

**Abbreviations**

L – Lecture

D – Discussion

E – Exercise

TBA – to be announced

IV – instrumental variable

RD – regression discontinuity

DD – difference-in-difference

CITS – comparative interrupted time series

FE – fixed effects

PSM – propensity score matching

SSC – Shadish, Cook & Campbell 2002

HR – Hernán & Robins Forthcoming

MW – Murnane & Willett 2010

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