Course syllabus
POLC78H3

POLITICAL ANALYSIS I

Fall 2019

Thursdays 3:00 – 5:00, HL B101
Office Hours: Thursdays 5:00 – 6:00, HL 502

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Course description: What makes political science *scientific?* POLC78 introduces students to the scientific method and the principles of research design used in political science. Topics include the philosophy of causal inference, experiment design, hypothesis testing, data gathering and analysis, case studies, large-*N* research design and emerging methods. Students will learn how to craft and scrutinize professional research proposals and interpret research findings.

Format: POLC78 consists of eleven two hour lectures, one in-class midterm exam and a final exam during the final exam period. Students are encouraged to comment on the material and ask questions during lectures.

Readings: all readings are posted to the course Quercus page

Grading Scheme and Course Requirements:

Research proposal draft (21 October)	10%
Midterm exam (24 October)	20%
Peer review (10 November)	10%
Research proposal (25 November)	25%
Final exam (10 December)	35%

Exams: A 90-minute midterm exam will take place during class on 24 October. The midterm will cover material discussed in lecture to that point. The final exam will be 120 minutes and will take place in SW128 and SW143 on 10 December from 7:00-9:00pm. Both exams will consist of multiple choice and short answer questions based on material discussed in lectures. The final exam is cumulative but will emphasize material covered after the midterm. Both exams are closed-book.

Research proposal: A major component of POLC78 is a research proposal that specifies a research question, hypothesis and method of data collection and analysis. Note that POLC78 does not involve any actual analysis, just a research proposal. Students are required to submit a draft proposal for comments from the teaching assistant/instructor and peer reviewers by 11:59pm on 21 October. Draft proposals should be no shorter than 900 words. The final draft of the research proposal is due by 11:59pm on 25

November, and should be no shorter than 2,000 words including references, tables, figures and notes. Detailed instructions for both assignments are posted on Quercus. Do not hesitate to get in touch with the instructor if you have questions or concerns about the assignments.

Peer review: Students will be randomly paired to provide one page of anonymous comments on fellow students' draft research proposals. Only students who submit a draft research proposal by 29 October will receive a paper to peer review. Students who submit draft proposals after 29 October will receive zero on the peer review assignment. It is therefore very important to submit a draft research proposal on time. The peer review assignment is due by 11:59pm on 10 November. Instructions on how to anonymize MS Word files are posted on Quercus. Contact the instructor if you have concerns.

Assignment submission: Normally, students will be required to submit written work to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site. Submission to Turnitin is voluntary**.** Students who wish to submit written assignments by other means must make arrangements with the instructor at least one week prior to the assignment due date.

All assignments are due by 11:59pm on the due date listed. Late assignments will be penalized five percentage points per day late, beginning at 12:00am. Assignments may be either single or double spaced, employ three quarter or one inch margins, and may use either Chicago style or APA in-text citations.

Extensions and absences: Extensions will be granted, and absences excused, only in the event of documented necessity. Late essays will be penalized percentage points per day. No assignments will be accepted after 10 December, except under extenuating circumstances. If a student must submit an assignment after 10 December, a petition through the faculty administration may be required.

Grade appeals: Grades for major assignments may be appealed, first, to the course instructor and, subsequently, to the Department of Political Science.

Accessibility needs: The University of Toronto is committed to accessibility. If you require assistance or have any accessibility concerns, please visit: https://www.utsc.utoronto.ca/~ability/

Academic misconduct: Make sure the information in your essays is in your own words. Plagiarism is a serious academic offence and will be handled according to the rules in the university's Code of Behaviour. For further information, see the University of Toronto's policy on academic integrity at: https://www.utsc.utoronto.ca/aacc/academic-integrity

CLASS SCHEDULE

PART I: principles of political analysis

5 Sept: introduction to the principles of political analysis, course overview

Topics covered: introductory overview; the epistemology of social science; weekly themes; course administration; assignments and expectations

12 Sept: guest lecturer, the problem of induction

Topics covered: inductive inference, the problem of induction

Required reading:

Hume, David. (1748). Sceptical doubts concerning the operations of the understanding In *An enquiry concerning human understanding* (pp. 18-29). London: A. Millar

Popper, Karl. (1959). A survey of some fundamental problems. In *The logic of scientific discovery* (pp. 3-26). London: Hutchinson.

19 Sept: logical positivism, science and the 'demarcation criterion'

Topics covered: logical positivism; metaphysics; pseudo-science; primitive science; naïve falsificationism; Bayesian inference

Required reading:

Ayer, A.J. (1952). The elimination of metaphysics. In *Language, truth and logic* (pp. 4-14). New York: Dover.

Popper, Karl. (1963) Science as falsification. In *Conjectures and refutations* (pp. 44-51). London: Routledge.

26 Sept: sophisticated falsificationism

Topics covered: the process of scientific advance; scientific paradigms; political and socio-psychological dimensions of science

Required reading:

Kuhn, Thomas. (1970). Logic of discovery or psychology of research? In I. Lakatos & A. Musgrave (eds.) *Criticism and the growth of knowledge* (pp. 1-23).

Lakatos, Imre. (1970). [Excerpts from] Falsification and the methodology of scientific research programs In I. Lakatos and A. Musgrave (Eds.) *Criticism and the growth of knowledge* (pp. 91-196). New York: Cambridge University Press. [six pages]

3 Oct: the hypothetico-deductive method, experiments and the logic of causal inference

Topics covered: deductive inference; hypothesis formulation; experiment design; microfoundations (i.e., behavioural assumptions); parsimony and leverage; theories, frameworks and models; the 'fundamental problem of causal inference'; introduction to causal mechanisms

Required reading:

Hempel, Carl. (1966). Scientific inquiry and test. In *Philosophy of natural science* (pp.193-208). Upper Saddle River, NJ: Prentice-Hall.

King, Gary, Keohane, Robert & Verba, Sidney. (1994). The *science* in social science. In *Designing social inquiry* (pp. 3-33). Princeton, NJ. Princeton University Press.

10 Oct: types of data, validity, in-class experiment

Topics covered: internal and external validity; construct validity; interviews; questionnaires; surveys; observational studies; desk research; archival research; research ethics; permissions; in-class lab experiment (worth 1% bonus)

Required reading:

Wood, Elizabeth. (2009). Field research. In C. Boix & S. Stoked (eds.) *The Oxford handbook of comparative politics* (pp. 123-46). New York: Oxford University Press.

24 Oct: MIDTERM EXAM

PART II: practical considerations in political analysis

31 Oct: correlational analysis and case selection

Topics covered: principles of regression analysis; case selection; selection bias; confoundingness and spurious findings

Required reading:

Seltman, Howard. (2018). [Excerpts from] Simple linear regression. In *Experimental design and analysis* (pp. 213-40). Mimeo. [fifteen pages]

Geddes, Barbara. (1990). How the cases you choose affect the answers you get: Selection bias in comparative politics. *Political Analysis, 2*(1): 131-50.

7 Nov: case studies, mixed methods and nested design

Topics covered: observable and unobservable causal mechanisms; case selection, selection bias, confoundingness and spuriousness redux

Required reading:

Lieberman, Evan. (2005). Nested analysis as a mixed-method strategy for comparative research. *American Political Science Review, 99*(3): 435–52.

Rohlfing, Ingo. (2008). What you see and what you get: Pitfalls and principles of nested analysis in comparative research. *Comparative Political Studies, 41*(11): 1492-1514.

14 Nov: process tracing and formal modelling

Topics covered: informal process tracing; Bayesian process tracing; microfoundations part II — utility functions

Required reading:

Bennett, Andrew & Checkel, Jeffrey. (2015). Process tracing: from philosophical roots to best practices. In A. Bennett & J. Checkel (eds.) *Process tracing from metaphor to analytic tool* (pp. 3-38). Cambridge: Cambridge University Press.

Bennett, Andrew. (2015). Disciplining our conjectures: Systematizing process tracing with Bayesian analysis. In A. Bennett & J. Checkel (eds.) *Process tracing from metaphor to analytic tool* (pp. 276-98). Cambridge: Cambridge University Press

21 Nov: set theoretic applications

Topics covered: set-theoretic versus correlational hypotheses; asymmetrical versus symmetrical hypotheses

Required reading:

Ragin, Charles. (2008). Set relations in social research: basic concepts. In *Redesigning social inquiry: fuzzy sets and beyond* (pp. 13-28). Chicago: University of Chicago Press.

Ragin, Charles. (2008). Fuzzy sets and fuzzy-set relations. In *Redesigning social inquiry: fuzzy sets and beyond* (pp. 29-43). Chicago: University of Chicago Press.

28 Nov: complex models, dimensionality reduction and machine learning applications (e.g., sentiment analysis, topic modelling, neural networks)

Topics covered: multilevel, hierarchical and cluster analysis; latent variables; index construction; artificial intelligence applications (supervised and unsupervised machine learning)

Required reading:

Schmiedel, Teresa et al. (forthcoming). Topic modeling as a strategy of inquiry in organizational research: a tutorial with an application example on organizational culture. *Organizational Research Methods* (early view, ahead of print).