

## **POL242Y1 (Summer-2015): Research Methods for Specialists**

MTWR 6-8 pm, SS 561

### **Renan Levine**

Department of Political Science, UTSC [renan.levine@utoronto.ca](mailto:renan.levine@utoronto.ca) (best)

Office Hours: Before class, TBA

TAs: Anthony Sealey: [anthony.sealey@utoronto.ca](mailto:anthony.sealey@utoronto.ca)

Gregory Eady: [gregory.eady@mail.utoronto.ca](mailto:gregory.eady@mail.utoronto.ca)

### **Course Description**

This course introduces fundamentals of research design and data analysis for political science. Contrary to most classes in social sciences, students in this course are expected to produce their *own* empirical research results and analyse them. The culmination of this original research is a short paper presenting an original multivariate regression analysis. Principles of scientific research design, tips on conducting an effective literature review, and several qualitative research techniques will be reviewed. To acquire the necessary research tools, students will complete multiple assignments and in-class tasks utilizing computer-based exercises. No prior knowledge of university-level math is assumed.

### **Goals:**

- Apply principles of research design, including hypothesis testing and literature reviews.
- Become familiar with qualitative research methods.
- Learn which analysis is appropriate given the research question and the data.
- Perform and interpret statistical analyses commonly performed by political scientists and public policy analysts.
- Gain proficiency with SPSS, a common statistics program used by social scientists.
- Complete an original multivariate statistical analysis.

### **Evaluation:**

Six worksheets –	<b>35%</b>
Final Exam	<b>24%</b>
Midterm	<b>15%</b>
Regression Analysis Paper –	<b>10%</b>
Six in-class quizzes –	<b>10%</b>
Participation & Attendance –	<b>6%</b>
Total = 100%	

### **Assignments**

Details of the assignments can be found on Blackboard.

## **Grading Policy**

Assignments are always due at midnight on the day they are due. Depending on the assignment, answers should be submitted to Blackboard or papers (and output) to Turnitin.com. We may also request or recommend that you submit a hard copy in class to facilitate grading and comments.

Extensions for non-health reasons may only be granted prior to the day of the assignment deadline, exam or quiz by the instructor or the TA. Any extensions due to health must be arranged within 24 hours of the deadline. Late assignments will be penalized 4% per day for the first four days of lateness. Each day ends at midnight. After four days of lateness, the teaching assistants and the instructor will refuse to accept the work for grading.

Any student who believes that any work has been unfairly graded may ask the instructor to re-evaluate his or her work. Grading appeals should be submitted with a cover letter explaining the basis of the appeal to the instructor or the teaching assistant. No oral appeals will be considered. Any appeals of term work must be submitted no later than midnight on Friday, August 7.

## **Plagiarism – turnitin.com**

Plagiarism is a serious academic offense with a severe penalty. It is essential that you understand what plagiarism is and that you do not commit it. Please see <http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize> for more information and tips on how to avoid plagiarism.

Students agree that by taking this course all required papers and write-ups must be submitted for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site.

## **Collaborative Work**

During class, especially during laboratory activities, you will be encouraged to collaborate and work with your classmates. Be sure to indicate on all work turned in for a grade if you collaborated with anyone during the completion of the assignment.

## **Tutorials**

Tutorials are an essential part of POL242. Tutorials provide an opportunity to complete work for class with the assistance of the teaching assistants. Because of the highly technical nature of the course, students typically do perform much better if they attend tutorials. All tutorials are held in the classroom SS 561.

## **Required Readings:**

Paul M. Kellstedt & Guy Whitten, *The Fundamentals of Political Science Research*, Cambridge University Press, Second Edition, 2013.

Other readings are available on-line through the library, Blackboard or via archives like JStor.

### **Recommended Alternative Readings:**

The required text covers principles of research design and the mechanics of statistical analysis at a level appropriate for advanced undergraduates or graduate students. Select students may prefer to consult other texts that may either cover one topic more in depth or because the material presented is clearer or easier to understand. The library has many such books, a few that I recommend (including several that have been assigned to POL242 students in the past):

A general overview of social science research methods:

Earl Babbie and Lucia Benaquisto, *Fundamentals of Social Research*, 3rd Edition (Toronto: Nelson Education, 2014- but most any edition of Babbie [with several different titles] will do.

Extensive overview of research design principles and how different methods are applied in political science:

Keith Archer and Loleen Berdahl, *Explorations* (Oxford, 2011).

Jarol B. Manheim, Richard Rich, Lars Willnat and Craig Leonard Brians, *Empirical Political Analysis: Research Methods in Political Science*, 8<sup>th</sup> edition (Pearson Longman, 2010).

Maryann Barakso, Daniel Sabet, and Brian Schaffner. *Understanding Political Science Research Methods: The Challenge of Inference* (Routledge, 2014)

Texts primarily focused on applications of statistics for politics and public policy:

Michael Haan, *An Introduction to Statistics for Canadian Social Scientists*, (Oxford, 2009).

Phillip H. Pollock III, *The Essentials of Political Analysis*, 4<sup>th</sup> edition, Congressional Quarterly Press, 2011.

There are many guides for using SPSS. This one is highly recommended as a guide to using SPSS, but also because it does a very good job helping one understand how to interpret the output.

Pallant, Julie. *SPSS Survival Manual*. McGraw Hill.

Students are also advised to consult the following on-line textbooks:

Wolfgang Ludwig-Mayerhofer, *Internet Guide to SPSS for Windows*

<http://www.lrz-muenchen.de/~wlm/wlmspss.htm>

John L. Korey, *Politically-Oriented Web-Enhanced Research Methods for Undergraduates — Topics and Tools*:

<http://www.csupomona.edu/%7Ejlkorey/POWERMUTT/index.html>

More recommended readings on statistics, graphics, technical writing and presentations can be found at: [http://www.chass.utoronto.ca/pol242/rec\\_readings.htm](http://www.chass.utoronto.ca/pol242/rec_readings.htm)

### Computer Software

In this class, we will be using a widely used statistical program produced by IBM called SPSS. All the computers in the computer lab have copies of SPSS. To log into the computers, simply use your UTORid and password (like you would for portal or your utoronto email). Occasionally, we may also use a spreadsheet like Microsoft Excel.

You can access the lab any time it is open as long as it is not being used for a class. POL242 has specifically reserved the lab from 5-9 pm, Monday through Thursday nights. During this time, you have priority on using the computers.

Please note that you cannot save your work on the computers in the laborator. As a result, bringing a USB key is recommended, but since USB keys are so frequently lost, students are urged to set up a [free] account on one of many cloud-storage providers like OneDrive (Microsoft), Google Drive, Dropbox, Copy.com, Box.com, and/or Mega. On your own computers, tablets and smart phones, you can often set up a dedicated folder or app for such services, but in the lab you will need to rely on these services' web-based interfaces. You can also email yourself copies of your work, especially your syntax files.

Students who want to work from home or own a copy of the software on their personal computer have several options:

- Students can purchase a one-year license for SPSS for about \$80 through the university at <http://www.utoronto.ca/ic/software/detail/spss.html>. Other license options may also be available.
- Students can download an open-source alternative to SPSS called PSPP. **PSPP is free**, and can be downloaded for PCs from here <http://sourceforge.net/projects/pspp4windows/files/>. Mac users can find a version here:

Not all of the features of SPSS are available (yet?) in PSPP, but most, if not all of the tasks required for this class will work on PSPP. The interface will look less polished, and some buttons may be in a different place, but if you use SPSS, you can easily use PSPP. PSPP often uses a simpler, older version of SPSS syntax, but adjusting syntax from SPSS to PSPP is easy and the reverse (using PSPP syntax on SPSS) usually works fine. If possible, you are strongly advised to download PSPP on your home computer or laptop to supplement work done on SPSS in the computer lab.

- An older version of SPSS with many of the datasets used in our class is available online for free with one's UTORid here: <http://groups.chass.utoronto.ca/pol242/>
- The instructor and/or the teaching assistants also support a statistics program called STATA (one year \$59 or perpetual license for \$108 when purchased through the university), and a free, powerful program called R, which can be run through Excel (<http://cran.r-project.org/>). Students with compelling reasons to learn either software are encouraged to do so.

## **Class Schedule:**

### *Week 1*

*Monday, June 29* – Introduction: What is Social (Scientific) Research?

Key terms/concepts and methods:

- Types of datasets

- Closed vs. open survey questions

*Tuesday, June 30* – Levels of Measurement and Descriptive Statistics

Activity: Descriptive Statistics

Reading: K & W, pp. 109- 126 (end of Ch. 5)

OPOSSEM Wiki on Levels of Measurement and Descriptive Statistics.

**Quiz: Levels of measurement (at the end of class)**

Key terms/concepts and methods:

- Inference

- Levels of measurement

  - Nominal

  - Ordinal

  - Interval

  - Categorical

  - Continuous

- Descriptive Statistics

- Frequencies (SPSS)

- Recode (SPSS)

- Weight (SPSS)

- Syntax method (SPSS)

*Thursday, July 2* - Scientific Method

Reading: K & W, Ch. 1

Key terms/concepts and methods:

- Causality

- Conceptualization

- Operationalization

- Covariation

- Null hypothesis

- Hypothesis testing

- Independent variable

- Dependent variable

### *Week 2*

*Monday, July 6* - Introduction to Bivariate Analysis

Readings: OPOSSEM Wiki on Crosstabs; K & W, pp. 150-155

**Univariate Worksheet Due**

Activity: Hypothesis writing

Key terms/concepts and methods:

- Cross-tabulation

- Probabilistic causality

- Type I and Type II errors

- Statistical significance

- Substantive significance

*Tuesday, July 7 - Chi Square and Measures of Association*

Activity: Analyzing crosstabs

Readings: K & W, Ch. 7; OPOSSEM Wiki on Measures of Association

**Hypotheses Worksheet Due.**

Key terms/concepts and methods:

Association

Measures of association: Tau-B, Tau-C, Phi, Cramer's V, Lambda

Chi-square

*Wednesday, July 8 – Operationalization and Measurement*

**Quiz Bivariate Analysis**

Reading: K & W, Ch. 5 to p. 107

Putnam, Robert, "Tuning in and turning out: the strange disappearance of social capital in America." PS: Political science and politics, December 1995.

Recommended: Craig, Stephen C., Richard G. Niemi and Glenn E. Silver. "Political Efficacy and Trust: A Report on the NES Pilot Study Items." Political Behavior, Vol. 12, No. 3 (Sep., 1990), pp. 289-314.

Key terms/concepts and methods:

Operationalization

Reliability

Validity

Cronbach's Alpha

*Thursday, July 9 – Surveys, sampling and case selection*

Reading: K & W, Ch. 6

King, Gary, Robert Keohane and Sidney Verba. Designing Social Inquiry. Princeton

University Press. 1994. Ch. 4 "Determining what to observe." (Available through UToronto libraries at: <http://simplelink.library.utoronto.ca/url.cfm/24400>) Focus on pp. 124-138, which reviews selection bias.

Key terms/concepts and methods:

Probability

Sampling

Sample size

Survey modes and methods

Week 3

*Monday, July 13 - Probability and t-tests*

**Crosstab Worksheet Due**

Activity: Analyze t-tests and ANOVAs

Reading: K & W, Ch. 7

*Tuesday, July 14 – Qualitative Interviewing and focus groups*

TBA

*Wednesday, July 15 – Correlation and Graphical Depictions of Data*

Activity: Correlations and Scatterplots & other graphs

**T-tests & ANOVA worksheet due.**

Key terms/concepts:

Correlation  
Pearson's R

*Thursday, July 16* – Causality and Causal Inference

**Quiz: Reliability and Correlations**

Readings: K & W, Ch. 3

Mahoney, James. 2008. "Toward a Unified Theory of Causality," *Comparative Political Studies* 41(4/5), pp. 412-436.

Key terms/concepts and methods:

- Necessary and/or sufficient causes
- Spurious
- Antecedent and intervening causes
- Conditional probability: INUS and SUIN

Week 4

*Monday, July 20* – **Midterm**

*Tuesday, July 21* – Causality, *Experiments and control*

Readings: K & W, Ch. 4

Recommended readings: Pallant, Ch. 12. Babbie, Earl. 2007. *The Practice of Social Research*, 12<sup>th</sup> Ed, Ch. 15 "The Elaboration Model"

Activity: control tables\*

Key terms/concepts

- Control
- Elaboration or specification
- Spurious relationships

*Wednesday, July 22* – Case/Historical and Comparative Research

TBA

*Thursday, July 23* – *Introduction to Regression*

Reading: K & W, Ch. 8

Activity: Bivariate regression

Key Terms/Concepts:

- Ordinary Least Squares Regression
- B-coefficient
- Statistical significance
- R-squared

Week 5

*Monday, July 27*– Multiple Regression

Reading: K & W, Ch. 9

**Quiz: Multiple Regression (at end of class)**

Key Terms/Concepts:

- Standardized B-coefficient (Beta)
- Multicollinearity
- How to handle nominal independent variables; creating "dummy" variables
- Interpreting dummy variables

*Tuesday, July 28* – Dummies and Testing Hypotheses with Regression

Reading: K & W, Ch. 10  
Regression Introduction Worksheet Due.

*Wednesday, July 30* – Regression Diagnostics  
Reading: K & W, Ch. 10  
Activity: Diagnostics and Interaction tools

*Thursday, July 31* – Unpacking existing research  
Activity: Unpacking existing research

- Schlozman, Kay Lehman, Nancy Burns, Sidney Verba and Jesse Donahue. 1995. “Gender and Citizen Participation: Is There a Different Voice?” *American Journal of Political Science* 39 (2-May): 267-293. PLUS ONE OF THE FOLLOWING:  
Golden, Miriam. 1992. “The Politics of Job Loss,” *American Journal of Political Science* 36(2-May): 408-30.  
Wilson, J. Matthew and Michael Lusztig. 2004. “The Spouse in the House: What Explains the Marriage Gap in Canada?” *Canadian Journal of Political Science* 37: 979-995.  
Rodrik, Dani, Arvind Subramanian and Francesco Trebbi. “Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development.” *Journal of Economic Growth*, June 2004, Volume 9(2), pp 131-165.

*Week 6*

*Tuesday, August 4* – Logistic Regression  
Reading: K & W, Ch. 11

**Quiz: Logistic Regression (at end of class)**  
**Multivariate Regression Worksheet Due**

Key Terms/Concepts:

- Regression with non-continuous dependent variables
- Logistic Regression
  - Coefficient interpretation
  - Classification table
  - Naïve model

*Wednesday, August 5* – Theory Building and Testing

Reading: K & W, Ch. 2 & 12

Recommended: Huff, Darrell, *How to Lie with Statistics*. (W.W. Norton 1954)

*Thursday, August 6* – TBA

**Regression Analysis Paper Due.**

*Monday, August 10* - Review

**Final Exam?**