

## **POL222H1S: Introduction to Quantitative Reasoning I**

University of Toronto

Winter 2016

Meeting Room: UC 140  
Meeting Time: L0101: Wednesday, 12:00pm–2:00pm  
L5101: Wednesday, 6:00pm–8:00pm

Instructor: Kenichi Ariga  
Email: kenichi.ariga@utoronto.ca  
Office: SS 3047  
Office Hours: Tuesday, 1:00pm–3:00pm

Teaching Assistants: Alejandro Garcia Magos a.garciamagos@mail.utoronto.ca  
Michael Gavin michael.gavin@mail.utoronto.ca  
Thilo Schaefer thilo.schaefer@mail.utoronto.ca

### **Course Description and Objectives**

Quantitative empirical analysis has become increasingly an important part of political science research — and social sciences in general — and public policy debates. The results of statistical analysis on quantitative data, such as opinion polls, election results, frequency of armed conflicts, and incidence of violence, can be seen in many research articles and books on political science and various reports on divergent policy issues published by governments, think tanks, non-profit organizations, and news media. Ability to properly understand and critically assess the results of quantitative statistical analysis has become an invaluable asset for any individuals who are interested in a wide range of political, economic, social, and policy issues.

For political science majors, two consecutive introductory courses on quantitative empirical methodology are offered (POL222 & 232). This course, “POL222 Introduction to Quantitative Reasoning I,” is the first of the sequence and required for all political science majors. By the end of this course, students are expected to have developed a basic understanding of:

1. The characteristics of the scientific studies of political science, especially those employing quantitative empirical analysis, and the inherent difficulties of establishing a causal relationship empirically between the political, economic, social and policy phenomena of interest;
2. Representative empirical research designs, both in experimental and non-experimental (observational) varieties, to investigate the causal relationship of political, economic, social and policy phenomena of interest, and various threats to the validity of different research designs; and
3. Introductory knowledge of the data analysis methods employed in political science research — namely, statistical inference and linear regression — which will be studied more in depth in POL232.

“POL232 Introduction of Quantitative Reasoning II” (Winter 2017) will be the elective follow-up course and continue to introduce important foundations of quantitative empirical methodology. Those who will have found that the topics covered in POL222 are of interest are encouraged to take POL232. Students who choose to take POL232 will be exposed to:

4. Theoretical foundations of *statistical inference*, in which we learn about the characteristics and relationships in a large population from sample observations;
5. *Linear regression* analysis, which is arguably the most widely used method to empirically investigate the relationship between political, economic, social and policy phenomena; and
6. Very basics of statistical computing to conduct simple quantitative analyses of social science data.

The common objective of these classes is to better prepare the students to become educated readers and active participants in social science research and public policy debates.

### **Required Textbook**

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

The textbook is available at the UofT BookStore. All other readings on the syllabus will be made available through the class Blackboard site.

### **Blackboard / Learning Portal**

The class Blackboard site (<https://portal.utoronto.ca/webapps/portal/frameset.jsp>) or the Learning Portal will be the primary means through which class announcements and assignments will be distributed. Readings other than the above textbook, lecture slides, and assignments will be made available in the class Blackboard site as well. Its Discussion Board will be the primary method by which you will ask simple questions about the course materials and get them answered (more on this below).

Please note that important announcements and updates will not be sent to you via email but posted on the class Blackboard site. It will be your responsibility to obtain access to the class Blackboard site and regularly check it. There will be an important update to the class Blackboard site at least once a week.

### **Lecture Slides**

Lecture slides will be made available on the class Blackboard site. Note that some slides, such as graphics and visual effects, may be taken out from the set made available on the class Blackboard site. If substantively important slides are taken out, you will be notified of this during lectures.

## Teaching Assistants

There are three teaching assistants for this course, whose main duties are leading tutorial sessions, grading assignments and other student contacts. There will also be office hours held by teaching assistants during a few weeks before essay assignments are due. When you contact the teaching assistants, please follow the specific guidance set forth later.

## Tutorials

There will be eight tutorial sessions led by teaching assistants during the semester. There will be several different timeslots and you need to sign up for one of them. The schedule of these tutorial timeslots and a sign-up sheet will be made available on the class Blackboard site.

If you cannot attend any one of the tutorial timeslots for a legitimate reason, please send an email to the instructor no later than Monday, January 25th, to make an alternative arrangement for the tutorial participation marks. Official documentation, which verifies the specific reason given, may be required.

## Grading and Evaluation

Your grade of the course will be based on the following materials with the weights given:

- Two Essay Assignments: 55%
    - Best scored essay: 30%
    - Second-best essay: 25%
- |         |         |                |      |                        |
|---------|---------|----------------|------|------------------------|
| Essay 1 | Posted: | Jan. 20 (Wed.) | Due: | Feb. 12 (Fri.), 5:00pm |
| Essay 2 | Posted: | Feb. 24 (Wed.) | Due: | Mar. 24 (Thr.), 5:00pm |

The first essay assignment corresponds to the first part of the class, and the second to the subsequent two parts. In these essay assignments, you will be given an opportunity to practice applying the concepts and methods of quantitative empirical methodology for political science research that you will have learned in the class.

- Three Online Problem Sets: 15% (5% each)
- |               |         |                |      |                        |
|---------------|---------|----------------|------|------------------------|
| Problem Set 1 | Posted: | Jan. 28 (Thr.) | Due: | Feb. 2 (Tue.), 5:00pm  |
| Problem Set 2 | Posted: | Mar. 3 (Thr.)  | Due: | Mar. 8 (Tue.), 5:00pm  |
| Problem Set 3 | Posted: | Mar. 24 (Thr.) | Due: | Mar. 29 (Tue.), 5:00pm |

The three problem sets will assess your understanding of the class materials. All problem sets will be posted and your responses will be submitted through the class Blackboard site. Each problem set has questions that focus on the subjects covered immediately prior to it, but it may also have questions, which are cumulative. By completing these problem sets, you are expected to progressively build knowledge on quantitative empirical methodology in political science.

- Final Test: 20%

There will also be a final test scheduled in the last week of the class. The test will assess your

overall understanding of the class materials. This will be an online take-home test over the class Blackboard site. The test will be posted on Monday, April 4th and due Friday, April 8th at 5:00pm.

➤ Participation Mark: 10%

Tutorials: 9% (Participation in six out of eight tutorial sessions: 1.5% each)

Online Feedback Survey: 1%

Your class participation mark will be based on your participation in the tutorial sessions (more on this below) and the online feedback survey on the class undertaken at the end of the semester. There will be eight tutorial sessions in total, and participation in each of the six out of eight sessions will count toward 1.5% of your final mark. Participation in the online feedback survey will count toward 1% of your final mark.

### **Turnitin**

Normally, students will be required to submit their course essays 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.

Students who wish to not use Turnitin.com may make an alternative arrangement with the instructor. They will need to let the instructor know well before the deadline of the assignment and ask for an alternative way to submit the essay. They will be required to save every version/draft of their essay electronically, and submit all of them at the time they submit the essay. They will also be required to hand in all notes, outlines, and bibliographic research at the same time.

### **Late Penalties and Extension**

All work is late if submitted after the date and time specified as the due date.

➤ Essay Assignments and Final Test

Essay assignments and a take-home final test handed in late will result in a penalty of 10-percentage-point reduction per day (e.g., from 80% to 70%). Submitting an essay or a test within 24 hours from the due date and time will be considered one day late; submitting after 24 hours but before 48 hours will be two days late, and so forth. Essays or a test handed in more than five calendar days late will receive a zero grade.

Extension for the essay assignments and the final test may be granted only when there is a legitimate reason, such as a medical emergency and an accessibility issue, and there is an acceptable official documentation, which verifies the specific reason given, such as the UofT Medical Certificate, the Accessibility Services Letter, and the College Registrar's Letter. Students who know in advance they will need to request an extension for a legitimate reason should contact their tutorial instructor as early as possible before

the deadline. Those who missed the deadline for a legitimate, unforeseeable reason should contact their tutorial instructor as soon as possible and no later than one week after returning to class.

➤ Online Problem Sets

Online problem sets not completed before the due date will receive a zero grade. As you will be able to work on the problem sets online through the Blackboard, whatever you will have completed before the due date and time will be considered your submission and graded.

Those who missed an online problem set for a legitimate reason may be waived for that problem set rather than being given an extension. When you are waived for a problem set, your total mark of the online problem sets (15% of the final mark) will be determined by the rest of the problem sets with each problem set readjusted to weigh equally. An official documentation to verify the specific reason given, such as the UofT Medical Certificate, the Accessibility Services Letter, and the College Registrar's Letter, will be required for this waiver.

➤ Tutorial Participation

Since your tutorial participation mark will be based on your participation in six out of eight sessions, missing up to two tutorial sessions will not affect your final mark. If you will have to miss three or more tutorial sessions for a legitimate reason, the participation in these tutorial sessions may be waived as long as you provide official documentation, such as the UofT Medical Certificate, the Accessibility Services Letter, and the College Registrar's Letter, which verifies the specific reason given. The tutorial participation mark will then be determined by your participation in the rest of the tutorial sessions with each session readjusted to weigh equally.

When you request for an extension or waiver described above, please submit your request to your tutorial instructor (a teaching assistant).

Conflict with other class's assignment/exam schedule, leaving for a non-academic trip, or vacation is not an acceptable excuse to miss the assignments or request an extension.

Computer-related problems will not be an acceptable excuse for submitting your work late. For this reason, I strongly suggest you avoid a last-minute completion or submission of assignments. I also suggest you frequently take a backup of the electronic files of your draft essay in an electronic storage other than your computer.<sup>1</sup>

To ensure fairness, this policy will be strictly enforced.

---

<sup>1</sup> For example, you may send your draft to your email address. Then your draft file will be stored in your mailbox of the UofT server.

## **Grade Appeals**

Grade appeals must be received within two weeks from when the grade is assigned. Before making a formal grade appeal, you are required to raise your questions to and discuss with your grader (one of the teaching assistants). If you still believe the grade you received is not appropriate after discussing with the grader, you may make an appeal to the instructor. When you make an appeal, you are required to submit a documentation substantiating why you believe your grade is not appropriate. Once the grade appeal is received, your assignment will be re-graded with fresh eyes by another teaching assistant who did not give your original mark. Please note that the re-graded mark may go up or down from the original mark. The new mark will be your final mark whether it goes up or down from the original.

## **Outside Class Communication Policy**

The large size of this class makes it necessary to maintain the following policy with respect to outside-class communication with the instructor and teaching assistants. Please follow the policy specified below when you contact the instructor or teaching assistants outside class.

### **1. Office Hours**

- You are welcome to visit during the instructor's office hours, which will be held during the time and date specified at the beginning of the syllabus, if you have any questions on the class materials.
- There will also be office hours held by teaching assistants. Specific schedules of the teaching assistants' office hours will be posted on the class Blackboard site.

### **2. Discussion Board**

- We will also use the Discussion Board on the class Blackboard site as the main medium through which you can ask relatively simple questions regarding class materials and get answers. Given the nature of the course materials and a large size of the class, someone else may have the same question as yours and s/he would benefit from your posting the question and getting an answer through the Discussion Board.
- You are also encouraged to post an answer to the questions posted by your classmates on the Discussion Board so that we can maintain a mutually-supporting learning community from which all of you will benefit.
- Teaching assistants or the instructor will regularly check the Discussion Board (once on Mondays, Wednesdays, and Fridays) and answer questions, which have not been adequately addressed by peers.
- While relatively simple questions may be posted on the class Discussion Board, you are best advised to visit the office hours or tutorial sessions for complex questions or those that would require an extensive treatment.

### **3. Email Communications**

- If you have any questions of personal nature (e.g., deadline extension for a legitimate reason), you may email the instructor or teaching assistants and expect a response within two working days. Please start the subject heading of your email with "POL222:..."

- The instructor and teaching assistants will not answer, however, any questions over email that are of substantive nature concerning the class materials. You will need to post those questions on the Discussion Board or visit office hours or tutorial sessions to get them answered.

#### **4. Essay Assignments**

- You may post general questions on the essay assignments on the class Discussion Board. If you have a question specific to your essay idea that is not appropriate to post on the Discussion Board, you are best advised to visit office hours of the instructor or teaching assistants. However, if you have a schedule conflict with all available office hours, you may send an email to the teaching assistant specifically assigned for this task to ask for a feedback on your individual-specific question (This is the only exception to the email communications policy described above). Please consider visiting office hours of the instructor or teaching assistants first, as the feedback of this kind may be best communicated in person. You should consider seeking advice via emails only when your schedule does not allow visiting the available office hours.
- Please note that neither the instructor nor teaching assistants will be able to review your draft essay when you seek advice.

#### **5. Non-response**

- As stated above, the instructor and teaching assistants will not respond to questions of substantive nature over emails. Please make sure that you follow the policy set up above to post these questions on the Discussion Board.
- Please note that the instructor and teaching assistants will not be able to answer email or Discussion Board questions during weekends.
- In the case of your questions of substantive nature on the Discussion Board or those of personal nature over email not answered within two working days (excluding weekends), send the instructor or a teaching assistant an email to let him know they have not been addressed. Please include “POL222: Unanswered Question” in the subject heading of your email.

#### **Accessibility**

The University of Toronto is committed to accessibility. If you require accommodation for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services at [www.accessibility.utoronto.ca](http://www.accessibility.utoronto.ca) or (416) 978-8060 as soon as possible.

#### **Academic Integrity**

Academic integrity is fundamental to learning and scholarship at the University of Toronto. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the U of T degree that you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves.

You are expected to be familiar with the Code of Behaviour on Academic Matters, available

at <http://www.artsci.utoronto.ca/osai/students>, which is the rule book for academic behaviour at the U of T. Potential offenses include, but are not limited to, plagiarism, cheating on tests and exams, fraudulent medical documentation and improper collaboration on marked work.

For specific examples of the potential academic offences, please read *What is Academic Misconduct* (<http://www.artsci.utoronto.ca/osai/The-rules/what-is-academic-misconduct>) at the Office of Student Academic Integrity's website. Please note that, as stated in this site, "(n)ot knowing the University's expectations is not an excuse." Under the Code, "the offense shall likewise be deemed to have been committed if the person ought reasonably to have known." (*Code of Behaviour on Academic Matters*, web version, p.2)

For further clarification and information on plagiarism, please see *Writing at the University of Toronto* (<http://www.writing.utoronto.ca/advice/using-sources/>).

The University of Toronto treats cases of academic misconduct very seriously. All suspected cases of academic dishonesty will be investigated following the procedures outlined in the Code. The consequences for academic misconduct can be severe, including a failure in the course and a notation on your transcript. If you have any questions about what is or is not permitted in this course, do not hesitate to contact the instructor.

### **Class Schedule and Readings**

Class schedule and the assigned readings for each lecture are specified below. During the semester, the lecture schedule may be adjusted according to the actual progress of the class. If this is the case, the due dates of assignments may also be modified. In addition, some assigned readings may be replaced by others. If these are to happen, you will be given an advance notice during lectures.

**Readings** listed for each class are required unless explicitly stated that they are only recommended. These readings include textbook chapters and actual empirical research articles published in academic journals. **The latter articles** are assigned to illustrate the variety of empirical research designs and data analysis methods introduced in the lecture. For these readings, skip the technical details but focus on the big picture of how the authors designed their empirical research to answer the causal question of their interest.

## **PART I. SCIENTIFIC STUDY OF POLITICS AND CAUSAL THEORY**

### **Jan. 13. Introduction: What Will We Learn and Why?**

#### **Basics of Quantitative Empirical Political Science Research**

### **Jan. 20. How Do We Study Politics Scientifically?**

- Kellstedt and Whitten, Chapter 1
- *Recommended:* Kellstedt and Whitten, Chapter 2.
- ❖ **Essay 1 Posted**



### **Jan. 27. How Do We Evaluate Causal Relationship?**

- Kellstedt and Whitten, Chapter 3.
- ❖ Problem Set 1 --- Posted: Jan. 28 (Thr.), Due: Feb. 2 (Tue.), 5:00pm
- ❖ Tutorial Session 1: Causal Relationship

## **PART II. EXPERIMENTAL RESEARCH**

### **Feb. 3. Laboratory Experiments**

- Kellstedt and Whitten, Chapter 4.1-4.2.
- Gina M. Garramone, Charles K. Atkin, Bruce E. Pinkleton, and Richard T. Cole. 1990. "Effects of Negative Political Advertising on the Political Process." *Journal of Broadcasting & Electronic Media* 34(3).
- Stephen Ansolabehere, Shanto Iyengar, Adam Simon, and Nicholas Valentino. 1994. "Does Attack Advertising Demobilize the Electorate?" *American Political Science Review* 88(4).
- ❖ Tutorial Session 2: Peer Discussion on Essay 1

### **Feb. 10. Extra Office Hours for Essay 1 During Lecture Hours**

- ❖ Essay 1 Due (Feb. 12, Fri., 5:00pm)

### **Feb. 17. Reading Week, No Class**

### **Feb. 24. Field Experiments**

- Kellstedt and Whitten, Chapter 4.1-4.2. (Reread)
- Alan S. Gerber and Donald P. Green. 2000. "The Effects of Canvassing, Direct Mail, and Telephone Contact on Voter Turnout: A Field Experiment." *American Political Science Review* 94.
- Benjamin A. Olken. 2010. "Direct Democracy and Local Public Goods: Evidence from a Field Experiment in Indonesia." *American Political Science Review* 104(2).
- Leonard Wantchekon. 2003. "Clientelism and Voting Behavior: Evidence from a Field Experiment in Benin." *World Politics* 55.
- ❖ Tutorial Session 3: Experiments 1
- ❖ Essay 2 Posted

### **Mar. 2. Survey Experiments**

- Kellstedt and Whitten, Chapter 4.1-4.2. (Reread)
- Daniel Corstange and Nikolay Marinov. 2012. "Taking Sides in Other People's Elections: The Polarizing Effect of Foreign Intervention." *American Journal of Political Science* 56(3).
- Michael C. Horowitz and Matthew S. Levendusky. 2011. "Drafting Support for War: Conscription and Mass Support for Warfare." *Journal of Politics* 73(2).
- Ezequiel Gonzales Ocantos, Chad Kiewiet de Jonge, and David W. Nickerson. 2011. "Vote Buying and Social Desirability Bias: Experimental Evidence from Nicaragua." *American Journal of Political Science* 56(1).
- ❖ Problem Set 2 --- Posted: Mar. 3 (Thr.), Due: Mar. 8 (Tue.), 5:00pm
- ❖ Tutorial Session 4: Experiments 2

## PART III. OBSERVATIONAL RESEARCH

### Mar. 9. Basic Logic of Observational Studies

- Kellstedt and Whitten, Chapters 4.3-4.4.
- Andrew Gelman and Gary King. 1990. "Estimating Incumbency Advantage without Bias." *American Journal of Political Science* 34 (4) — Introduction and Sections 1, 5 (pp.1150-1152 only), 6 and 8 only.
- Menaldo, Victor. "The Middle East and North Africa's Resilient Monarchs." *Journal of Politics* 74(3).
- ❖ Tutorial Session 5: Observational Studies

### Mar. 16. A Few More Topics on Observational Studies

#### Matching & Natural Experiments

- Kellstedt and Whitten, Chapters 4.3-4.4. (Reread)
- James H. Fowler. 2008. "The Colbert Bump in Campaign Donations: More Truthful than Truthy." *PS: Political Science and Politics*.
- Menaldo, Victor. "The Middle East and North Africa's Resilient Monarchs." *Journal of Politics* 74 (3). (Reread)
- Ansolabehere, Stephen and James M. Snyder, Jr. 2004. "Using Term Limits to Estimate Incumbency Advantages When Officeholders Retire Strategically." *Legislative Studies Quarterly* 29 (4).
- ❖ Tutorial Session 6: Peer Discussion on Essay 2

### Mar. 23. How Do We Analyze Relationships Among Variables?

#### Linear Regression

- Kellstedt and Whitten, Chapter 8.1-8.3, 9.1-9.4.
- ❖ Tutorial Session 7: Linear Regression
- ❖ Problem Set 3 --- Posted: Mar. 24 (Thr.), Due: Mar. 29 (Tue.), 5:00pm
- ❖ Essay 2 Due (Mar. 24, Thr., 5:00pm)

### Mar. 30. Wrap-Up

- Readings TBA
- ❖ Tutorial Session 8: Review Session

### Apr. 6. Final Test Week

- ❖ Take-home Final Test --- Posted: Apr. 4 (Mon.), Due: Apr. 8 (Fri.), 5:00pm

### Syllabus Change Policy

The policies and contents of this syllabus may be changed by the instructor with advanced notice. If any, such a change will be announced during lectures.