POL222H1F: Introduction to Quantitative Reasoning I
University of Toronto
Fall 2019

Meeting Room: L0101: SS 2135
L0201: SS 2135
L5101: KP 108

Meeting Time: L0101: Monday, 2:00pm-4:00pm
L0201: Thursday, 10:00am-12:00pm
L5101: Wednesday, 6:00pm-8:00pm

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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 data 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 students, 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 specialists and 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 to Quantitative Reasoning II” in the Winter semester will be the follow-up course and continue to introduce important foundations of quantitative empirical methodology. POL232 is required for political science specialists and elective for majors. Students who will 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 one of the most basic yet widely used methods 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**


The textbook is available at the UofT BookStore. All other readings on the syllabus will be made available on Quercus.

**Quercus**

Quercus ([https://q.utoronto.ca/](https://q.utoronto.ca/)) is 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 on the class Quercus site. Discussion Board on the class Quercus site 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 all important announcements and updates will be posted on the class Quercus site. It will be your responsibility to obtain access to Quercus and regularly check it. There will be an important update to the class Quercus site at least once a week.

¹ You may use the 2nd edition, too.
Lecture Slides

Lecture slides will be made available on the class Quercus site. Note that some slides, such as graphics and visual effects, may be taken out from the set made available on Quercus. If substantively important slides are taken out, you will be notified of this during lectures. Occasionally, there will be in-class problems/exercises during lectures. They are intended to be used only in the lectures and will not be included in the slides posted on the class Quercus site.

Teaching Assistants

There are five 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 couple of weeks before essay assignments are due.

Normally, the teaching assistant for your tutorial session will be the grader of your essay. All requests for extension or waiver regarding required assignments must be made to the teaching assistant who lead your tutorial session.

Tutorials

There will be tutorial sessions led by teaching assistants starting in Week 3 of the semester. Most of you have already registered for a tutorial section (e.g., TUT0101) on ACORN. If you have not, you need to do so no later than Wednesday, September 18th.

If you cannot attend any one of the available tutorial sections for a legitimate reason, you may make an alternative arrangement for the tutorial participation marks, as long as the reason is legitimate and official documentation, which verifies the specific reason given, is provided. To make this arrangement, register for a tutorial section, which you cannot attend but still available on ACORN, and then contact a teaching assistant who leads this tutorial section, no later than Wednesday, September 18th. You may find the information about tutorial instructors for each tutorial section on Quercus.

Grading and Evaluation

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

1. Two Essay Assignments: 55%
   
   Essay 1  25%  Due:  Oct. 11th (Fri.)
   Essay 2  30%  Due:  Nov. 22nd (Fri.)

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.

2. Final Exam: 30%

There will be a closed-book, closed-note final exam. The exam will take place during the final examination period in December administered by the Faculty of Arts and Science. Its date and place will be determined and announced by the Faculty. A sample final exam will be posted
on the class Quercus site later in the semester.

3. Participation Mark: 15%

Your class participation mark will be based on the following four items:

(1) iClicker Participation during Lectures: 6%

Your iClicker participation during the lectures will count toward 6% of your final mark. I plan to include iClicker opportunities in nine lectures from the second week of the semester (Sep. 12th [L0201], 16th [L0101], and 18th [L5101]) until the penultimate week. Your final mark on iClicker participation will be based on your participation in iClicker opportunities in six out of nine lectures, with each lecture weighted equally.

It is your responsibility to bring your iClicker to each lecture. As this is the participation mark in iClicker opportunities, simply attending the lecture will not count toward your iClicker participation mark. If you forget an iClicker, you will not earn an iClicker participation mark in that lecture. As you are expected to attend all lectures and participate in all iClicker opportunities and you may forget an iClicker only rarely (presumably in less than three lectures), failure to bring an iClicker with you will not be considered to waive or make up your iClicker participation mark.

There may be rare occasions in which your iClicker did not function during the lecture or your iClicker response was not recorded for some technical reasons. The number of lectures that is the basis of your iClicker participation mark is set to be six out of nine lectures in order to accommodate missing a participation mark due to such rare troubles. As you are expected to attend all lectures and participate in all iClicker opportunities and these technical problems are expected to happen only rarely (presumably in less than three lectures), these rare troubles will not be considered to waive or make up your iClicker participation mark.

Your iClicker participation mark in each lecture will be posted on the Grades section of the class Quercus site regularly. It is your responsibility to check the mark regularly and confirm if your iClicker response was recorded properly.

(2) Online Review Problem Sets: 3%

There will be six online review problem sets to be posted on the class Quercus site. By completing these problem sets, you will review important points covered in lectures and gradually build your knowledge on quantitative empirical methods. Note that the final exam will include multiple-choice and true/false questions similar to those in these problem sets. Completing the problem sets will also help you prepare for the final exam.

Each problem set will consist of five multiple-choice or true/false questions. Completing problem sets will be considered as part of class participation, and its mark will be determined as detailed below.

After you complete and submit each problem set, you will be immediately given your score, correct answers, and feedback. You can submit the same problem set multiple times before its due date. Each of the five questions is worth 20 points and you need to achieve 60 points
or more (i.e., three or more correct answers) before the deadline to earn a full participation mark for each problem set. If your score is 20 or 40 points (only one or two correct answers), you will earn a half credit for that problem set. If your score is zero, you will earn no credit.

Please note that the number of days for which a problem set is available may vary. The due date will be clearly specified for each problem set posted on the class Quercus site. It is your responsibility to check the due date for each problem set.

As there will be six problem sets and each problem set is weighted equally, a full participation mark in each problem set will be equivalent to 0.5% of your final mark.

The total number of problem sets may change based on the actual progress of the class. If this happens, participation in problem sets will still count toward 3% of your final mark with each set weighted equally.

(3) Tutorial Participation:  4%

There will be five tutorial sessions during the semester. Your tutorial participation mark (4% of your final mark) will be determined by your participation in four out of the five tutorial sessions, with each tutorial session weighted equally.

The total number of tutorial sessions may change due to the actual progress of the class. If this happens, the number of tutorial sessions that will be the basis of your tutorial participation mark will be the new total number of tutorial sessions minus one.

A review guide for tutorial exercises will be posted on the class Quercus site afterwards (except for the tutorials for peer review of essay assignments), which you may use to review the tutorial exercise questions (note that this will be a review “guide.” It may not necessarily contain answers to the exercise questions).

By completing tutorial exercises and participating in the tutorial discussions, you are expected to deepen your understanding of the concepts and methods learned in lectures and be prepared to work on the essay assignments. The final exam will also include questions similar to the tutorial exercise questions. Completing tutorial exercises will also help you prepare for the final exam.

(4) Two Online Feedback Surveys:  2% (1% each)

There will be two online feedback surveys on the class through the class Quercus site at the beginning and the end of the semester. Your participation in each of the surveys before its due date counts 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. If you want to make an alternative arrangement, you need to send an email to the teaching assistant who will grade your essay (normally, your tutorial instructor) well before the deadline of the assignment and ask for an alternative way to submit the essay. If you choose an alternative arrangement, you will be required, for example, to save every version/draft of your essay electronically and submit all of them at the time you submit the essay, and 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 due. To ensure fairness, the late-penalty policy specified below will be strictly enforced. Conflict with other class’s assignment/exam schedule, leaving for a non-academic trip, or vacation is not an acceptable reason to miss the assignments or request an extension.

- **Essay Assignments**

  Extension for the essay assignments may be made only when there is a legitimate reason, such as an unforeseeable medical emergency, an accessibility issue, religious observances, and a family emergency, and there is an acceptable official documentation, which verifies the specific reason given, such as the UofT Verification of Student Illness or Injury form, the Accessibility Services Letter, and the College Registrar’s Letter.

  Students who know in advance they will need an extension for a legitimate reason should make a request to the teaching assistant who will grade your essay (normally, your tutorial instructor) via email as early as possible before the deadline. Those who missed the deadline for a legitimate, unforeseeable reason should contact their TA as soon as possible and no later than one week after returning to class. In the request email, don’t forget to include your full name, student number, and tutorial section (e.g., TUT0101).

  Essay assignments handed in late will result in a penalty of 2-percentage-point reduction per day (e.g., from 72% to 70%). Submitting an essay 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.

  Since the Turnitin submission on Quercus is used to submit essay assignments, your submission must be accepted by Turnitin on Quercus before the due date and time. Note that the date and time recorded on Quercus will be your submission date and time. If this is after the deadline even only by one minute, then your submission will be considered late. In other words, completing your paper and start uploading it to the Turnitin submission link on Quercus before the due date and time is not enough. Your upload must be complete before the due date and time.

  Computer-related problems, such as the crash of your computer, a slow Internet connection, and an occasional slow response of the server, will not be considered as an acceptable reason to request for extension or waiver of a late penalty. Also sending your assignment to the instructor and/or the teaching assistants via email will not be considered as a submission. For these reasons, 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.² If you have a UTmail+ account, you have access to 1TB of storage in your OneDrive at the UofT (see https://email.utoronto.ca/students/ for details). You may take a backup in your OneDrive.

- **Online Problem Sets**

Online problem sets not completed before the due date will receive a zero grade. As stated before, the number of days for which a problem set is available may vary. The due date will be clearly specified on each problem set posted on the class Quercus site. It is your responsibility to check the due date for each problem set and complete the assignment before then.

If you cannot complete problem sets by their deadlines for a legitimate reason, the problem set in question may be waived rather than being given an extension, and your participation mark for the problem sets may be determined by the rest of the problem sets with each problem set weighted equally. An official documentation to verify the specific reason given, such as the UofT Verification of Student Illness or Injury form, the Accessibility Services Letter, and the College Registrar’s Letter, will be required for this waiver.

The request for a waiver for problem sets must be made to the teaching assistant who leads your tutorial section via email.

As in the essay assignments, computer-related problems, such as the crash of your computer, a slow Internet connection, and an occasional slow response of the server, will not be considered as an acceptable reason to request for a waiver. I strongly suggest you avoid a last-minute completion or submission of problem sets to avoid the last-minute hassle and technical problems.

- **Tutorial Participation**

Since your tutorial participation mark is based on your participation in four out of five tutorial sessions, missing one tutorial session will not affect your final mark. If you will have to miss two or more tutorial sessions for a legitimate reason, the participation in these sessions may be waived as long as you provide official documentation, such as the UofT Verification of Student Illness or Injury form, 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 weighted equally.

The request for a waiver for tutorial participation must be made to the teaching assistant who leads your tutorial section via email. Please note that the waiver request will not be

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² For example, you may use a cloud storage service, such as DropBox, Google Drive, iCloud, and OneDrive. Or you may send your draft to your UofT email address so that your draft file will be stored in your mailbox of the UofT server.
considered until you miss a tutorial session twice, as missing one tutorial session will not affect your final mark.

- **iClicker Participation**

Since your iClicker participation mark is based on your participation in six out of nine lectures with iClicker opportunities, missing up to three lectures with iClicker opportunities will not affect your final mark. As stated in Grading and Evaluation (p.4), however, failure to bring iClicker with you and occasional technical problems will not be considered to waive or make up your iClicker participation mark, since the number of lectures with iClicker opportunities that will be the basis of the iClicker participation mark is set to be less than the total number of lectures with iClicker opportunities in order to accommodate missing a mark for such problems.

If you will have to miss four or more lectures with iClicker opportunities for a legitimate reason, your iClicker participation in these lectures may be waived as long as you provide official documentation, such as the UofT Verification of Student Illness or Injury form, the Accessibility Services Letter, and the College Registrar’s Letter, which verifies the specific reason given. Your iClicker participation mark will then be determined by your participation in the rest of the lectures with iClicker opportunities with each session weighted equally.

The request for a waiver for iClicker participation must also be made to the teaching assistant who leads your tutorial section via email. Please note that the waiver request will not be considered until you miss iClicker participation mark four times, as missing up to three lectures with iClicker opportunities will not affect your final mark.

**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, who is normally your tutorial instructor. 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 brief 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**

A 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 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 before the essay assignments’ due dates. Specific schedules of the teaching assistants’ office hours will be posted on the class Quercus site.

2. Discussion Board on Quercus
- We will also use the Discussion Board on the class Quercus 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, others may have the same question as yours and they 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.
- Questions posted on the Discussion Board will be normally addressed within 24 hours except on weekends by one of the teaching assistants in charge of answering questions posted on the Discussion Board on that day.
- While relatively simple questions may be posted on the Discussion Board of the class Quercus site, you are best advised to visit 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., grade appeal, deadline extension for a legitimate reason), you may email teaching assistants or the instructor and expect a response within two working days. Please start the subject heading of your email with “POL222:...”
- All requests for extension or waiver regarding required assignments must be made to the teaching assistant who leads your tutorial session. Please include your full name, student number, and tutorial section (e.g., TUT0101) in your email on these requests.
- If your questions are of substantive nature, please post these questions on the Discussions Board of the class Quercus site or visit office hours or tutorial sessions to get them answered.
- If you send teaching assistants or the instructor a question of substantive nature, you will receive a reply to ask you to post your question on the Discussion Board of the class Quercus site. You will get your questions addressed more quickly if you post your questions directly on the Discussion Board of the class Quercus site, as the one on duty on that day may not be the teaching assistant to whom you would send your email.

4. Essay Assignments
- You may post relatively simple questions on the essay assignments on the Discussion Board of the class Quercus site. If you have detailed questions on your essay idea, you are best advised to visit office hours of teaching assistants or the instructor. However, if you have a schedule conflict with all available office hours, you may send an email to the teaching assistant who is your tutorial instructor and grader. 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
from your tutorial instructor via emails only when your schedule does not allow visiting the available office hours. Please note that the advice on your essay assignments via email may be limited compared to that may be communicated in person during 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

- Please note that the instructor and teaching assistants will not be able to answer email or questions posted on the Discussion Board of the class Quercus site during weekends.
- In the case of your questions of substantive nature on the Discussion Board of the class Quercus site 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 them know your questions 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, accessibility.services@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 https://www.artsci.utoronto.ca/current/academic-advising-and-support/student-academic-integrity, which is the rule book for academic behaviour at the U of T. The website cited above lists nine categories of academic offences defined in the Code. Potential offences include, but are not limited to, plagiarism, cheating on tests and exams, misuse of iClickers (e.g., using someone else’s iClicker during lectures to earn a participation credit for that student), fraudulent medical documentation and improper collaboration on marked work.

For specific examples of the potential academic offences, please read The Scope of Academic Integrity (https://www.academicintegrity.utoronto.ca/perils-and-pitfalls/). Please note that, in general, not knowing the University’s expectations cannot be 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 information on plagiarism, visit the pages available from the links listed at http://advice.writing.utoronto.ca/using-sources/. This list is part of the Advice on Academic Writing at the University of Toronto (http://advice.writing.utoronto.ca/). You may also find other resources available on this website helpful.
The University of Toronto treats cases of academic misconduct very seriously. All suspected cases of academic dishonesty will be examined 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 or teaching assistants.

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, and there may be additional readings. If these are to happen, you will be given an advance notice at the class Quercus site.

Readings listed for each class are required unless explicitly stated that they are recommended. In addition to the chapters of Kellstedt and Whitten, the readings include actual empirical research articles published in academic journals, which will be used as examples in the lectures to illustrate the variety of quantitative empirical research designs and data analysis methods. When you read these articles, 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

Sep. 5 (L0201), 9 (L0101) & 11 (L5101)
What Will We Learn and Why?

Basics of Quantitative Empirical Political Science Research

Sep. 12 (L0201), 16 (L0101) & 18 (L5101)
How Do We Study Politics Scientifically?
- Kellstedt and Whitten, Chapter 1
- Recommended: Kellstedt and Whitten, Chapter 2.

Sep. 19 (L0201), 23 (L0101) & 25 (L5101)
How Do We Evaluate Causal Relationship?
- Kellstedt and Whitten, Chapter 3.

- Tutorial Session 1: Causal Relationship (Sep. 19-30)
- Online Review Problem Set 1 Due (Sep. 27, Fri, 11:59pm)
PART II. EXPERIMENTAL RESEARCH

Sep. 26 (L0201), 30 (L0101) & Oct 2 (L5101)
Basic Logic of Experimental Research & Laboratory Experiments
- Kellstedt and Whitten, Chapter 4.1-4.2.

- Tutorial Session 2: Peer Discussion on Essay 1 (Sep. 26 - Oct. 7)
- Online Review Problem Set 2 Due (Oct. 4, Fri, 11:59pm)

Oct. 3 (L0201), 7 (L0101) & 16 (L5101)
Experimental Research in Real World Setting: Field Experiments
- Kellstedt and Whitten, Chapter 4.1-4.2. (Reread)

Oct. 9 (L5101) & 10 (L0201)
Essay 1 Consultation During Lecture Hours
- Students in all sections (L0101, L0201, and L5101) are welcome.

- Essay 1 Due (Oct. 11, Fri, 11:59pm)

Oct. 14 (L0101)
Thanksgiving Holiday

Oct. 16 (L5101)
See “Experimental Research in Real World Setting: Field Experiments” above.

Oct. 17 (L0201), 21 (L0101) & 23 (L5101)
Enhancing External Validity of Experimental Research: Survey Experiments
- Kellstedt and Whitten, Chapter 4.1-4.2. (Reread)

3 There are Thanksgiving holiday (Oct. 14) and Essay 1 Consultations (Oct. 9 and 10) between the L0101 lecture on Oct. 7 and the L5101 lecture on Oct. 16.

**Tutorial Session 3: Experimental Research (Oct. 17 - 28)**

**Online Review Problem Set 3 Due (Oct. 25, Fri, 11:59pm)**

**PART III. OBSERVATIONAL RESEARCH**

Oct. 24 (L0201), 28 (L0101) & 30 (L5101)

**Basic Logic of Observational Research**

- Kellstedt and Whitten,
  - 3rd Edition: Chapter 4.3 and 4.5, or
  - 2nd Edition: Chapter 4.3-4.4.


- **Recommended:** 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.


**Online Review Problem Set 4 Due (Nov. 1, Fri, 11:59pm)**

Oct. 31 (L0201), Nov. 11 (L0101) & 13 (L5101) (Fall Reading Week: Nov. 4 - 8)

**How Can We Examine the Relationship Between Variables? Linear Regression**

- **Recommended:** Kellstedt and Whitten,
  - 3rd Edition: Chapter 9.1-9.2, 10.1-10.2, 10.4, 10.8, 10.10, or

- **Tutorial Session 4: Peer Discussion on Essay 2 (Nov. 11 – Nov. 18)**

**Online Review Problem Set 5 Due (Nov. 15, Fri, 11:59pm)**

Nov. 14 (L0201), 18 (L0101) & 20 (L5101)

**Alternative Methods & Validity of Observational Research**


❖ Essay 2 Due (Nov. 22, Fri., 11:59pm)

**Nov. 21 (L0201), 25 (L5101) & 27 (L0201)**

**How Can We Measure Variable of Our Interest? Measurement & Statistical Inference**

➢ Kellstedt and Whitten,
  ○ 3rd Edition: Chapter 5 and 7.1 or
  ○ 2nd Edition: Chapter 5.1-5.3 and 6.1.


❖ Tutorial Session 5: Observational Research (Nov. 25 – Dec. 2)

**Nov. 28 (L0201), Dec. 2 (L0101) & 4 (L5101)**

**Wrap-Up**

❖ Online Review Problem Set 6 Due (Dec. 4, Wed, 11:59pm)

**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 and on the class Quercus site.