POL232H1S: Introduction to Quantitative Reasoning II
University of Toronto
Winter 2019

Meeting Room:	SS 561
Lecture Time:	L0101: Monday, 2:00-4:00pm
	L0201: Thursday, 10:00am-12:00pm
	L5101: Wednesday, 6:00-8:00pm
Tutorial Time:	L0101: Monday, 1:00-2:00pm or 4:00-5:00pm
	L0201: Thursday, 9:00-10:00am or 12:00-1:00pm
	L5101: Wednesday, 5:00-6:00pm or 8:00-9:00pm
Instructor:	Kenichi Ariga
Email:	kenichi.ariga@utoronto.ca
Office:	SS 3047
Office Hours:	Wednesday, 2:30pm-4:30pm

Teaching Assistants:	L0101: Matt Wilder	matt.wilder@mail.utoronto.ca
	L0201: Eve Bourgeois	eve.bourgeois @mail.utoronto.ca
	L5101: Md. Mujahedul Islam	mujahed.islam @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 students, two consecutive introductory courses on quantitative empirical methodology are offered (POL222 & 232). This course, "POL232 Introduction to Quantitative Reasoning II," is the second course and continues to introduce important foundations of quantitative empirical methodology. POL232 is required for political science specialists and elective for majors.

Students taking this course will learn:

1. Theoretical foundations of *statistical inference* to learn about the characteristics and relationships in a large population from sample observations;

2. *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

3. Very basics of statistical computing to conduct simple quantitative analyses of social science data.

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

Required Textbooks

Paul M. Kellstedt and Guy D. Whitten, *The Fundamentals of Political Science Research*, *3rd Edition* (Cambridge University Press, 2018).[1]

Phil H. Pollock III and Barry C. Edwards, *An R Companion to Political Analysis*, 2nd Edition (CQ Press, 2017).

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

Computer Software

Quantitative social science research requires the use of computer and computer software. In this class, you will learn an elementary use of a software package called R, which is free to download at http://www.r-project.org and is getting popular among many social scientists.

Quercus

Quercus (https://q.utoronto.ca/) is the primary means through which class announcements and assignments will be distributed. Readings other than the above textbooks, lecture slides, and assignments will be made available on the class Quercus site. Discussions section on the class Quercus site will be the primary method by which you will ask simple questions about the course materials and get them addressed (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.

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 is a teaching assistant for each lecture section (Matt Wilder for L0101, Eve Bourgeois

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[1] You may use the 2nd edition, too.

for L0201, and Mujahed Islam for L5101), whose main duties are leading tutorial sessions, grading assignments and other student contacts. There will also be office hours held by the teaching assistants during a couple of weeks before essay assignments are due. When you contact the teaching assistants, please follow the specific guidance set forth later.

Tutorials

There will be weekly tutorial sessions led by teaching assistants starting in Week 3 of the semester. Tutorials are scheduled before and after each week's lecture at SS 561. Specific schedules may be found at the beginning of the syllabus. Normally, weekly homework assignments are due at the beginning of the tutorial sessions.

A sign-up sheet for tutorial time slots for each lecture section will be made available on the class Quercus site. You need to sign up for a tutorial time slot at the beginning of the semester.

The first tutorial meeting will be Monday, Jan. 21st for L0101, Wednesday, Jan. 23rd for L5101, and Thursday, Jan. 24th for L0201.

If you cannot attend any one of the tutorial time slots for a legitimate reason, you need to send an email to your teaching assistant (Matt Wilder for L0101, Eve Bourgeois for L0201, and Mujahed Islam for L5101) to make an alternative arrangement for the tutorial participation marks and the submission of homework assignments at the beginning of the semester. Official documentation, which verifies the specific reason given, will be required. Unless you make an alternative arrangement, you will lose participation mark for homework assignments and tutorial sessions.

Note that a teaching assistant for your lecture section will be a grader of your empirical research paper assignments.

Grading and Evaluation

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

1. Empirical Research Paper Assignments

Midterm Paper:	26%	(Due: Friday, Feb. 15th)
Final Paper:	30%	(Due: Friday, Apr. 5th)

By the end of the semester, you will write an empirical research paper based on a linear regression analysis using R and a dataset provided in class, which addresses the causal theory of your interest.

As you gradually develop your empirical research project throughout the semester, you will be required to submit an intermediate product of your research in the middle of the semester ("Midterm Paper") and a full-length research paper at the end of the semester ("Final Paper").

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 April 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: 14%

Your class participation marks will be based on the following five subcomponents.

(1) iClicker Participation during Lectures: 4%

Your iClicker participation during the lectures will count toward 4% of your final mark. I plan to include iClicker opportunities in ten lectures from Week 2 until Week 11. Your final mark on iClicker participation will be based on your participation in iClicker opportunities in eight out of ten lectures, with each lecture weighted equally. The total number of lectures with iClicker opportunities may change due to the actual progress of the class. If this happens, the number of lectures that will be the basis of your iClicker participation mark will be the new total number of lectures with iClicker opportunities minus two.

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 two 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 the total number of lectures with iClicker opportunities minus two 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 two lectures), these technical troubles will not be considered to waive or make up your iClicker participation mark.

(2) Computer Laboratory Session Participation Mark: 2%

Four laboratory sessions are scheduled during lectures from Week 2 until Week 5. Your computer laboratory session participation mark (2% of your final mark) will be determined by your participation in all four computer laboratory sessions, with each laboratory session weighted equally. At the end of each laboratory session, you will be required to submit the work you conducted during the session. If it is determined that you gave it a reasonable effort to complete the required work, you will be given full credit for that laboratory session. If it is determined that your work is not sufficient, however, you will receive half the credit for that laboratory session.

(3) Tutorial Participation: 3.5%

There will be nine weekly tutorial sessions from Week 3 until Week 11. Your tutorial participation mark (3.5% of your final mark) will be determined by your participation in seven out of the nine 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 two.

(4) Weekly Homework Assignments: 3.5%

Completing weekly homework assignments is considered as participation in class as the number of correct answers will not be counted but the extent to which you gave effort to complete the assignments will be evaluated. Accordingly, all homework assignments will be graded on a pass/fail basis. If it is determined that you gave it a reasonable effort to answer all the questions, you will be given full credit for that homework, regardless of the number of correct answers. If you do not show a reasonable amount of effort, however, your homework will be given a fail or a marginal pass. You will receive no credit in the former case and will receive half the credit in the latter.

There will be nine homework assignments. Your final mark on homework assignments (3.5% of the total mark) will be determined by your completion of seven out of the nine homework assignments by their due, which is normally the beginning of your weekly tutorial session, with each homework assignment weighted equally. The total number of homework assignments may change due to the actual progress of the course. If this happens, the number of homework assignments that will be the basis of your final mark will be the new total number of homework assignments minus two.

Completing all homework assignments is essential to understanding the class materials, completing the empirical research paper assignments appropriately, and performing well in the final exam.

(5) Feedback Survey: 1%

There will be an online feedback survey on the class through the class Quercus site at the end of the semester. Your participation in the 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. If you want to make an alternative arrangement, you need to send an email to the teaching assistant

in charge of grading your empirical research paper assignment at least one week 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.

➢ Empirical Research Paper Assignments

Extension for the empirical research paper 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 contact the teaching assistant in charge of grading your assignments as early as possible before the deadline. Those who missed the deadline for a legitimate, unforeseeable reason should contact the teaching assistant as soon as possible and no later than one week after returning to class.

Empirical research paper assignments handed in late will result in <u>a penalty of 2-percentage-point reduction per day</u> (e.g., from 72% to 70%). Submitting the assignments 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 the empirical research paper 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 paper in an electronic storage other than your

computer.[2]

➢ Weekly Homework Assignments

Weekly homework assignments not completed by their respective due will receive a zero grade as they are considered as participation marks.

Since your participation mark on these homework assignments is based on your completion of seven out of nine homework assignments, missing up to two homework assignments will not affect your final mark.

If you cannot complete three or more homework assignments by their due for a legitimate reason, the homework assignment in question will be waived rather than being given an extension, and your participation mark for the homework assignments will be determined by the rest of the homework assignments minus two with each readjusted to weigh 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 of a waiver for the homework assignments must be made to the teaching assistant for your lecture section. The waiver request will not be considered until you miss a weekly homework assignment three times, as missing two homework assignments will not affect your final mark.

➢ Tutorial Participation

Since your tutorial participation mark is based on your participation in seven out of nine tutorial 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 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 minus two with each session weighed equally.

The request of a waiver for a tutorial participation must be made to the teaching assistant for your lecture section. The waiver request will not be considered until you miss a tutorial session three times, as missing two tutorial sessions will not affect your final mark.

➢ iClicker Participation

Since your iClicker participation mark is based on your participation in eight out of ten

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[2] For example, you may use a free cloud storage space, 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.

lectures with iClicker opportunities, missing up to two lectures with iClicker opportunities will not affect your final mark. As stated in Grading and Evaluation (p.4), 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 three or more lectures with iClicker opportunities for a legitimate reason, your iClicker participation in these lecturers 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 minus two with each session weighed equally.

The request of a waiver for iClicker participation must be made to the instructor. The waiver request will not be considered until you miss an iClicker participation mark three times, as missing up to two lectures with iClicker opportunities will not affect your final mark.

➢ Computer Laboratory Session Participation Mark

If you will have to miss computer laboratory sessions for a legitimate reason, your participation in these laboratory 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. Your laboratory session participation mark will then be determined by your participation in the rest of the computer laboratory sessions with each session weighed equally. The request of a waiver for a computer laboratory session participation must be made to the instructor.

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 a grader, who is normally a teaching assistant for your lecture section. 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

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 before the empirical research paper assignments' due dates. Specific schedules of the teaching assistants' office hours will be posted on the class Quercus site.

2. Discussion Board

➢ We will also use the Discussions section 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, others may have the same question as yours and they would benefit from your posting the question and getting an answer through the Discussions section.

➢ You are also encouraged to post an answer to the questions posted by your classmates on the Discussions section so that we can maintain a mutually-supporting learning community from which all of you will benefit.

➢ Questions posted on the Discussions section will be normally addressed within two business days except on weekends by one of the teaching assistants in charge of answering questions posted on the Discussions section on that day.

➢ While relatively simple questions may be posted on the Discussions section 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 the teaching assistants or the instructor and expect a response within two working days. Please start the subject heading of your email with "POL232:..."

➢ If your questions are of substantive nature (including the questions about statistical software, R), please post these questions on the Discussions section of the class Quercus site or visit office hours or tutorial sessions to get them addressed.

➢ 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 Discussions section of the class Quercus site. You will get your questions addressed more quickly if you post your questions directly on the Discussions section 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. Empirical Research Paper Assignments

➢ You may post general questions on the empirical research paper assignments on the Discussions section of the class Quercus site. If you have a question specific to your research idea that is not appropriate to post on the Discussions section, you are best advised to visit office hours of the 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 grader to ask questions on your research ideas. 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 the teaching assistant for your lecture section via email only when your schedule does not allow visiting the available office hours. Please note that the advice on your research paper 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 paper 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 Discussions section of the class Quercus site during weekends.

➢ Please also note that the instructor and teaching assistants may not be able to answer last minute questions on the assignments on their due date.

➢ In the case of your questions of substantive nature on the Discussions section 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 him/her know they have not been addressed. Please include "POL232: 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 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, 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 *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 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.

Note that you need to bring Pollock and Edwards with you to a lecture when there is a computer laboratory session during the lecture.

Jan. 7 (L0101), 9 (L5101) & 10 (L0201)
Week 1. Introduction

PART I. DESCRIPTIVE STATISTICS:
ANALYSIS OF SAMPLE DATA
How Can We Describe a Variable or the Relationship between Variables?

Jan. 14 (L0101), 16 (L5101) & 17 (L0201)
Lecture 2. Descriptive Statistics for Single Variable (1)
   ➢ Kellstedt and Whitten,
      o 3rd Edition: Chapter 6.1-6.3, or
      o 2nd Edition: Chapter 5.1, 5.7-5.9.
Computer Laboratory Session 1. Intro to R
   ➢ Pollock and Edwards, Introduction, and Chapter 1

Jan. 21 (L0101), 23 (L5101) & 24 (L0201)
Week 3. Descriptive Statistics for Single Variable (2)
- Kellstedt and Whitten,
    - 3rd Edition: Chapter 6.4-6.6, or
    - 2nd Edition: Chapter 5.10-5.12

Computer Laboratory Session 2. Descriptive. Statistics for Single Variable in R
- Pollock and Edwards, Chapter 2

Tutorial 1: Homework 1 Due

Jan. 28 (L0101), 30 (L5101) & Feb. 1 (L0201)
Week 4. Descriptive Statistics for Bivariate Analysis (1)
Computer Laboratory Session 3. Examining the Relationship between Two Variables
- Pollock and Edwards, Chapter 4. (This is a required reading for both lecture and computer laboratory session.)

Tutorial 2: Homework 2 Due

Feb. 4 (L0101), 6 (L5101) & 7 (L0201)
Week 5. Descriptive Statistics for Bivariate Analysis (2): Simple Linear Regression
- Kellstedt and Whitten,
    - 3rd Edition: Chapter 9.1-9.3, or
    - 2nd Edition: Chapter 8.1-8.3.

Computer Laboratory Session 4
i) Linear Regression
- Pollock and Edwards, Chapter 8
    - p.117 and pp.119-121 only.
    - skip R-squared, standard errors, t-statistic & p-value, which will be covered later. and
- Pollock and Edwards, Chapter 9
    - pp.139-140, pp.142-144 [until the first paragraph], and p.157 [the second paragraph and after] only.

ii) Transforming Variables
- Pollock and Edwards, Chapter 3
    - Skip "Centering or Standardizing a Numeric Variable" (pp.53-54).

Tutorial 3: Homework 3 Due

Feb. 11 (L0101), 13 (L5101) & 14 (L0201)
Week 6: Descriptive Statistics for Multivariate Analysis: Multiple Linear Regression
- Kellstedt and Whitten,
    - 3rd Edition: Chapter 10.1-10.4, 10.10, or
    - 2nd Edition: Chapter 9.1-9.4, 9.9.
- Alan I. Abramowitz. 2008. "Forecasting the 2008 Presidential Election with the Time-for-Change Model." *PS: Political Science & Politics* 41(4).

Tutorial 4: Homework 4 Due

Midterm Paper Due: Feb. 15 (Fri.), 11:59pm

Reading Week (Feb. 18 - 22)

PART II. STATISTICAL INFERENCE FOR SINGLE VARIABLE
How Can We Learn about Population from Sample?

Feb. 25 (L0101), 27 (L5101) & 28 (L0201)
Week 7: Probability and Sampling Distribution
   ➢ Kellstedt and Whitten,
      o 3rd Edition: Chapter 7.1-7.3, or
      o 2nd Edition: Chapter 6.1-6.3.
   ➢ "Trudeau and Liberals Dip Slightly in Latest Poll," September 14, 2016, thestar.com
      (https://www.thestar.com/news/canada/2016/09/14/trudeau-and-liberals-dip-slightly-in-latest-poll.html).
Tutorial 5: Homework 5 Due

Mar. 4 (L0101), 6 (L5101) & 7 (L0201)
Week 8: Point Estimation and Interval Estimation
   ➢ Kellstedt and Whitten,
      o 3rd Edition: Chapter 7.3-7.5, or
      o 2nd Edition: Chapter 6.3-6.5
   ➢ Thomas H. Wonnacott and Ronald J. Wonnacott. 1990. *Introductory Statistics, 5th Edition.* Chapter 8-1 and 8-5 (skip 8.1-E, 8.5-B, and 8.5-C).
Tutorial 6: Homework 6 Due

PART III. STATISTICAL INFERENCE FOR LINEAR REGRESSION

Mar. 11 (L0101), 13 (L5101) & 14 (L0201)
Week 9: Statistical Inference for Linear Regression
   ➢ Kellstedt and Whitten,
      o 3rd Edition: Chapter 9.1-9.2, 10.1-10.2, 9.4's introductory paragraph (pp.195-196), or
      o 2nd Edition: Chapter 8.1-8.2, 9.1-9.2, 8.4's introductory paragraph (pp.178-179).
   Topics in Chapter 9.5 (3rd Edition) or 8.5 (2nd Edition) are also covered in this lecture, but my presentation will be simpler and slightly different. Hence, this chapter is not required.
Tutorial 7: Homework 7 Due

Mar. 18 (L0101), 20 (L5101) & 21 (L0201)
Week 10: Is Our Finding *Significant*? Confidence Interval for Linear Regression, Statistical Significance, and Substantive Significance
   ➢ Kellstedt and Whitten,
      o 3rd Edition: Chapter 9.4.4-9.4.5, 10.5-10.6, 10.9 or
      o 2nd Edition: Chapter 8.4.4-8.4.5, 9.5-9.6, 12.4.
Tutorial 8: Homework 8 Due

Mar. 25 (L0101), 27 (L5101) & 28 (L0201)
Week 11: A Few More Topics on Linear Regression
  ➢ Kellstedt and Whitten,
      o 3rd Edition: Chapter 9.4.6-9.4.7, 10.8-10.9 or
      o 2nd Edition: Chapter 8.4.6-8.4.7, 9.8, 12.4.
Tutorial 9: Homework 9 Due

Apr. 1 (L0101), 3 (L5101) & 4 (L0201)
Week 12: A Wrap-Up
  ➢ Readings, TBA.

Final Paper Due: Apr. 5 (Fri.), 11:59pm

Final Exam: Date and time determined by the Faculty of Arts and Science

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.