POL232H1S: Introduction to Quantitative Reasoning II
University of Toronto
Winter 2024

Meeting Room:	SS 561
Lecture Time:	LEC 0101: Monday, 1:00-3:00pm
	LEC 0201: Thursday, 9:00-11:00am
	LEC 5101: Tuesday, 5:00-7:00pm
Tutorial Time:	LEC 0101: Monday, 12:00-1:00pm or 3:00-4:00pm
	LEC 0201: Thursday, 11:00am-12:00pm or 12:00-1:00pm
	LEC 5101: Tuesday, 4:00-5:00pm or 7:00-8:00pm
Instructor:	
Email:	Kenichi Ariga
Office Hours:	kenichi.ariga@utoronto.ca
	TBA (Online office hours will be scheduled. Details will be announced on the class Quercus site)

Teaching Assistants:

I Younan An	i.an@mail.utoronto.ca
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Marc-Antoine Rancourt	marcantoine.rancourt @mail.utoronto.ca
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The assignment of these teaching assistants to lecture and tutorial sections will be announced on the class Quercus site.

Course Description and Objectives

Quantitative data 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. The 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, "POL232 Introduction to Quantitative Reasoning II," is the second course and continues to introduce important foundations of quantitative data analysis. POL232 is required for political science specialists and is an elective option for majors.

Students taking this course will learn:

1. Basic data analysis methods to describe, summarize and visualize the characteristics of variables — political, economic, and social phenomena operationalized and quantified — and their relationships;

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

3. *Linear regression* analysis, which is one of the most basic methods to empirically examine the relationship between political, economic, social and policy phenomena; and

4. The very basics of statistical computing to conduct simple quantitative analyses of social science data.

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

Computer Software

Quantitative social science research requires the use of computer software. In this class, you will learn an elementary use of a statistical software package called *R*. In particular, you will use *RStudio*, a popular and accessible graphical user interface (GUI) to *R*.
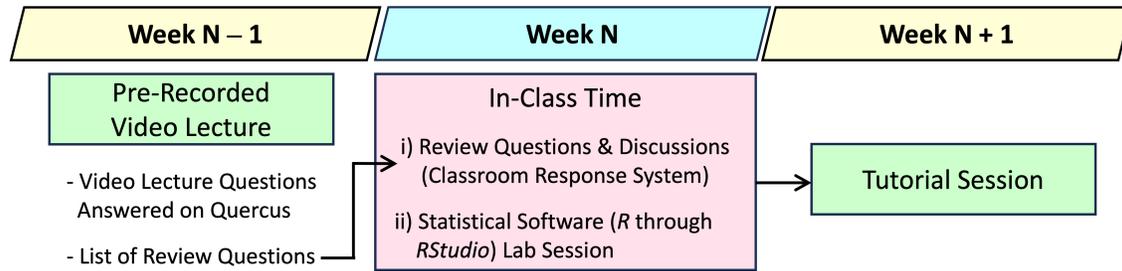
Quercus

Quercus is the primary means through which class announcements and assignments will be distributed. Pre-recorded lecture videos, lecture slides, assignments, and assigned readings will be made available on the class Quercus site. The Discussion Board on the class Quercus site will be the primary method by which you will ask 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 is 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.

Weekly Cycle of Your Study

This class adopts a flipped classroom. The following figure summarizes the weekly cycle of your study, and more detailed descriptions follow.

Week N – 1	Week N	Week N + 1

Pre-Recorded Video Lecture	In-Class Time i) Review Questions & Discussions (Classroom Response System) ii) Statistical Software (R through $RStudio$) Lab Session	Tutorial Session

- Video Lecture Questions Answered on Quercus

- List of Review Questions

➢ **Pre-Recorded Video Lecture in Week N − 1**

Lectures will be provided as pre-recorded videos, and you will be required to watch the recordings <u>before</u> each week's class time. You will also be required to respond to the questions posed in the video lecture through Quercus, and there will be a participation mark for completing and submitting your response on Quercus <u>before</u> each week's class time (more specifically, before 1:00PM on Mondays for LEC0101, 9:00AM on Thursdays for LEC0201, and 5:00PM on Tuesdays for LEC5101).

➢ **In-Class Time in Week N**

Each week's class time (1:00-3:00PM on Mondays for LEC0101, 9:00-11:00AM on Thursdays for LEC0201, and 5:00-7:00PM on Tuesdays for LEC5101) will usually be spent for i) the review questions and discussions on the topics covered in the pre-recorded video lectures for that week, and ii) the hands-on lab sessions on statistical software (we will use R through $RStudio$). Both types of activities will count toward your final mark.

For i) the in-class review questions and discussions, you will respond to these questions via a classroom response system (more specific information on the system will be announced on Quercus). Your mark will be based both on your participation and number of correct answers through the classroom response system. A list of review questions will be given in advance together with the pre-recorded video lecture, so that you may prepare your answers before each week's class time. Please note, however, that there may also be some review questions and discussions posed in class which are not included in this list.

In ii) the statistical software lab sessions, you will learn how to use R based on the lab session documents assigned for that week. Your mark will be based on the work that you complete during the class time and submit by the end of the class time.
If there is any incomplete work in the lab session, you are expected to complete it before next week's class time and tutorial session.

➢ **Tutorial Session in Week N + 1**

Weekly tutorial sessions will start in the third week of the semester (the week of Jan. 22). In each week's tutorial session, you will work on some exercise, including the data analysis exercise using $RStudio$, based on the topics covered in the previous week. Your mark for a tutorial session will be based both on your participation in a tutorial session and the work you complete and submit by the end of the tutorial session.

Further information on how the above items count toward your final mark will be provided later in the "Grading and Evaluation" section of this syllabus.

Earlier in the semester, the pre-recorded video lecture will be relatively short (30 to 50 minutes) but they will be getting longer as the semester goes by (50 to 90 minutes). This is because you need more time to get used to statistical software early in the semester and therefore, relatively simple topics are covered early in the semester so that more time can be spent on learning the use of software. Relatively more complicated topics will be covered later in the semester when you get used to using the statistical software so that more time can be spent on studying theoretical materials. Be ready for the change in the length of video lecture as the semester progresses.

Lecture Slides

Lecture slides used in the pre-recorded video lectures will be made available on the class Quercus site. Some slides, such as graphics and problems/exercises, may be taken out from the set made available on Quercus; however, all information essential for review will be kept in these slides.

Textbook

Some chapters from the following textbook will be assigned as a reference. They are not required, but it is still recommended, however, to read the assigned chapters to complement the class lectures and help you better understand the class materials. Note that for some topics, the class lectures will cover more than what is found in this textbook, and for others, the class lectures will be less technical than those in this textbook. You are required to understand the class topics at the level covered in the class lectures, not the level covered in this textbook.

> Paul M. Kellstedt and Guy D. Whitten, *The Fundamentals of Political Science Research*, *3rd Edition* (Cambridge University Press, 2018) or *2nd Edition* (2013).

The 2nd edition is available online in *Scholars Portal Books* through the University of Toronto Libraries. The link will be provided on the class Quercus site.

Teaching Assistants

There are teaching assistants, whose main duties are leading tutorial sessions, addressing your questions, grading assignments, and other student contacts. There will also be office hours held by the teaching assistants during a few weeks before the data analysis paper assignments are due. When you contact the teaching assistants, please follow the specific guidance set forth later in the "Outside Class Communication Policy " section.

All requests for an extension or waiver regarding required assignments must be made to the teaching assistant who leads your tutorial section (more on this later).

Tutorials

As described in the "Weekly Cycle of Your Study" above, there will be weekly tutorial sessions led by teaching assistants starting in Week 3 of the semester (the week of Jan. 22). You must register for one of the tutorial sections in your lecture section through ACORN by the last day to enroll in S section code courses (Sunday, Jan. 21).

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. To make this arrangement, register for a tutorial section, which you cannot attend but is still available on ACORN, and then contact the teaching assistant who leads this tutorial section. Information about tutorial instructors for each tutorial section will be announced on Quercus. An official documentation, which verifies the specific reason given, will be asked to make an alternative arrangement.

Grading and Evaluation

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

1. In-Class Review Questions and Discussions: 5%

Starting in Week 2 (the week of Jan. 15), there will be in-class review questions and discussions on the topics covered in the pre-recorded video lecture in that week. The questions will be posed through a classroom response system (more specific information on the system will be announced on Quercus), and you will address the questions through the classroom response system. Your response will be marked both on participation and correctness (for some questions, it may be marked only on participation). Your mark on the in-class review questions and discussions for each week will be based on the points you will earn (for both participation and correctness) in proportion to the maximum total possible points in that week.

The in-class review questions and discussions that count toward your final mark are planned for ten weeks between Week 2 (the week of Jan. 15) and Week 11 (the week of Mar. 25). Therefore, your mark on the review questions and discussions in each week counts toward 0.5% of your final mark, and in total, the in-class review question and discussion marks count toward 5% of your final mark. If, for any reason, the total number of weeks for which the in-class review questions and discussions are available is less than ten, then the in-class review question and discussion marks will still collectively count toward 5% of your final mark, and each week will be re-weighted equally.

It is your responsibility to bring a device for the classroom response system to each class. If you forget a device or it is not functional for any reason (e.g., dead battery), you will not earn the in-class review question and discussion mark in that week. Failure to bring the device with you or your device being unfunctional for any reason will not be considered a reason to waive or make up your in-class review question and discussion mark.

Your in-class review question and discussion mark in each week 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 response was recorded properly. If you find your mark for a particular week is not recorded properly, you must contact the instructor within two weeks

from when the mark for this week is posted on Quercus. <u>Claims after two weeks will not be addressed</u>.

This two-week deadline is not applied to the case in which the waiver granted for a legitimate reason is not properly recorded on Quercus. If the waiver granted for a legitimate reason is not properly applied, you can still request a correction after two weeks from when the mark for that week is posted on Quercus.

2. Quantitative Data Analysis Paper Assignments

Midterm Paper:	25%	Due: Thursday, Feb. 15, 11:59PM, EST
Final Paper:	25%	Due: Thursday, Apr. 4, 11:59PM, EST

Over the course of the semester, you will learn how to conduct a quantitative empirical analysis of political science data using *R* and the datasets provided in class. For the midterm paper assignment, you will apply what you will have learned by that time and write a quantitative data analysis paper based on it. In the final paper assignment, you will write a quantitative empirical research paper based on a linear regression analysis which addresses a causal theory of your interest.

3. Final Exam: 35%

There will be an in-person, closed-book, closed-note final exam. The exam will take place during the Final Exam Period in April administered by the Faculty of Arts and Science. Its date and place will be determined and announced by the Faculty later in the semester. A sample final exam will be made available on the class Quercus site later in the semester.

4. Participation Mark: 10%

Your participation mark will be based on the following four subcomponents.

(1) Quercus Questions on Pre-Recorded Video Lectures: 3%

Each week, you are required to submit your response to the questions posed during the pre-recorded video lecture to Quercus, and you will earn a participation mark as long as you submit your response <u>before</u> each week's class time (more specifically, before 1:00PM on Mondays for LEC0101, 9:00AM on Thursdays for LEC0201, and 5:00PM on Tuesdays for LEC5101).

Participation marks for the submission of the response to the questions posed during the pre-recorded video lectures are planned for ten weeks between Week 2 (the week of Jan. 15) and Week 11 (the week of Mar. 25). Therefore, your participation mark on the Quercus questions on the pre-recorded video lecture in each week counts toward 0.3% of your final mark, and in total, the participation marks on these Quercus questions count toward 3% of your final mark. If, for any reason, the total number of weeks for which the participation marks for the submission of the response to the questions posed during the pre-recorded video lectures are available is less than ten, then the participation marks on

these questions will still collectively count toward 3% of your final mark, and each week will be re-weighted equally.

(2) Statistical Software (*RStudio*) Lab Session Participation: 3%

Starting in Week 2 (the week of Jan. 15), there will be a statistical software lab session during the class time, in which you will learn the use of *R* based on the weekly lab session documents. In the week when the quantitative data analysis papers are due, you will work on your paper projects during the lab session. You will be required to submit the work you complete during the lab session to Quercus by the end of the lab session each week. You will earn a participation mark based on the work you submit.

Since this is a participation mark, as long as you have reasonably completed the work and submitted it to Quercus by the end of the lab session, you will earn a full participation mark. You may be given a partial credit if you have not reasonably completed the work.

In total, 11 lab sessions between Week 2 (the week of Jan. 15) and Week 12 (the week of Apr. 1) are scheduled to count toward a lab session participation mark. Each lab session counts toward 0.27…% of your final mark, and in total, the lab session participation counts toward 3% of your final mark. If, for any reason, the total number of lab sessions is less than 11, then the lab session participation will still collectively count toward 3% of your final mark, and each lab session will be re-weighted equally.

(3) Tutorial Participation: 3%

There will be weekly tutorial sessions starting in Week 3 of the semester (the week of Jan. 22). Your participation mark in each week's tutorial session consists of two components: the participation in tutorial activities and the work you complete during the tutorial session and submit it to Quercus by the end of the tutorial session. Both the activity participation and the work you submit will be weighted equally.

Since this is a participation mark, as long as you reasonably participate in the tutorial activities and have reasonably completed the work and submitted it to Quercus by the end of the tutorial session, you will earn a full participation mark. You may be given a partial credit, however, for both the activity participation and the work you submit, respectively, if you do not fully participate in the tutorial activities or have not reasonably completed the work.

In total, 10 tutorial sessions are scheduled between Week 3 (the week of Jan. 22) and Week 12 (the week of Apr. 1). Each tutorial session counts toward 0.3% of your final mark, and in total, tutorial participation counts toward 3% of your final mark. If, for any reason, the total number of tutorial sessions is less than 10, then the tutorial participation will still collectively count toward 3% of your final mark, and each tutorial session will be re-weighted equally.

(4) 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.

Plagiarism Detection Tool

Normally, students will be required to submit their course essays to the University's plagiarism detection tool 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 tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (https://uoft.me/pdt-faq).

Students who wish to not use the University's plagiarism detection tool 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 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 may be asked, for example, to submit all your rough work for an assignment and to have a short meeting with the teaching assistant or the instructor in which you will be asked about your essay.

Late Assignment/Late Penalty Policy

All work is late if submitted after the date and time specified as due. To ensure fairness, the late assignment/late penalty policy specified below will be strictly enforced to everyone in class.

➢ Quercus Questions on Pre-Recorded Video Lectures / Online Feedback Surveys

A late submission of weekly Quercus questions on the Pre-Recorded Video lectures and online feedback surveys after their respective due date and time will not be accepted.

➢ Works for Statistical Software Lab Sessions and Tutorial Sessions

A late submission of the works to be completed during the statistical software lab sessions and tutorial sessions after their respective due date and time, which are normally the end of each week's class or tutorial time, will not be accepted.

➢ Quantitative Data Analysis Paper Assignments

Quantitative data analysis paper assignments handed in late will result in a penalty of 1-percentage-point reduction per day (e.g., from 72% to 71%). 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 you will submit your assignments to Quercus, your submission must be accepted and recorded 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 starting to upload it to Quercus before the due date and time

is not enough. Your upload must be fully complete before the due date and time.

In addition, after you submit your paper, you should make sure you open your submission and confirm that the correct file was uploaded. If the file uploaded is not correct, then it is not considered as a proper submission, and a late penalty will be applied to the resubmitted paper.

Computer-related problems, such as the crash of your computer, a slow Internet connection, or 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. In addition, 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. If you have a UTmail+ account, you have access to 1TB of storage in your OneDrive at UofT and you can make a backup there.

Accommodation Policy (e.g., Extension or Waiver of Assignments/Requirements)

Below is the policy about the type of accommodations (extension/waiver) considered for each assignment/requirement, acceptable reasons for accommodations, acceptable official documentations, and the procedure to request these accommodations. To ensure fairness, this policy will be strictly enforced to everyone in class.

➢ Type of Accommodations

An extension (or a waiver of a late penalty) may be considered for the quantitative data analysis paper assignments, and a waiver may be considered for the in-class review questions and discussions, the Quercus questions on the pre-recorded video lectures, the statistical software lab session participation, the tutorial participation, and the online feedback survey.

➢ Acceptable Reasons for Accommodations

The above accommodations (extension/waiver) may be considered only for a legitimate reason, such as a medical emergency, an accessibility issue, religious observances, and a family emergency, and there is an acceptable official documentation, which verifies the specific reason given (more on documentation below).

Conflict with other class's assignment/exam schedule, leaving for a non-academic trip, or vacation is not an acceptable reason to request an extension or a waiver of the requirements. Computer-related problems, such as the crash of your computer, a slow Internet connection, or an occasional slow response of the server, will not be considered as an acceptable reason to request for an extension or waiver of the requirements either.

➢ Acceptable Official Documentation
- If you need an accommodation for accessibility reasons, you may use your

Accessibility Services Letter as documentation.

- If you need an accommodation for a health condition or injury, a personal or family emergency, or bereavement, you may use the Absence Declaration Tool on ACORN. Note that starting in 2023-24, students may only use the Absence Declaration once per academic term (e.g., the fall term) for a maximum period of 7 consecutive calendar days.

- For an accommodation for a health condition or injury, you may also use the UofT Verification of Illness or Injury Form (VOI). The VOI indicates the impact and severity of the illness, while protecting your privacy about the details of the nature of the illness.

- For an accommodation for religious observances, you don't need to submit a documentation if your occasion for religious observances is listed in either one of the following two webpages: Accommodations for Religious Observances or Learn about Significant Religious and Cultural Days. In your accommodation request email, simply state the occasion and indicate where it can be found in either one of the above two webpages.

- For an accommodation for any other reasons, including a personal or family emergency or bereavement, you may use your College Registrar's letter supporting your request. For extended absences and absences due to non-medical reasons, make sure to contact your College Registrar's Office.

➢ Procedure

All of the above requests of accommodations must be made to your teaching assistant via email. If you use the Absence Declaration as official documentation, make sure you specify the email address of your teaching assistant as a recipient of a copy of your Absence Declaration.

The accommodation requests must be made in advance as much as possible. Those who missed the deadline or participation for a legitimate, unforeseeable reason should contact their teaching assistant as soon as possible and no later than one week after returning to class.

In the request email, please include your full name, student number, and tutorial section (e.g., TUT0101).

➢ Necessity of Verification

Given the sheer number of students taking this course, we need to be strict about verification of the reasons given for an accommodation request. For the sake of fairness (i.e., everyone in the class is treated in the same way), we strictly enforce the verification of the reasons for accommodation, and your request cannot be accommodated unless the reason you suggested is verified.

The reason is considered verified if the acceptable official documentations listed above are submitted. For example, if you declare absence on ACORN, the reason for absence

that you suggested is considered verified, and no further verification is needed. As long as you can submit these documentations, the reason for your request is considered verified (as suggested above, religious and cultural observances can be considered verified if they are listed in the above two websites).

An accommodation may be possible for reasons not listed above as long as they are considered equally legitimate to those reasons listed. In this case, verification of the reasons given is also required and the documentations listed above may also be used if they are suitable. Feel free to contact your teaching assistant and/or the instructor if you are not sure whether an accommodation is possible or what documentation is suitable.

Please note that a request based on an unverifiable claim will not be accommodated. For example, suppose that a student claims that their request is based on their email exchange with their teaching assistant and they did not keep this email exchange but somehow kept a screenshot of this email. An accommodation cannot be made based on this screenshot because it is easy to create a forgery of a digital image. In this example, showing the original email exchange would be required. As another example, suppose that a student claims that they cannot upload an essay to Quercus because a submission button does not exist on their end of the class Quercus screen and sends a screenshot as verification. Again, an accommodation cannot be made based on this screenshot because it is easy to create a forgery of a digital image. In this example, demonstrating the problem on the class Quercus site using a computer which is not the student's would be required to verify the reason given.

Grade Appeals on Quantitative Data Analysis Paper Assignments

There are two stages in the process of grade appeals on the quantitative data analysis paper assignments in this class.

First, you may appeal to your grader, who is normally the teaching assistant for your tutorial section. You are required to raise specific and substantive questions regarding the grades and feedback you received, so that your grader can double check their assessment based on them and address your questions. The grader may adjust the grade if they find it appropriate.

Second, if you still believe the grade you received is not appropriate after appealing to the grader, you may request a regrading to the instructor. You are required to submit a brief documentation substantiating why you believe your grade is not appropriate. The justification you give for regrading will be used by the instructor to consider if there are reasonable grounds for regrading. If your regrading request is considered reasonable, another teaching assistant who did not give your original mark will be assigned to regrade your paper with fresh eyes. This second grader will regrade your paper without knowing your original mark, the feedback given by the first grader, or the justification you gave for regrading. This is because your paper should be marked only on its quality based on the paper requirements and the evaluation criteria specified in the rubric. The regraded 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.

The grade appeal to the first grader and the regrading request to the instructor must be made

within two weeks from when the original grade is assigned.

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

- o You are welcome to visit the instructor's office hours if you have any questions on the class subjects and materials. Details about the instructor's office hours will be posted on Quercus.
- o There will also be office hours held by teaching assistants before the paper assignments' due dates. Details of the teaching assistants' office hours will also be posted on Quercus.

2. Discussion Board on Quercus

- o We will use the Discussion Board on the class Quercus site as the main medium through which you can ask questions and get them addressed. Given the nature of the course subjects and the large size of the class, other students may have the same question as you, and they would benefit from your posting your questions and getting them addressed through the Discussion Board.
- o 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.
- o Questions posted on the Discussion Board will normally be addressed within 24 hours, except on weekends, by one of the teaching assistants in charge of addressing questions posted on the Discussion Board on that day.

3. Email Communications

- o If you have any questions of a 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 "POL232:..."
- o All requests for extension or waiver regarding the required assignments and participation must be made to the teaching assistant who leads your tutorial section. Please include your full name, student number, and tutorial section (e.g., TUT0101) in your email on these requests.
- o 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 addressed.
- o If you ask questions of substantive nature via email to the teaching assistants or the instructor, you will be asked to post them on the Discussion Board on the class Quercus site. You are best advised to post your questions directly on the Discussion Board rather than sending them to the teaching assistants or the instructor by email, as your questions may be addressed more quickly if you post them directly on the

Discussion Board.

- o Note that we will use Piazza as our Discussion Board, and you can post your question anonymously to your classmates (but your question is not anonymous to the instructor and teaching assistants). More information about Piazza will be posted on Quercus.

4. Quantitative Data Analysis Paper Assignments

- o You may post relatively simple questions about the paper assignments on the Discussion Board of the class Quercus site. If you have detailed questions on your paper idea, you are best advised to visit office hours of the teaching assistants or the instructor.
- o Please note that neither the instructor nor teaching assistants will be able to review your draft paper when you seek advice.

5. Non-response

- o Please note that the instructor and teaching assistants may not be able to answer emails or questions posted on the Discussion Board of the class Quercus site during weekends and statutory holidays.
- o 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.
- o In the case of questions of substantive nature posted on the Discussion Board of the class Quercus site or those of personal nature over email not addressed within two working days (excluding weekends and holidays), send the instructor or teaching assistants an email to let them know that your questions have not been addressed. Please include "POL232: Unanswered Question" in the subject heading of your email.

Accessibility

Students with diverse learning styles and needs are welcome in this course. If you need accommodation, you should register with Accessibility Services (AS) at the beginning of the academic year by visiting their website. Without registration, you will not be able to verify your situation with your instructors, and instructors will not be advised about your accommodation needs. AS will assess your situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work.

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 this website, which is the rule book for academic behaviour at the U of T. Another website 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 the classroom response system (e.g., using someone else's classroom response system 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, you may read this website. Please note that 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 this site. This list is part of *the Advice on Academic Writing* at the University of Toronto. You may also find other resources available on this website helpful.

To learn more about how to cite and use source material appropriately and for other writing support, also see the U of T writing support website.

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.

Generative Artificial Intelligence Tools

The use of generative artificial intelligence tools and apps is prohibited in all course assignments (unless explicitly stated otherwise by the instructor in this course). This includes ChatGPT and other AI writing and coding assistants. Use of generative AI in this course may be considered use of an unauthorized aid, which is a form of academic offence under *the Code of Behaviour on Academic Matters*.

Class Schedule

The class schedule is specified below. During the semester, the 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 advance notice on the class Quercus site.

As suggested before in the "Textbook" section, the chapters from Kellstedt and Whitten are assigned as areference. They are not required, but it is still recommended to read the assigned chapters to complement the class lectures and help you understand the class materials (see the "Textbook" section for more about this).

Week 1: Jan. 8 (LEC 0101), 9 (LEC 5101) & 11 (LEC 0201)
Introduction

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

Week 2: Jan. 15 (LEC 0101), 16 (LEC 5101) & 18 (LEC 0201)
    Descriptive Statistics for Single Variable (1)
    ➢ Kellstedt and Whitten,
        ○ 3rd Edition: Chapter 6.1-6.3, or
        ○ 2nd Edition: Chapter 5.1, 5.7-5.9.

Week 3: Jan. 22 (LEC 0101), 23 (LEC 5101) & 25 (LEC 0201)
    Descriptive Statistics for Single Variable (2)
    ➢ Kellstedt and Whitten,
        ○ 3rd Edition: Chapter 6.4-6.6, or
        ○ 2nd Edition: Chapter 5.10-5.12
    Tutorial Session 1

Week 4: Jan. 29 (LEC 0101), 30 (LEC 5101) & Feb. 1 (LEC 0201)
    Descriptive Statistics for Bivariate Analysis (1)
    Tutorial Session 2

Week 5: Feb. 5 (LEC 0101), 6 (LEC 5101) & 8 (LEC 0201)
    Descriptive Statistics for Bivariate Analysis (2): Simile Linear Regression
    ➢ Kellstedt and Whitten,
        ○ 3rd Edition: Chapter 9.1-9.3, or
        ○ 2nd Edition: Chapter 8.1-8.3.
    Tutorial Session 3

Week 6: Feb. 12 (LEC 0101), 13 (LEC 5101) & 15 (LEC 0201)
    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.
    Tutorial Session 4
    Midterm Paper Due: Feb. 15 (Thr.), 11:59PM, EST

Family Day & Reading Week: Feb. 19 - 23

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

Week 7: Feb. 26 (LEC 0101), 27 (LEC 5101) & 29 (LEC 0201)
    Probability and Sampling Distribution
  ➢ Kellstedt and Whitten,
        ○ 3rd Edition: Chapter 7.1-7.3, or
        ○ 2nd Edition: Chapter 6.1-6.3.
  ➢ "Trudeau and Liberals Dip Slightly in Latest Poll," September 14, 2016, thestar.com.
    Tutorial Session 5

Week 8: Mar. 4 (LEC 0101), 5 (LEC 5101) & 7 (LEC 0201)
    Point Estimation and Interval Estimation
  ➢ Kellstedt and Whitten,
        ○ 3rd Edition: Chapter 7.3-7.5, or
        ○ 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 Session 6

PART III. STATISTICAL INFERENCE FOR LINEAR REGRESSION

Week 9: Mar. 11 (LEC 0101), 12 (LEC 5101) & 14 (LEC 0201)
  Statistical Inference for Linear Regression (1): Population Model & Point Estimation
  ➤ 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 assigned.
  Tutorial Session 7

Week 10: Mar. 18 (LEC 0101), 19 (LEC 5101) & 21 (LEC 0201)
  Statistical Inference for Linear Regression (2): Confidence Interval & Statistical
      Significance
  ➤ Kellstedt and Whitten,
      o 3rd Edition: Chapter 9.4.4-9.4.5, 10.5-10.6, 10.8-10.9 or
      o 2nd Edition: Chapter 8.4.4-8.4.5, 9.5-9.6, 9.8, 12.4.
  Tutorial Session 8

Week 11: Mar. 25 (LEC 0101), 26 (LEC 5101) & 28 (LEC 0201)
  Topics on Linear Regression: Substantive Significance & Causal Inference
  Tutorial Session 9

Week 12: Apr. 1 (LEC 0101), 2 (LEC 5101) & 4 (LEC 0201)
  Wrap-Up
  Tutorial Session 10
  Final Paper Due: Apr. 4 (Thr.), 11:59PM, EST

Final Exam: During the Final Exam Period

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.