

THE UNIVERSITY OF BRITISH COLUMBIA
POLITICAL SCIENCE 572A-001
QUANTITATIVE TECHNIQUES OF POLITICAL ANALYSIS
2020-2021 Term 1

Instructor:

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Course Description:

This course introduces basic statistical methods used in the study of political science, and the social sciences at large. Statistics are an efficient and accepted way of communicating ideas; they are a means of bridging the gap between implication and inference. Contemporary political science research in all subfields utilizes statistical techniques and, consequently, a basic understanding of these methods is crucial if one is to be a sophisticated consumer of political science literature and to become a producer of such research. The lectures, homework, and exams are designed to instruct you in the understanding and proper use of social science methods and promote your critical analysis of statistical findings. Students will learn to describe data, understand the impact of randomness in statistical research, conduct statistical tests, and most importantly learn to evaluate the implications of quantitative results. Students will learn to compute most of the techniques discussed in class both “by hand” and “by computer”. We will also devote portions of the course to the use of statistical software and commonly used archival sources of political science data.

Acknowledgement

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the Musqueam people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next on this site.

Course Learning Objectives:

By the end of the course, you will be able to

- Collect and organize data using statistical software (R)
- Write basic functions and loops in R
- Summarize data effectively with numbers & graphics
- Estimate population characteristics with sample data
- Explain the characteristics and importance of a sampling distribution
- Use statistical techniques, including OLS regression and t-tests, to describe and interpret relationships between variables

Prerequisites:

None.

Course Format:

The course meets weekly 2-4:30pm on Thursdays. These sessions will be recorded and posted on the course website (on Canvas). In the first week of class I will meet with students studying from distant time zones to discuss alternative meeting times for those students.

There will also be a weekly 2-hr tutorial session. We will schedule this session at the first-class meeting.

It is understood that for many, if not most students in this course, this will be their first interaction with quantitative methods. Some may have had little to no math experience since high school either by coincidence or design. While there will certainly be some math in the course, I will approach these concepts assuming no comfort with mathematics aside from basic algebra (and even then, we will go over, important mathematical results and formulae). If you are having trouble with the concepts, please ask questions in class. Others will likely be confused by some of the same issues. If you continue to have trouble in the course, please see me during office hours or make an appointment and we can clear up any problems as they arise. DO NOT wait until right before the exam to try to clear up all of your accumulated problems. Statistics is a cumulative enterprise, so a lack of understanding early can compound itself as the class moves forward.

Learning Materials

Most of the readings will be drawn from the following textbook:

Imai, Kosuke. (2018). *Quantitative social science: An introduction*. Princeton University Press.

Electronic versions of the textbook are available.

Some weeks have additional reading assigned. These readings are articles available electronically through the UBC library.

The software R. Free to download and use at: www.r-project.org

An account with R-Studio Cloud. A cloud based front end for R which will allow us to view and share code online. <https://login.rstudio.cloud/register>

Learning Activities:

- Time zone permitting, students are expected to attend class and participate via: asking and answering questions, working in small groups to solve problems, writing and collaborating on computer code that runs statistical analyses. There is no grade for in-class participation
- Students are strongly encouraged to work in small groups to complete assignments. You can work together to solve problems and answer questions. Your assignments should be submitted in your own words. For the final exam, group work is not permitted.

Assessments of Learning

Students are responsible for material covered in lectures and class discussions as well as in the assigned readings. Regular attendance in class is required.

Extensions will be granted consistent with university policy. If you require an extension, email me as soon as possible. In some cases, I will require documentation, in others I will not. Do not send documentation unless I request it. The late penalty is 10% deduction per 24 hours (including week-end days), beginning on the due date.

Assignments and the exam will be graded by the instructor and TA. If you wish to have your work re-graded, contact the instructor.

Grades will be determined on the basis of the following:

a. Assignment 1 (Due Oct 5th)	15%
b. Assignment 2 (Due Oct 26th)	15%
c. Assignment 3 (Due Nov 16th)	15%
d. Assignment 4 (Due Dec 7 th)	15%
e. Final exam – one week take home –	40%

Online Learning and Censorship

During this pandemic, the shift to online learning has greatly altered teaching and studying at UBC, including changes to health and safety considerations. Keep in mind that some UBC courses might cover topics that are censored or considered illegal by non-Canadian governments. This may include, but is not limited to, human rights, representative government, defamation, obscenity, gender or sexuality, and historical

or current geopolitical controversies. If you are a student living abroad, you will be subject to the laws of your local jurisdiction, and your local authorities might limit your access to course material or take punitive action against you. UBC is strongly committed to academic freedom, but has no control over foreign authorities (please visit <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,33,86,0> for an articulation of the values of the University conveyed in the Senate Statement on Academic Freedom). Thus, we recognize that students will have legitimate reason to exercise caution in studying certain subjects. If you have concerns regarding your personal situation, consider postponing taking a course with manifest risks, until you are back on campus or reach out to your academic advisor to find substitute courses. For further information and support, please visit: <http://academic.ubc.ca/support-resources/freedom-expression>

Schedule

Note: The schedule is a general plan for the course; deviations announced to the class by the instructor may be necessary. We may not cover all of these topics. Conversely, time permitting, other topics might be covered in this course.

Week 1: Course Introduction

Imai – Chapter 1

Week 2 & 3: Causal Inference

Imai – Chapter 2

Weeks 4 & 5: Measurement, Distributions, & Univariate Descriptive Statistics

Imai – Chapter 3

Weeks 6 & 7: Linear Regression

Imai – Chapter 4

Weeks 8 & 9: Probability

Imai – Chapter 6

Weeks 10 & 11: Statistical Inference and Uncertainty

Imai – Chapter 7

Weeks 12 & 13: Return to Linear Regression

TBD

General Academic Policies

Regular attendance in lectures and tutorials and participation (in tutorials) is expected. All assignments must be completed and handed in. Students who do not attend regularly or fail to hand in an assignment may be disallowed from writing the final exam.

Read the university calendar so that you are aware of no-penalty drop dates, requirements for medical authorization (to defer an exam, for example) and other procedures that may affect you.

Students who wish to appeal grades assigned to their academic work may do so. The initial appeal should be made to the TA or course instructor. If the student remains unsatisfied with this process, he/she may proceed to the head of the department or further to a formal committee established in accordance with University policies.

Religious holidays – UBC permits students who are scheduled to attend classes or write examinations on holy days of their religions to notify their instructor in advance of these days and their wish to observe them by absenting themselves from class or examination. Instructors provide opportunity for students to make up work or examinations missed without penalty. (Policy # 65.)

UBC is committed to the academic success of students with disabilities. UBC's policy on Academic Accommodations for students with disabilities aims to remove barriers and provide equal access to University services, ensure fair and consistent treatment of all students, and to create a welcoming environment. Students with a disability should first meet with an Access and Diversity advisor to determine what accommodations/services you are eligible for.

University Values and Priorities:

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available [here](https://senate.ubc.ca/policies-resources-support-student-success) (<https://senate.ubc.ca/policies-resources-support-student-success>)

Academic Integrity and Responsibility

As a member of this class, you are responsible for contributing to the course objectives through your participation in class activities and your work on essays, exams, and other projects. In the process of coming into your own as an independent, responsible participant in the academic community, you are encouraged to seek advice, clarification, and guidance in your learning from your instructor and/or Teaching Assistant. If you decide to seek help beyond the resources of this course, you are responsible for ensuring that this help does not lead you to submit others' work as your own. If an outside tutor or other person helps you, show this policy to your tutor or helper: make sure you both understand the limits of this person's permissible contribution. If you are uncertain, consult your instructor or TA.

Academic communities depend on their members' honesty and integrity in representing the sources of reasoning, claims, and wordings that appear in their work. Like any other member of the academic community, you will be held responsible for the accurate representation of your sources: the means by which you produced the work you are submitting. If you are found to have misrepresented your sources and to have submitted others' work as your own, penalties may follow. Your case may be forwarded to the Head of the department, who may decide that you should receive zero for the assignment. The Head will report your case to the Dean's Office, where the report will remain on file. The Head may decide, in consultation with your instructor, that a greater penalty is called for, and will forward your case to the Dean's Office. After an interview in the Dean's Office, your case may be forwarded to the President's Advisory Committee on Academic Misconduct. Following a hearing in which you will be asked to account for your actions, the President may apply penalties including zero for the assignment; zero for the course; suspension from the university for a period ranging from 4 to 24 months; a notation on your permanent record. The penalty may be a combination of these.

Academic communities also depend on their members' living up to the commitments they make. By enrolling in this course, you make commitments to an academic community: you are responsible for meeting deadlines, and attending class and engaging in class activities. If you find that you cannot meet a deadline or cannot participate in a course activity, discuss your situation with your instructor or TA before the deadline or before your absence.

Like any academic author submitting work for review and evaluation, you are guaranteeing that the work you submit for this course has not already been submitted for credit in another course. Your submitting work from another course, without your instructor's prior agreement, may result in penalties such as those applied to the misrepresentation of sources.

Illness and Absence

If you experience medical, emotional, or personal problems that affect your attendance or academic performance, please notify Arts Academic Advising. If you are registered with Access and Diversity, you should notify your instructor at least two weeks before

examination dates. If you are planning to be absent for varsity athletics, family obligations, or other commitments, you should discuss your commitments with the instructor before the drop date.

Reach out and ask for help if you need it

University students often encounter setbacks from time to time that can impact academic performance. If you run into difficulties and need assistance, I encourage you to contact me by email or by dropping by my office. I will do my best to support your success during the term. This includes identifying concerns I may have about your academic progress or wellbeing through Early Alert. With Early Alert, faculty members can connect you with advisors who offer student's support and assistance getting back on track to success. Only specialized UBC advisors are able to access any concerns I may identify, and Early Alert does not affect your academic record.

For more information: <https://facultystaff.students.ubc.ca/systems-tools/early-alert>

For information about addressing mental or physical health concerns, including seeing a UBC counselor or doctor, visit: <https://students.ubc.ca/health-wellness>

Respectful University Environment

UBC recognizes that “the best possible environment for working, learning and living is one in which respect, civility, diversity, opportunity and inclusion are valued.” The full *UBC Statement on Respectful Environment for Students, Faculty and Staff* can be found at <http://www.hr.ubc.ca/respectful-environment/files/UBC-Statement-on-Respectful-Environment-2014.pdf>. Students should read this statement carefully and take note of both the protections and the responsibilities that it outlines for all members of the UBC community. Students should also review the Student Code of Conduct, at: <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,750,0>

This course values frank discussion, healthy debate, and the free and respectful exchange of ideas. Students are welcome to voice and defend their views, which may differ from those of other students or of the instructor. However, disrespectful behavior, including bullying and harassment, will not be tolerated. The instructor and teaching assistant will be professional and respectful in all their exchanges with students, and students will exercise similar professionalism and respect in their interactions with each other, with the teaching assistant, and with the instructor.

If you have any concerns about the class environment, please raise them with the instructor. You also have the options of contacting the Head of the Political Science Department, UBC's Equity and Inclusion Office (<http://equity.ubc.ca>), or the UBC Ombudsperson for Students: <https://ombudsoffice.ubc.ca>

Equity and Harassment

UBC is committed to equity (including but not limited to gender equity) and fostering a safe learning environment for everyone. All peoples should be able to study, work,

and learn in a supportive environment that is free from sexual violence, harassment, and discrimination. UBC's Policy #3 on Discrimination and Harassment defines harassment as: "unwanted and unwelcome attention from a person who knows, or ought to know, that the behaviour is unwelcome. Harassment can range from written or spoken comments to unwanted jokes, gifts, and physical assault, and may be accompanied by threats or promises regarding work or study opportunities and conditions. Harassment can be either a single incident or a series of related incidents." Such behavior is not acceptable and will not be tolerated at UBC. If you or someone you know has encountered sexual violence or harassment, you can find confidential support and resources at the AMS Sexual Assault Support Centre, (SASC), and the Equity and Inclusion Office. The SASC is an all-genders service that serves the UBC-Vancouver campus community and is committed to creating a safer campus community, free from sexualized violence. Their work is informed by feminism, anti-oppression and recognition of intersectionality. The Equity and Inclusion Office is committed to fostering a community in which human rights are respected and equity and diversity are integral to university life.

Resources are available at:

Sexual Assault Support Centre, (SASC)
249M, Student Union Building, UBC
604-827-5180
sasc@ams.ubc.ca
<http://amssasc.ca>

Equity and Inclusion Office
2306 – 1874 East Mall (Brock Hall)
604.822.6353
equity@equity.ubc.ca
<http://equity.ubc.ca>