

PSCI 2702A

Quantitative Research Methods in Political Science

Friday, 8:35 a.m. – 10:25 a.m.

This course will be held remotely online

I General information

Instructor: Steve White

On-line Office Hours: Friday, 9:35 a.m. – 11:00 a.m. (or by appointment)

Email: steve.white@carleton.ca

All email communication is to be via official Carleton university e-mail accounts and/or cuLearn, not personal emails.

II Course description

This course introduces students to the methods political scientists use to gather and analyze evidence; it is designed to furnish students with skills they can use throughout their studies in political science and other disciplines in the social sciences. Unlike other courses that focus on the “stuff” of politics (e.g. the state, authority, legitimacy, citizenship, democracy), the emphasis in this course is on the techniques used to explain how and why things happen in the political world. The course will cover basic approaches to political science, the choices that researchers have to make when designing their research, and basic methods of analysis for quantitative data.

The course has three primary objectives: to explain the goals of quantitative research in the social sciences; to provide students with a toolkit for conducting their own original quantitative empirical research; and to develop students' skills in comprehension and evaluation of the quantitative research of other social scientists. By the end of the course, students should be capable of exploring questions that no other political researchers have yet undertaken.

III Course Format

This course will be administered remotely and will include both synchronous and asynchronous elements. **There will be no synchronous, "live" lectures in this course.** Asynchronous lecture materials in the form of videos, PowerPoint decks, course notes, and additional weblinks will be posted in a series of learning modules on cuLearn. These modules are divided into four parts (see Section VIII: Course Schedule). Students are expected to read, watch, and listen to all materials in these modules.

Weekly "open" office hours will be held on Zoom between 9:35 a.m. and 11:00 a.m. During this time, I will answer students' questions about course material and assignments. These hours are open to all students in the course. Students who wish to attend office hours in any week should email me at least 24 hours in advance. Students will then be sent a Zoom link in advance of that week's office hours. Students who require a private Zoom meeting with the instructor should request an appointment by email.

All assigned work will be submitted via cuLearn. Quizzes will be administered on cuLearn, and will open at 9:30 a.m. on Fridays on which quizzes are held. **Students must begin all quizzes between 9:30 a.m. and 10:25 a.m. on the days which quizzes are administered.**

Your Teaching Assistant will be available for online chats through cuLearn during assigned tutorial times. Participation in online chats is not mandatory.

IV Learning outcomes

By the end of this course, students should be able to:

- Understand and apply core concepts in quantitative analysis, including levels of measurement, the central limit theorem, statistical significance, cross-tabulation, measures of association, the elaboration paradigm, and correlation and regression.
- Interpret univariate statistics, confidence intervals, statistical significance, and the results of bivariate and multivariate analyses
- Critically assess the methodological choices and data analyses of other researchers

V Texts

Required Text: Garner, Roberta. 2010. *The Joy of Stats* (Second Edition). University of Toronto Press. ISBN 9781442601888.

This text is available in print and electronically through the campus bookstore (<https://www.bkstr.com/carletonstore/home>). It is also available for purchase from some of the following vendors (students should compare prices):

- University of Toronto Press (print and e-book): <https://utorontopress.com/ca/the-joy-of-stats-3>
- Google Play (e-book): <https://play.google.com/store>
- Amazon (print and Kindle e-book): <https://www.amazon.ca>
- Chapters (print): <https://www.chapters.indigo.ca/>

Other required course material will be available online through the Ares library reserve system on cuLearn, or through other weblinks provided on cuLearn.

VI Evaluation at a glance

Component	Value	Due Date
Quiz 1: variables and frequencies		Administered on cuLearn January 22
Quiz 2: descriptive statistics		Administered on cuLearn February 5
Quiz 3: statistical inference		Administered on cuLearn February 12
Quiz 4: cross-tabulation		Administered on cuLearn February 26
Quiz 5: correlation and regression		Administered on cuLearn March 12
Quiz 6: the elaboration paradigm		Administered on cuLearn March 26
Quiz 7: multiple regression		Administered on cuLearn April 9
Average of five highest quiz scores	50%	
Assignment 1: data collection and coding	5%	Submitted on cuLearn February 5
Assignment 2: univariate statistics	10%	Submitted on cuLearn March 5
Assignment 3: bivariate analysis	15%	Submitted on cuLearn March 26
Assignment 4: multivariate analysis	20%	Submitted on cuLearn April 14

VII Evaluation in detail

Quizzes (50%): Quizzes will be administered on cuLearn and will consist of short answer questions. Students will have 30 minutes from the time they begin to complete the quiz and submit their responses. Seven quizzes will be administered, but each student's five best quiz scores will be averaged and their two lowest scores will be excluded from their grade. No make-up quizzes will be administered. However, because each student's two lowest quiz scores are excluded from their grade, students may miss up to two quizzes with no penalty.

In cases where a student misses more than two quizzes, the student will contact the instructor. The instructor requires a completed Covid-19 Self-declaration form (see Section X of this document), or an

otherwise valid and documentable reason for absence (e.g. bereavement) before considering any accommodations.

Assignments (50%): The four assignments are designed to give students hands-on experience with quantitative data analysis. Each assignment will ask students to analyze and interpret quantitative data using the skills developed in the course. These data will be provided to students in the assignment. No special statistical software is required to complete these assignments. Student who are unable to submit an assignment by the due date must complete the Covid-19 Self-declaration form (see Section X of this document), or have an otherwise valid and documentable reason for absence (e.g. bereavement). Students must contact their assigned Teaching Assistant if they cannot submit their assignment by the due date.

Worksheets (no credit): Students will be provided problem worksheets to allow them to practice the application of concepts and methods learned in the course. These worksheets prepare students for quizzes and assignments.

VIII Course schedule

Below is each module topic and the dates by which students should complete each module. **Students should complete modules by these dates in order to successfully complete quizzes and assignments.**

Module	Topic	Assigned Reading	Complete Before
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Part 1: Variables and Descriptive Statistics

1.1	Introduction	Weblinks posted on cuLearn	January 22
1.2	Variables and Measurement	Garner, pp. 29-54	January 22
1.3	Descriptive Statistics I	Garner, pp. 55-57; 70-73	January 22
1.4	Descriptive Statistics II	Garner, pp. 58-69; 74-86	February 5

Part 2: Statistical Inference

2.1	Probability and statistical inference	Garner, pp. 87-106	February 12
2.2	The central limit theorem	Garner, pp. 106-127	February 12
2.3	Standard error/confidence intervals	Garner, pp. 128-135	February 12
2.4	Hypothesis testing	Garner, pp. 135-150	February 26

Part 3: Analyzing Relationships between Two Variables

3.1	Difference of means	Garner, pp. 153-159	February 26
3.2	Cross-tabulation	Garner, pp. 191-199	February 26
3.3	Measures of association	Weblinks posted on cuLearn	February 26

3.4	Measures of association	Weblinks posted on cuLearn	February 26
3.5	Correlation	Garner, pp. 166-173	March 12
3.6	Regression	Garner, pp. 173-186	March 12

Part 4: Multivariate Analysis

4.1	The Elaboration Paradigm	Garner, pp. 159-165	March 26
4.2	Multiple Regression	Garner, pp. 186-190	April 9
4.3	Regression Diagnostics	Weblinks posted on cuLearn	April 9

IX Policies and Procedures

Email: Students must use Carleton University email accounts for all their correspondence with instructor or teaching assistant. **Indicate the course number (PSCI 2702A) in your email.** Students' first point of contact should be their assigned teaching assistants.

Late Penalties: Assignments are due on the dates specified in the course outline. *All assignments not submitted by the due date will be considered late.* Late assignments will be subject to a penalty of 5% per day thereafter, with a maximum late penalty of up to 25%. Assignments that are more than two weeks past the due date will not be accepted.

No extensions on assignments will be granted after their due dates. Exceptions will be made only in those cases of special circumstances, (e.g. illness, bereavement) and where the student has verifiable documentation.

Accommodations: Students requiring accommodations other than those outlined in the "Academic Accommodations" section of this document should speak with the instructor in the **first week** of the course.

Appeals: A grade appeal form will be provided on cuLearn. Students who wish to appeal a grade should fill out the form and submit it to their teaching assistant within one week of receiving the grade. If a student is not satisfied with the response to their appeal, they should resubmit the appeal to the course instructor.

Sharing Course Materials: Teaching and learning activities, including videos, lectures, discussions, presentations, etc., by both instructors and students, are copy protected and remain the intellectual property of their respective author(s). All course materials, including PowerPoint presentations,

outlines, and other materials, are also protected by copyright and remain the intellectual property of their respective author(s).

Students registered in the course may take notes and make copies of course materials for their own educational use only. Students are not permitted to reproduce or distribute lecture notes and course materials publicly for commercial or non-commercial purposes without express written consent from the copyright holder(s).

Recording Lectures: Students are not permitted to record lectures, meetings, office hours, or tutorials without the consent of the instructor.

Collaborative Work: Two or more students are not permitted to submit the same work for evaluation. *Submitting the same assignment as another student will be considered plagiarism.*

X Accommodations during COVID

Due to COVID, instructors will not request or require a doctor's note when students seek accommodation for missed term work or exams due to illness. Instead, students will be asked to complete the self-declaration form available here: https://carleton.ca/registrar/wp-content/uploads/COVID-19_Self-declaration.pdf

XI Academic Accommodations

Accommodations during COVID

Due to COVID, instructors will not request or require a doctor's note when students seek accommodation for missed term work or exams due to illness. Instead, students will be asked to complete the self-declaration form available here: <https://carleton.ca/registrar/wp-content/uploads/self-declaration.pdf>

Academic Accommodations

Pregnancy

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Religious obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks

of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made.

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and its survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.

<https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

For more information on academic accommodation, please contact the departmental administrator or visit: students.carleton.ca/course-outline

Plagiarism

The University Senate defines plagiarism as “presenting, whether intentional or not, the ideas, expression of ideas or work of others as one’s own.” This can include:

- reproducing or paraphrasing portions of someone else’s published or unpublished material, regardless of the source, and presenting these as one’s own without proper citation or reference to the original source;

- submitting a take-home examination, essay, laboratory report or other assignment written, in whole or in part, by someone else;
- using ideas or direct, verbatim quotations, or paraphrased material, concepts, or ideas without appropriate acknowledgment in any academic assignment;
- using another's data or research findings;
- failing to acknowledge sources through the use of proper citations when using another's works and/or failing to use quotation marks;
- handing in "substantially the same piece of work for academic credit more than once without prior written permission of the course instructor in which the submission occurs.

Plagiarism is a serious offence which cannot be resolved directly with the course's instructor. The Associate Deans of the Faculty conduct a rigorous investigation, including an interview with the student, when an instructor suspects a piece of work has been plagiarized. Penalties are not trivial. They may include a mark of zero for the plagiarized work or a final grade of "F" for the course.

More information on the University's Academic Integrity Policy can be found at:

<https://carleton.ca/registrar/academic-integrity/>

Intellectual property

Student or professor materials created for this course (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the author(s). They are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).