

PSCI 2702B

Quantitative Research Methods in Political Science

Wednesday, 11:35 a.m. – 2:25 p.m.
Course location available on Carleton Central

I General information

Instructor: Steve White
Office: B657 LA(Loeb)
Office Hours: Wednesdays, 2:30–3:30 p.m., or by appointment (in person, or via Zoom)
Email: StephenWhite@cunet.carleton.ca

All email communication is to be via official Carleton university e-mail accounts and/or Brightspace, 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 must 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

Weekly lectures will focus on topics identified in the schedule. The weekly assigned readings complement the lectures; you are not required to read these in advance of the class, but you are expected to keep up with the weekly readings. Students gain knowledge cumulatively in this course: the course will be *much* more challenging for students who do not attend lectures regularly and/or do not keep pace with the course reading schedule. **Students who do not regularly attend class usually struggle to receive credit for this course.** There are no scheduled tutorials outside of lecture time. In effect, the final hour of most lectures will act as a tutorial. During this period, you will get hands-on experience with data analysis as the instructor guides you in using analytical software ([Stata](#)) to complete the course assignments. You will also receive help with course exercises during this period.

Teaching assistants will provide extra support. Their contact information and hours of availability will be posted on Brightspace.

All assigned work will be submitted via Brightspace.

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 and Course Materials

Required Text:

Lane, David M., Editor. Introduction to Statistics, Online Edition. This is a public domain textbook available for free at: <https://open.umn.edu/opentextbooks/textbooks/459>

Other Materials:

Other required course readings will be available online through the Ares library reserve system on Brightspace, or through other weblinks provided on Brightspace. There are no costs associated with these readings.

Students will be using the statistical software package Stata SE (version 18), available for download and off campus use at no cost to students through Carleton: <https://i.carleton.ca/its-software/stata-se/>. This software is also available on desktops in computer labs on campus.

VI Evaluation at a glance

Component	Value	Due Date
Online Quiz	2.5%	Administered on Brightspace January 23-24
Assignment 1: Variable proposals	10%	Submitted on Brightspace January 31
Assignment 2: data collection and coding	10%	Submitted on Brightspace February 14
Midterm Test	30%	Administered in class February 26
Assignment 3: data analysis	10%	Submitted on Brightspace March 28
Online Quiz	2.5%	Administered on Brightspace March 13-14
Final Examination	35%	Administered in the University Examination Period

VII Evaluation in detail

Online Quizzes (two @ 2.5% each): Short quizzes will be administered on Brightspace and will consist of several multiple-choice questions covering the lectures and their associated readings. Students will have 30 minutes from the time they begin to complete the quiz and submit their responses. No make-up quizzes will be administered. **The first quiz will open at 8:00 a.m. on January 23, closing at 9:00p.m. on January 24. Students may complete the first quiz at any time within that period. The second quiz will open at 8:00 a.m. on March 13, closing at 9:00p.m. on March 14. Students may complete the second quiz at any time within that period.**

Assignments (three @ 10% each): Three assignments are designed to give students hands-on experience with quantitative data analysis. The assignments will ask students to collect, analyze and interpret quantitative data using the skills developed in the course. Student who are unable to submit an assignment by the due date must have a valid and documentable reason for absence (e.g. bereavement). Students must contact the instructor if they cannot submit their assignment by the due date.

Exercises (no credit): Students will be provided sets of exercises designed to allow them to practice the application of concepts and methods learned in the course. These worksheets prepare students for the midterm test and final examination.

Midterm test (30%): The midterm test will consist of short answer questions. It will cover all assigned readings and lectures up to the date of the test.

Final examination (35%): The final examination will take place in the Examination Period, at a date, time, and location assigned by the University. The examination will consist of short answer questions. It will cover all assigned readings and lectures. Students will be provided with a study guide on Brightspace before the examination.

VIII Course schedule

Date	Lecture Topic(s)	Assigned Reading	Assigned Work
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Jan 8	Introduction	None	
Jan 15	<ul style="list-style-type: none"> • Social science, variables, and measurement • Introduction to assignment one 	<ul style="list-style-type: none"> • Chapter 1 in Lane 	<ul style="list-style-type: none"> • Assignment One • Exercise Set One
Jan 22	<ul style="list-style-type: none"> • Describing distributions 	<ul style="list-style-type: none"> • Chapter 3 in Lane 	<ul style="list-style-type: none"> • Assignment One • Exercise Set Two
Jan 29	<ul style="list-style-type: none"> • Probability • Statistical inference • The central limit theorem • Introduction to assignment two 	<ul style="list-style-type: none"> • Wheelan reading (on Ares) • Chapter 9 in Lane, pages 299-310 	<ul style="list-style-type: none"> • Assignment Two • Exercise Set Three
Feb 5	<ul style="list-style-type: none"> • Standard error • Confidence intervals • Hypothesis testing 	<ul style="list-style-type: none"> • Chapter 10 in Lane, pages 337-348 • Chapter 11 in Lane 	<ul style="list-style-type: none"> • Assignment Two • Exercise Set Four
Feb 12	<ul style="list-style-type: none"> • Relationships between two variables • Difference of means • ANOVA 	<ul style="list-style-type: none"> • Chapter 4 in Lane, pages 165-169 • Chapter 12 in Lane • Chapter 15 in Lane, pages 516-520 	<ul style="list-style-type: none"> • Assignment Two • Exercise Set Five
Feb 19	<ul style="list-style-type: none"> • Break 	None	None
Feb 26	<ul style="list-style-type: none"> • Midterm test 	None	None
Mar 5	<ul style="list-style-type: none"> • Cross-tabulation and measures of association • Introduction to assignment three 	<ul style="list-style-type: none"> • Chapter 17 in Lane • Weblinks posted on Brightspace 	<ul style="list-style-type: none"> • Assignment Two • Exercise Set Six
Mar 12	<ul style="list-style-type: none"> • Correlation • OLS Regression 	<ul style="list-style-type: none"> • Chapter 4 in Lane, pages 170-177 • Chapter 14 in Lane, pages 462-467 and 495-508 	<ul style="list-style-type: none"> • Assignment Two • Exercise Set Seven
Mar 19	<ul style="list-style-type: none"> • The Elaboration Paradigm 	<ul style="list-style-type: none"> • Babbie reading (on Ares) 	<ul style="list-style-type: none"> • Assignment Two • Exercise Set Eight
Mar 26	<ul style="list-style-type: none"> • The Elaboration Paradigm in Practice 	<ul style="list-style-type: none"> • No readings assigned 	<ul style="list-style-type: none"> • Assignment Two • Exercise Set Eight
April 2	<ul style="list-style-type: none"> • Multiple regression diagnostics • Review 	<ul style="list-style-type: none"> • Chapter 14 in Lane, pages 476-494 	<ul style="list-style-type: none"> • Exercise Set Nine

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 2702B) 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 10% per day thereafter, with a maximum late penalty of up to 30%. 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 very exceptional 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 Brightspace. 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.*

Use of Artificial Intelligence: *the use of generative artificial intelligence (AI) tools to produce assessed content is not permitted in this course.* It is considered a violation of academic integrity standards. Please refer to the policy in the Appendix of this document.

Appendix

REQUESTS FOR ACADEMIC ACCOMMODATION

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Student Mental Health

As a university student, you may experience a range of mental health challenges that significantly impact your academic success and overall well-being. If you need help, please speak to someone. There are numerous resources available both on- and off-campus to support you. Here is a list that may be helpful:

Emergency Resources (on and off campus):

<https://carleton.ca/health/emergencies-and-crisis/emergency-numbers/>

Carleton Resources:

Mental Health and Wellbeing:

<https://carleton.ca/wellness/>

Health & Counselling Services: <https://carleton.ca/health/>

Paul Menton Centre: <https://carleton.ca/pmc/>

Academic Advising Centre (AAC):

<https://carleton.ca/academicadvising/>

Centre for Student Academic Support (CSAS):

<https://carleton.ca/csas/>

Equity & Inclusivity Communities:

<https://carleton.ca/equity/>

Off Campus Resources:

Distress Centre of Ottawa and Region: (613) 238-3311 or
TEXT: 343-306-5550, <https://www.dcottawa.on.ca/>

Mental Health Crisis Service: (613) 722-6914, 1-866-996-0991, <http://www.crisisline.ca/>

Empower Me: 1-844-741-6389,

<https://students.carleton.ca/services/empower-me-counselling-services/>

ood2Talk: 1-866-925-5454, <https://good2talk.ca/>

The Walk-In Counselling Clinic:

<https://walkincounselling.com>

Academic consideration for medical or other extenuating circumstances: Students must contact the instructor(s) of their absence or inability to complete the academic deliverable within the predetermined timeframe due to medical or other extenuating circumstances. For a range of medical or other extenuating circumstances, students may use the online self-declaration form and where appropriate, the use of medical documentation. This policy regards the accommodation of extenuating circumstances for both short-term and long-term periods and extends to all students enrolled at Carleton University.

Students should also consult the [Course Outline Information on Academic Accommodations](#) for more information. Detailed information about the procedure for requesting academic consideration can be found [here](#).

Pregnancy: 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 accommodation regarding a formally-scheduled final exam, please contact Equity and Inclusive Communities (EIC) at equity@carleton.ca or by calling (613) 520-5622 to speak to an Equity Advisor.

Religious obligation: 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 [click here](#).

Academic Accommodations for Students with Disabilities: The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, please request your accommodations for this course through the [Ventus Student Portal](#) at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (*if applicable*). Requests made within two weeks will be reviewed on a case-by-case basis. For final exams, the deadlines to request accommodations are published in the [University Academic Calendars](#). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally scheduled exam (*if applicable*).

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: <https://carleton.ca/equity/sexual-assault-support-services>.

Accommodation for 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 will be provided to students who compete or perform at the national or international level. Write to me 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.

PETITIONS TO DEFER

Students unable to write a final examination because of illness or other circumstances beyond their control may apply within **three working days** to the Registrar's Office for permission to write a deferred examination. The request must be fully supported by the appropriate documentation. Only deferral petitions submitted to the Registrar's Office will be considered. [See Undergraduate Calendar, Article 4.3](#)

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). Permissibility of submitting substantially the same piece of work more than once for academic credit. If group or collaborative work is expected or allowed, provide a clear and specific description of how and to what extent you consider collaboration to be acceptable or appropriate, especially in the completion of written assignments.

WITHDRAWAL WITHOUT ACADEMIC PENALTY

The last day to withdraw from full fall term and fall/winter courses with a full fee adjustment is September 30th, 2024. The last day for a fee adjustment when withdrawing from winter term courses or the winter portion of two-term courses is January 31, 2025. The last day for academic withdrawal from full fall and late fall courses is November 15, 2024. The last day for academic withdrawal from full winter, late winter, and fall/winter courses is March 15, 2025.

WDN: For students who withdraw after the full fee adjustment date in each term the term WDN will be a permanent notation that appears on their official transcript.

OFFICIAL FINAL EXAMINATION PERIOD

Fall courses: December 9-21, 2024. Winter and Fall/Winter courses: April 11-26, 2025 (may include evenings & Saturdays or Sundays)

For more information on the important dates and deadlines of the academic year, consult the [Carleton 2024-2025 Calendar](#).

GRADING SYSTEM

The grading system is described in the Undergraduate Calendar section [5.4](#).

ACADEMIC INTEGRITY

Academic integrity is an essential element of a productive and successful career as a student. Students are required to familiarize themselves with the university's [Academic Integrity Policy](#).

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:

- any submission prepared in whole or in part, by someone else, including the unauthorized use of generative AI tools (e.g., ChatGPT);
- reproducing or paraphrasing portions of someone else’s published or unpublished material, 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 that cannot be resolved directly by the course’s instructor. The Associate Dean of the Faculty conducts 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 can include a final grade of “F” for the course.

RESOURCES (613-520-2600, phone ext.)	
Department of Political Science (2777)	B640
Loeb	
Registrar's Office (3500)	300 Tory
Centre for Student Academic Success (3822)	4 th floor
Library	
Academic Advising Centre (7850)	302 Tory
Paul Menton Centre (6608)	501
Nideyinàn	
Career Services (6611)	401 Tory