

## PSCI 2702B

### Quantitative Research Methods in Political Science

Monday, 9:35 a.m. – 11:25 a.m.

Course location available on Carleton Central

#### I General information

Instructor: Steve White

Office: D696 LA(Loeb)

Office Hours: Wednesdays, 12:30-2:30 p.m., or by appointment (in person, or via Zoom)

Email: [steve.white@carleton.ca](mailto:steve.white@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.** Tutorials will be held during weeks identified in the schedule. The tutorials are designed to give you hands-on experience with data analysis using analytical software in order to complete the course assignments.

Tutorials are an essential component of this course. Your TA will help you understand the course material and prepare for assignments, the quiz, midterm test, and final examination by guiding you through online labs and worksheets.

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

**Required Text:** Garner, Roberta, and Michael Ash. 2022. *The Joy of Stats* (Third Edition). University of Toronto Press. ISBN 9781487527297.

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

- University of Toronto Press (print and e-book): <https://utorontopress.com/9781487527297/the-joy-of-stats/>
- 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 Brightspace, or through other weblinks provided on Brightspace.

Students who wish to use the second edition of *The Joy of Stats* may do so, but are advised to contact the instructor for second edition reading page numbers.

## VI Evaluation at a glance

Component	Value	Due Date
Online Quiz	5%	Administered on Brightspace January 25-26
Tutorial attendance	5%	Tutorials begin January 8
Assignment 1: data collection and coding	15%	Submitted on Brightspace January 30
Midterm Test	25%	Administered in class February 26
Assignment 2: multivariate analysis	15%	Submitted on Brightspace April 9
Final Examination	35%	Administered in the University Examination Period

## VII Evaluation in detail

**Tutorial attendance (5%):** Students are expected to attend at least ten of the twelve tutorials held during the semester. Students receive 0.5% for each full tutorial attended to a maximum of 5% total. *In cases where a student is absent for more than two tutorials, the student will contact the instructor.* Only in exceptional cases will more than two absences be accommodated. Students who miss tutorials are responsible for materials covered in tutorials. Make-up sessions will not be held.

**Online Quiz (5%):** A short quiz will be administered on Brightspace and will consist of several multiple-choice questions covering the first two 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 quiz will open at 8:00 a.m. on January 25, closing at 9:00p.m. on January 26. Students may complete the quiz at any time within that period.*

**Assignments (30%):** Two 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 their assigned Teaching Assistant if they cannot submit their assignment by the due date.

**Exercises (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 the midterm test and final examination. You will have an opportunity to work on these in tutorials.

**Midterm test (25%):** 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	Tutorial Topic(s)
<b>Part 1: Variables and Descriptive Statistics</b>			
Jan 8	Introduction	None	Assignment One
Jan 15	Variables and Measurement	Garner (3 <sup>rd</sup> Ed), pp. 26-53	Assignment One

Jan 22	Descriptive Statistics	Garner (3 <sup>rd</sup> Ed), pp. 61-92	Assignment One
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**Part 2: Statistical Inference**

Jan 29	Probability Statistical inference The central limit theorem	Garner (3 <sup>rd</sup> Ed), pp. 147-174 Garner (3 <sup>rd</sup> Ed), pp. 175-196	Assignment One/Exercises
Feb 5	Standard error Confidence intervals	Garner (3 <sup>rd</sup> Ed), pp. 203-214	Exercises
Feb 12	Hypothesis testing Difference of means ANOVA	Garner (3 <sup>rd</sup> Ed), pp. 214-235 Garner (3 <sup>rd</sup> Ed), pp. 313-325	Exercises

**Part 3: Analyzing Relationships between Two Variables**

Feb 26	Midterm test		No tutorial
Mar 4	Cross-tabulation	Garner (3 <sup>rd</sup> Ed), pp. 335-355 Weblinks posted on Brightspace	Exercises
Mar 11	Measures of association	Weblinks posted on Brightspace	Exercises
Mar 18	Correlation OLS Regression	Garner (3 <sup>rd</sup> Ed), pp. 249-290	Assignment Two

**Part 4: Multivariate Analysis**

Mar 25	Multiple Regression Regression Diagnostics	Garner (3 <sup>rd</sup> Ed), pp. 373-384 Weblinks posted on Brightspace	Assignment Two
April 1	The Elaboration Paradigm	Garner (3 <sup>rd</sup> Ed), pp. 384-391	Assignment Two
April 8	Review/make-up class	No assigned readings  This class will be used to review the course, and/or to complete unfinished course material	Assignment Two

## 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**

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### **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/>
- Good2Talk: 1-866-925-5454, <https://good2talk.ca/>
- The Walk-In Counselling Clinic: <https://walkincounselling.com>

## **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:

**Academic consideration for medical or other extenuating circumstances:** Please contact your instructor if you are experiencing circumstances that (a) are beyond your control, (b) have a significant impact your capacity to meet your academic obligations, and (c) could not have reasonably been prevented. Decisions on academic consideration are in your instructor's discretion; they will be guided by the course learning outcomes and the principle of good faith. Please see [here](#) for more details. For considerations relating to course work, your instructor may request that you complete the [Self-Declaration form](#). To apply for a deferral of your final exam, you must submit the Self-Declaration form to the Registrar's Office no later than three days after the scheduled examination or take-home due date.

**Pregnancy accommodation:** 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 accommodation regarding a formally-scheduled final exam, you must complete the Pregnancy Accommodation Form ([click here](#)).

**Religious accommodation:** 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 [click here](#).

**Accommodations for 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](mailto: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, reach out to your instructor as soon as possible to ensure accommodation arrangements are made. For more details, [click here](#).

**Accommodation for student activities:** Carleton University recognizes the substantial benefits, both to the individual student and to the university, that result from a student participating in activities beyond the classroom. Reasonable accommodation will be provided to students who engage in student activities 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. For more information, please [click here](#).

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

### **Sexual Violence Policy**

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated. 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](http://carleton.ca/sexual-violence-support).

### **Academic Integrity**

Academic integrity is an essential element of a productive and successful career as a student. Carleton's [Academic Integrity Policy](#) addresses academic integrity violations, including plagiarism, unauthorized collaboration, misrepresentation, impersonation, withholding of records, obstruction/interference, disruption of instruction or examinations, improper access to and/or dissemination of information, or violation of test and examination rules. Students are required to familiarize themselves with the university's academic integrity rules.

### ***Plagiarism***



The Academic Integrity Policy defines plagiarism as “presenting, whether intentional or not, the ideas, expression of ideas or work of others as one’s own.” This includes 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. Examples of sources from which the ideas, expressions of ideas or works of others may be drawn from include, but are not limited to: books, articles, papers, websites, literary compositions and phrases, performance compositions, chemical compounds, art works, laboratory reports, research results, calculations and the results of calculations, diagrams, constructions, computer reports, computer code/software, material on the internet and/or conversations.

Examples of plagiarism include, but are not limited to:

- Any submission prepared in whole or in part, by someone else;
- Using ideas or direct, verbatim quotations, paraphrased material, algorithms, formulae, scientific or mathematical concepts, or ideas without appropriate acknowledgment in any academic assignment;
- Using another’s data or research findings without appropriate acknowledgement;
- Submitting a computer program developed in whole or in part by someone else, with or without modifications, as one’s own; and
- failing to acknowledge sources through the use of proper citations when using another’s work and/or failing to use quotations marks.

### ***Use of Artificial Intelligence***

Unless explicitly permitted by the instructor in a particular course, any use of generative artificial intelligence (AI) tools to produce assessed content (e.g., text, code, equations, image, summary, video, etc.) is considered a violation of academic integrity standards.

### ***Procedures in Cases of Suspected Violations***

Violations of the Academic Integrity Policy are serious offences which cannot be resolved directly with the course’s instructor. When an instructor suspects a violation of the Academic Integrity Policy, the Associate Dean of the Faculty conducts a rigorous investigation, including an interview with the student. Penalties are not trivial. They may include a mark of zero for the assignment/exam in question 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).

## **Submission and Return of Term Work**

Papers must be submitted directly to the instructor according to the instructions in the course outline. The departmental office will not accept assignments submitted in hard copy.

## **Grading**

Standing in a course is determined by the course instructor, subject to the approval of the faculty Dean. Final standing in courses will be shown by alphabetical grades. The system of grades used, with corresponding grade points is:

<b>Percentage</b>	<b>Letter grade</b>	<b>12-point scale</b>	<b>Percentage</b>	<b>Letter grade</b>	<b>12-point scale</b>
90-100	A+	12	67-69	C+	6
85-89	A	11	63-66	C	5
80-84	A-	10	60-62	C-	4
77-79	B+	9	57-59	D+	3
73-76	B	8	53-56	D	2
70-72	B-	7	50-52	D-	1

Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by an instructor may be subject to revision. No grades are final until they have been approved by the Dean.

## **Carleton E-mail Accounts**

All email communication to students from the Department of Political Science will be via official Carleton University e-mail accounts and/or Brightspace. As important course and university information is distributed this way, it is the student's responsibility to monitor their Carleton University email accounts and Brightspace.

## **Carleton Political Science Society**

The Carleton Political Science Society (CPSS) has made its mission to provide a social environment for politically inclined students and faculty. By hosting social events, including Model Parliament, debates, professional development sessions and more, CPSS aims to involve all political science students at Carleton University. Our mandate is to arrange social and academic activities in order to instill a sense of belonging within the Department and the larger University community. Members can benefit through our networking opportunities, academic engagement initiatives and numerous events which aim to complement both academic and social life at Carleton University. To find out more, visit us on Facebook <https://www.facebook.com/CarletonPoliticalScienceSociety/>.

## **Official Course Outline**

The course outline posted to the Political Science website is the official course outline.