PSCI 2702(D): Quantitative Research Methods in Political Science

Lecture Time: Mondays at 14:35 – 16:25
Location: Southam Hall [Room: SA 416]
(10 January to 11 April)
Department of Political Science: https://carleton.ca/polisci/

While face-to-face classes at Carleton remain suspended because of COVID-19, this course will meet in a synchronous online format via Zoom. Please find access information on Brightspace.

Instructor: Michael E. Campbell
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Office Hours: Mondays 12:00 – 14:00
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Course Description:

This course provides students with the information needed to develop a strong understanding of quantitative research methods. Foundational concepts and formulas that undergird approaches to statistical analysis will be examined in-depth. As the course progresses, students will be introduced to various techniques that will help them evaluate and assess primary, numerical data. Overtime, students should begin to appreciate the value of quantitative research methods, while also recognizing some of the major strengths and limitations that are associated with such approaches. In addition, students will also learn how to interpret data and employ statistical techniques using analytic software (SPSS). To accomplish this, instruction will be both theoretical (i.e., lectures) and practical (i.e., tutorials). By the end of the course, students should be able to comprehend and conduct formal quantitative data analysis in political science and other related disciplines.

Course Objectives:

The primary objective of the course is to highlight the value of quantitative research methods. To do this, five sub-objectives must first be realized:

(1) Understand the purpose of social scientific research

(2) Study foundational concepts and operations associated with empirical data analysis

(3) Learn various statistical techniques used for data analysis

(4) Gain the ability to interpret and evaluate primary data

(5) Administer appropriate quantitative research techniques using analytical software (SPSS)

Format:

There are weekly lectures for this course. Each lecture covers a different topic related to quantitative research. In addition, there are also weekly tutorials. In these tutorials, students are

given the opportunity to develop more practical skills by learning how to use statistical analysis software (SPSS). Students will be introduced to some of the basic functions of SPSS, which will grant them the ability to evaluate the features of certain variables, as well as the potential relationship(s) that exist between them. Lecture topics, tutorial exercises, and assignments have been designed and organized to demonstrate the logical and systematic processes that guide researchers from the development of broad research questions, through the conceptualization and operationalization of major ideas, to hypothesis testing using appropriate statistical techniques. Noting this, every component of this course is complementary. This means that missing lectures or tutorials, or not completing assigned readings or assignments, will affect one's overall performance.

Office Hours and Communication:

- Office hours are every Monday from 12:00 to 14:00.
- All e-mail communications must be sent from a valid Carleton University e-mail account.
- If students communicate with a TA via-email, they must CC the instructor on that e-mail.

Course Materials:

Required Texts:
Healey, Joseph F., Steven Prus, Riva Lieflander, and Riva Lieflander. 2018. *Statistics: A Tool for Social Research*, 4th ed. Toronto, ON: Nelson.

Required Software:
SPSS Software is required for this course and is offered for free by the university. It can be downloaded by following the instructions in the link below.

https://carleton.ca/its/all-services/computers/site-licensed-software/spss/

Course Evaluation:

Course assignments and general grading criteria are outlined below. Additional information on final letter grades and the percentage equivalents are presented in the **Additional Information** section of this syllabus. In addition, please note that according to the Faculty Grading Guidelines: "*Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by the instructor may be subject to revision. No grades are final until they have been approved by the Dean.*"

(1) *Overview*:

Assignment	Percent of Final Grade	Due Date
Tutorial Attendance	5%	No Due Date (ongoing)
Assignment 1	10%	7 February
Mid-Term	20%	14 February
Assignment 2	15%	14 March
Assignment 3	20%	11 April
Final Exam	30%	T.B.A. (btw. 14 – 18 April)

(2) *Assignments - Basic Details***:**

(A) Tutorial Attendance (no due date): Attending lectures and tutorials is expected. However, attendance is only graded for tutorials. If you attend every tutorial, you will receive 5% towards your final grade. With that said, success in this course depends on consistent attendance in both lectures and tutorials. If you are absent in either lecture or tutorial, you will forego information that is required for a strong performance on course assignments and examinations.

(B) Working With Data (Assignment 1) (7 February):

Students will work with the Quality of Government (2020) *Standard Dataset*. The assignment requires that students: (a) select a research topic and develop a sound research question; (b) conceptualize and operationalize major ideas found in this question, turning them into concrete measures; (c) select variables that reflect operational definitions (i.e., independent, dependent, and control variables); (d) run summary statistics on selected variables using SPSS; and (e) evaluate and explain pertinent characteristics of selected data. This assignment will serve as the foundation on which the proceeding two assignments are built.

The Quality of Government Standard Dataset and Codebook can be found here:

https://www.gu.se/en/quality-government/qog-data/data-downloads/standard-dataset

(C) Mid-Term (14 February):

This midterm will be given in class. The mid-term will include questions based on information that has been covered in lectures and assigned readings up to 14 February.

(D) Filtering and Transforming Data (Assignment 2) (7 March):

Using the Quality of Government dataset and SPSS software, students will build their own datasets by filtering out unnecessary data. To guide this process, students will develop a few *testable* hypotheses. These hypotheses are to be based off the research questions and variables students selected in Assignment 1. Students will then select an appropriate sample set consisting of approximately 15 countries. Unnecessary cases will also be filtered out. In addition, variables will be transformed as needed. Once complete, students will have a small dataset with which they can begin the process of hypothesis testing (in Assignment 3).

(E) Hypothesis Testing (Assignment 3) (4 April):

In the final assignment, students will use the dataset they developed in the previous assignment to begin hypothesis testing. To do this, students will run a series of bivariate tests to assess and evaluate the potential relationship(s) that exist between their independent and dependent variables. In addition, students will also run a multivariate regression test using control variables. This will help determine the extent to which extraneous variables are responsible for variation in the dependent variable. Students will then report their results, and comment on their findings.

(F) Final Exam (T.B.A.) (During final exam period 14-18 April):

The final exam will take place during the University's exam period and will include questions based on information that has been covered in the lectures and assigned readings throughout the semester.

(3) *Late Submission Policy***:**

Any assignments that are submitted after the above-stated due dates, and without valid reason for extension, will be penalized five percent (5%) per day. Furthermore, any assignment submitted seven days following the stated due date will not be accepted. This will result in an immediate grade of zero (F). Please note that any assignment submitted seven days late will be penalized 35%. In such cases, even if a student manages to submit a perfectly written assignment seven days late, the maximum grade they can receive on that assignment is C.

Extensions will be granted on a case-by-case basis, and at the discretion of the course instructor. Any requests for extensions must be submitted to the instructor at least 48-hours before an assignment's indicated due date. This requirement will only be waived in the event of emergency. Valid reasons for extension include medical or emergency situations. In many cases, this will require supporting documentation – usually in the form of a doctor's note. Given the current situation concerning COVID-19, students who encounter problems related to this may also request academic accommodation by completing and submitting Carleton's "Covid-19 – Self-Declaration for Academic Accommodation." A link directing students to this form is found here: https://carleton.ca/psychology/wp-content/uploads/COVID-19_ Self-declaration.pdf

Instructor's note on late submissions: Submitting work on-time is very much an assignment in and of itself because it affects the final grade a student will receive. In the experience of the course instructor, some students believe that they can improve their work by spending more time on it after the due date has passed. The overriding logic seems to be that the penalty they receive for late submission will be less severe than that which they would receive for submitting work of perceived lesser quality. While this is sometimes true, the assumption only holds if the student submits work of superior quality. Any penalty can have a significant impact on a student's final grade. For example, in this course, if a student scores a 89% (A) on an assignment, but submitted it one-day late, their final grade on that assignment will be 84% (A-); if a student scores a 73% (B), but submitted it one-day late, their final grade will be 68% (C+); if a student scores a 54% (D), but submitted it one-day late, they will receive a final grade of 49% (F). The situation only worsens the later the assignment is submitted.

As students' progress through their academic and professional careers, the submission of late work becomes increasingly problematic. For example, if a student pursues a career in academia, they will likely have to present their work at academic or professional conferences; submit their work to academic journals for publication; or, submit written portfolios to funding agencies. Each of these activities requires a substantial amount of effort on behalf of the student. However, late submission of work in these situations does not simply result in the loss of a grade percentage. Instead, late work is completely rejected. In addition to wasting much of their own time, the individual will have lost a valuable opportunity. The same is true in the private sector, where missing a deadline may result in dismissal from one's position. As such, students are encouraged to submit their work on time. If one believes that an assignment requires a substantial amount of effort, the best avenue for success is to start working on that assignment as

early as possible. <u>Meeting deadlines is one of the most important skills a person can develop.</u> <u>Those who appreciate this have a competitive advantage over those who do not.</u>

Weekly Topics and Readings:

Lecture 1 (January 10) – Research Design and Quantitative Research

- Healey, Prus, and Lieflander (2019) – Chapter 1

- Shivley, W. Phillips. 2013. *The Craft of Political Research*, 9th ed. Sadler River, NJ: Pearson – Chapter 6

Lecture 2 (January 17) – Working with Variables and Thinking About Causality

- Pollock III, Philip H., and Barry C. Edwards. 2019. *The Essentials of Political Analysis*, 6th ed. – Chapter 1

- Bouma, Gary D. and Rod Ling. 2004. *The Research Process*, 5th ed. Oxford, EN: Oxford University Press. – Chapter 4

Lecture 3 (January 24) – Univariate Analysis and Descriptive Statistics

- Healey, Prus, and Lieflander (2019) – Chapters 2 and 3

- Descriptive Statistics | SPSS Annotated Output. UCLA: Statistical Consulting Group. From https://stats.idre.ucla.edu/spss/output/descriptive-statistics/

Lecture 4 (January 31) – The Normal Curve and The Science of Sampling

- Healey et al. (2019) – Chapters 4 and 5

- Nardi, Peter M. 2006. *Doing Survey Research: A Guide to Quantitative Methods*. Boston, MA: Pearson. – Chapter 5

Lecture 5 (February 7) – Estimation Procedures (From Sample to Population)

- Healey, Prus, and Lieflander (2019) – Chapter 6

- Haan, Michael and Jenny Godley. 2013. *An Introduction to Statistics for Canadian Social Scientists*, 2nd ed. Don Mills, ON: Oxford University Press. – Chapter 9

Lecture 6 (February 14) – Midterm

- In-Class Midterm

Winter Break (February 20 to February 26)

Lecture 7 (February 28) – Hypothesis Testing and Statistical Significance

- Healey, Prus, and Lieflander (2019) – Chapters 10 and 11

- Retherford, Robert. D., and Minja Kim Choe. 1993. *Statistical Models for Causal Analysis*. New York, NY: John Wiley and Sons Inc. – Chapter 1

Lecture 8 (March 7) – Bivariate Analysis: Nominal Data

- Healey, Prus, and Lieflander (2019) – Chapter 8

- Nishishiba, Masami, Matthew Jones, and Mariah Kraner. 2014. *Research Methods and Statistics for Public and Non-Profit Administrators: A Practical Guide*. Thousand Oaks, CA: Sage. – Chapter 12

Lecture 9 (March 14) – Bivariate Analysis: Ordinal Data

- Healey, Prus, and Lieflander (2019) – Chapter 9

Lecture 10 (March 21) – Bivariate Analysis: Interval/Ratio Data

- Healey, Prus, and Lieflander (2019) – Chapter 13

Lecture 11 (March 28) – Multivariate Relationships

- Healey, Prus, Lieflander (2019) – Chapter 14

Lecture 12 (April 4) – Multiple Regression

- Bennett, Scott. 1996. *Public Affairs Research Methods: A Quantitative Introduction*. Queenston, ON: The Edwin Mellen Press. – Chapter 11

Lecture 13 (April 11) – Course Review

- No Readings (think about questions you want answered before lecture)

Appendix

Covid-19 Information

All members of the Carleton community are required to follow COVID-19 prevention measures and all mandatory public health requirements (e.g. wearing a mask, physical distancing, hand hygiene, respiratory and cough etiquette) When accessing campus you much fill in the COVID-19 Screening Self-Assessment in cuScreen each day before coming to campus. You must also check-in to your final destination (where you plan on being longer than 15 minutes) within a building using the QR location code.

If you feel ill or exhibit COVID-19 symptoms while on campus or in class, please leave campus immediately, self-isolate, and complete the mandatory symptom reporting tool. For purposes of contact tracing, attendance will be recorded in all classes and labs. Participants can check in using posted QR codes through the cuScreen platform where provided. Students who do not have a smartphone will be required to complete a paper process as indicated on the COVID-19 website.

All members of the Carleton community are required to follow guidelines regarding safe movement and seating on campus (e.g. directional arrows, designated entrances and exits, designated seats that maintain physical distancing). In order to avoid congestion, allow all previous occupants to fully vacate a classroom before entering. No food or drinks are permitted in any classrooms or labs.

For the most recent information about Carleton's COVID-19 response and required measures, please see the University's COVID-19 webpage and review the Frequently Asked Questions (FAQs). Should you have additional questions after reviewing, please contact covidinfo@carleton.ca

Please note that failure to comply with University policies and mandatory public health requirements, and endangering the safety of others are considered misconduct under the Student Rights and Responsibilities Policy. Failure to comply with Carleton's COVID-19 procedures may lead to supplementary action involving Campus Safety and/or Student Affairs.

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:

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 more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf.

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, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf.

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 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 information, please visit carleton.ca/pmc.

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 must 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. 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.

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.

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 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, 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.

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).

Submission and Return of Term Work

Papers must be submitted directly to the instructor according to the instructions in the course outline. During the COVID-19 pandemic, 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:

Percentage	Letter grade	12-point scale	Percentage	Letter grade	12-point scale
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.