

PSCI 2702 (A)
A Statistical Toolkit for Political Scientists
Thursdays 14:35 – 16:25
Fall 2026 - September 9 to December 11
Location: ONLINE – See Lecture Link Via-Brightspace

I General information

Instructor: Dr. Michael E. Campbell
Office Hours: Fridays 9:00 to 11:00
Email: MichaelECampbell@cunet.carleton.ca

Teaching Assistants:

- (1) Rohit Samaroo (RohitSamaroo@cmail.carleton.ca) – Sections A01 and A03
(2) Nicolas Bremner (NickBremner@cmail.carleton.ca) – Section A02

II Course description

This course provides students with a comprehensive knowledge of quantitative research methods. It covers foundational concepts and formulas essential for effective empirical analysis of political phenomena. As the course progresses, students will be introduced to various statistical techniques to help them evaluate and assess numerical data. Students will also acquire skills in interpreting data and applying statistical techniques using analytic software. Together, this knowledge should help students appreciate the importance of quantitative research methods, while also providing insight into their key advantages and limitations. Instruction will be delivered through a combination of theoretical lectures and practical tutorials. By the end of the course, students will have a solid foundation in conducting formal quantitative data analysis in political science and other related disciplines.

III Course Format

This course is delivered synchronously ONLINE (see Course Schedule).

There are weekly online lectures and tutorials. **Lectures** provide information related to the theories and formulas that form the foundation for quantitative methods and introduces students to some of the statistical analysis software that is necessary for empirical political analysis. **Tutorials** provide hands-on experience with SPSS statistical analysis software to students. During tutorials, students will learn basic statistical analysis using SPSS software. This will award students the ability to assess the features of certain variables while also exploring potential relationships between them.

The course structure comprises lectures, tutorials, assignments, and exams. Altogether, the course material will provide knowledge of the logical and systematic processes underpinning empirical political research. This includes developing research questions, conceptualizing and operationalizing abstract ideas, describing data, and hypothesis testing using appropriate statistical techniques. Each component of this course is interconnected. Missing lectures or tutorials or neglecting assigned readings or assignments will impact overall performance.

IV Learning outcomes

By the end of this course, students will:

1. Understand the value and advantages of empirical social scientific research
2. Comprehend foundational concepts and operations associated with quantitative methods
3. Interpret and evaluate primary data effectively
4. Apply statistical techniques used for data analysis and hypothesis testing
5. Understand and interpret quantitative output generated by statistical software

V Course Materials

In this course, there is a required textbook that can be purchased either from the university bookstore or online. There is also required dataset and analytical software that can be downloaded from the university website. In addition, given that this is an online course with exams, students must also download *Comas* e-proctoring software.

Required Texts:

- Healey, Joseph F., Christopher Donoghue, and Steven Prus. 2023. *Statistics: A Tool for Social Research*, 6th ed. Toronto, ON: Cengage.
- *Approximate Cost:*
 - E-Textbook: \$77.95
 - Hardcopy Textbook: \$145.95

Required Dataset Download:

- The following dataset is required to complete your assignment:
<https://www.v-dem.net/data/the-v-dem-dataset/country-year-v-dem-fullothers-v16/>
- Please follow the instructions on the website and select “SPSS” format when downloading.

Required Analytical Software:

- SPSS Software is required for this course and is offered for free by the university. In addition to being provided on university computers, it can be downloaded on student devices by following the instructions in the link below:

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

<https://carleton.ca/ses/online-exams/e-proctoring/comas-downloads/>

VI Evaluation at a glance

Evaluation in this course is based on tutorial attendance, assignments, and exams. Additional information on final letter grades and the percentage equivalents is presented in the **Appendix** of this syllabus.

Evaluation Criteria		
Assignment	Percent of Final Grade	Due Date
Tutorial Attendance	10%	No Due Date (ongoing)
Assignment #1	10%	October 15
Mid-Term	25%	October 22
Assignment #2	20%	December 10
Final Exam	35%	T.B.A. (December 12-23)

VII Evaluation in detail

Note on Use of Artificial Intelligence Policy

In this course, students may use AI tools for basic word processing functions, including grammar and spell checking (e.g. Grammarly, Microsoft Word Editor, Copilot). They may also use it to help them find sources, but the original documents should be referenced and sourced accordingly. Relying on AI tools for summaries is prohibited. It is not necessary to document the use of AI for the permitted purposes listed above. If you have questions about a specific use of AI that is not listed above, please consult your instructor.

This policy ensures that student voices and ideas are prioritized and authentically represented, maintaining the integrity of the work produced by students while allowing basic support to enhance clarity, correctness, layout and flow of ideas. The goal of adopting a limited use of AI is to help students develop foundational skills in writing and critical thinking by practicing substantive content creation without the support of AI.

Note on Late Submissions:

Any assignments that are submitted after the stated due dates, and without valid reason for extension, will be penalized five percent (5%) per day. Any assignments submitted after seven days will not be accepted and result in a zero (0%).

(a) Tutorial Attendance (10%):

Regular attendance to both lectures and tutorials is essential for success in this course. Lectures focus on the theoretical foundations of the course material, while tutorials provide opportunities to develop and apply practical skills using analytical software. Although lecture attendance is not graded, tutorial attendance and participation are assessed. Students will have opportunities to work on assignments throughout the semester during tutorials, with teaching assistants available to provide support and guidance.

TUTORIAL SCHEDULE

Date:	Tutorial Topic:
September 10	No tutorial
September 17	Introduction to SPSS and Data
September 24	Variables and Frequencies
October 01	Descriptive Statistics #1
October 08	Descriptive Statistics #2
October 15	Assignment Review (Assignment #1 Due)
October 22	No tutorial
November 5	Random Sampling and Recoding Variables #1
November 12	Random Sampling and Recoding Variables #2
November 19	Hypothesis Testing #1
November 26	Hypothesis Testing #2
December 3	Hypothesis Testing #3
December 10	Assignment Review (Assignment #2 Due)

(b) Assignment #1 – Working with Data (October 15) (10%):

In this assignment, students will begin working with data from the Varieties of Democracy (V-DEM) dataset. They will select a research topic, develop a research question, operationalize relevant concepts, identify and select appropriate variables, and describe data related to these variables.

(c) Mid-Term (October 22) (25%):

The midterm is during course hours. It is an online exam that will be posted to Brightspace. It will include questions based on information that has been covered in lectures, tutorials, and assigned readings up to and including October 15.

(d) Assignment #2 – Data Transformation and Hypothesis Testing (December 10) (20%):

In this assignment, students will develop and test hypotheses. This will require the selection of a sample set and variable recoding. Students will also run statistical tests to assess and evaluate expected relationships between variables. They will report their results and comment on their findings.

(F) Final Exam (During final exam period) (December 12-21) (35%):

The final exam will take place during the University's exam period (*December 12-23*) and will include questions based on information that has been covered in the lectures and tutorials throughout the semester.

VIII Course schedule

Lecture 1 (September 10) – Introduction to Course

- No reading

Recommended:

- Textbook – Prologue: Basic Mathematics Review

Lecture 2 (September 17) – Introduction to Quantitative Methods

- Textbook – Chapter 1

Lecture 3 (September 24) – Causation and Conceptualization

- Chapter 1 – “The Definition and Measurement of Concepts” in Philip H. Pollock III and Barry C. Edwards. 2019. *The Essentials of Political Analysis*, Sixth ed.
- Chapter 6 (*only pages 73 to 77*) – “Causal Thinking and Design of Research” in W. Phillips Shively. 2013. *The Craft of Political Research*. Ninth Edition. Pearson.

Recommended:

- Chapter 3 – “Causality and Causal Inference” in Gary King, Robert O. Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton University Press.

Lecture 4 (October 1) – Univariate Descriptive Statistics

- Textbook – Chapters 2 and 3

Lecture 5 (October 8) – The Normal Curve and Probability

- Textbook – Chapter 4

Lecture 6 (October 15) – Inferential Statistics and the Sampling Distribution

- Textbook – Chapter 5

Lecture 7 (October 22) – MIDTERM

- No Reading

Fall Break (October 26-30) – No Classes

Lecture 8 (November 5) – Estimation Procedures

- Textbook – Chapter 6

Lecture 9 (November 12) – Hypothesis Testing Using Nominal Variables

- Textbook – Chapter 7

Lecture 10 (November 19) – Hypothesis Testing Using Ordinal Variables

- Textbook – Chapter 8

Lecture 11 (November 26) – One Sample and Two Samples t-Tests

- Textbook – Chapter 9-10

Recommended (for knowledge of ANOVA):

- Textbook – Chapter 11

Lecture 12 (December 3) – Hypothesis Testing Using Interval-Ratio Variables

- Textbook – Chapter 12

Lecture 13 (December 10) – Course Review (Exam Preparation)

- No reading

Political Science Course Outline 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/safety/resources/>

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/>

Good2Talk: 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

Please reference the [Academic Calendar](#) for each term's official withdrawal dates

OFFICIAL FINAL EXAMINATION PERIOD

Please reference the [Academic Calendar](#) for each term's Official Exam Period (may include evenings & Saturdays or Sundays)

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

GRADING SYSTEM

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

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