

**CARLETON UNIVERSITY**  
**DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY**  
**SOCI 3002 A**  
**WINTER 2023**  
**INFERENTIAL STATISTICS IN SOCIAL RESEARCH**

**Instructor:** Professor Steven Prus

**Office Hours:** Tuesday 2:30-3:30pm, or by appointment

**Telephone:** 520-2600, ext. 3760

**Email:** steven\_prus@carleton.ca

**Course Schedule:** Tuesday 11:35am-2:25pm

**Method of Delivery:** Synchronous

**Course Description:**

An introduction to quantitative research methods in sociology, the course focuses on inferential statistics (a branch of statistics concerned with generalizing from a random sample to an unknown population) and multivariate regression analysis (a statistical method used to examine relationships between three or more variables). The two-hour virtual lecture (per class) is designed to provide an essential understanding of these statistical methods. The lecture is followed by a one-hour virtual computer lab, as needed. The course is designed to prepare you for more advanced courses in multivariate statistics. Lectures, tutorials, exams, and office hours will be delivered synchronously (in real-time) through Zoom's video conferencing platform. All lecture material, including recorded lectures, lecture notes, will be posted on Brightspace.

**Pre-requisites:**

**Reading (s)/Textbook (s):** Healey J., C. Donoghue, and S. Prus. 2023. Statistics, A Tool for Social Research, 5<sup>th</sup> Edition. Toronto: Cengage.

**Course Requirements & Methods of Evaluation:**

Assessment *	Weight
Midterm Test (on-line, February 14 at 11:35am-1:05pm)	25%
Final Test (on-line, March 28 11:35am-1:05pm)	25%
Course Paper (due on April 12 at 11:59pm)	25%
Class Attendance	25%

\* Please note:

- tests in this course will use a remote proctoring service provided by Scheduling and Examination Services. You can find more information at <https://carleton.ca/ses/e-proctoring>.

- the self-declaration form (available on the Registrar's Office website) must be completed to request academic accommodation for a missed exam or class attendance. The midterm and final tests will be re-scheduled on the following Saturday: February 18<sup>th</sup> at 6:00-7:30pm and April 1<sup>st</sup> at 6:00-7:30pm respectively. The tests cannot be rescheduled again. Late assignments will be penalized at a rate of 10% of the mark per day, barring completion of the self-declaration form available on the Registrar's Office website. To be fair to everyone in the class, these policies are strictly enforced.
- further details regarding assignments can be found on Brightspace.

In accordance with the Carleton University Undergraduate Calendar Regulations, the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59
A = 85-89	B = 73-76	C = 63-66	D = 53-56
A - = 80-84	B - = 70-72	C - = 60-62	D - = 50-52
F = Below 50	WDN = Withdrawn from the course	DEF = Deferred	

#### **Academic Regulations, Accommodations, Plagiarism, Etc.**

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:

<https://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

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

**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](mailto:pmc@carleton.ca) for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation 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). 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).

\*The deadline for contacting the Paul Menton Centre regarding accommodation for December examinations (Fall) is **November 11, 2022** and for April examinations (Winter) is **March 15, 2023**.

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

**For religious obligations:** 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](#).

**For 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 where 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>

**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. 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>

### **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>

**Plagiarism**

The University Academic Integrity Policy defines plagiarism as “*presenting, whether intentionally 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, artworks, 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 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.

**Pandemic Measures**

It is important to remember that COVID is still present in Ottawa. The situation can change at any time and the risks of new variants and outbreaks are very real. There are [a number of actions you can take](#) to lower your risk and the risk you pose to those around you including being vaccinated, wearing a mask, staying home when you’re sick, washing your hands and maintaining proper respiratory and cough etiquette.

**Feeling sick?** Remaining vigilant and not attending work or school when sick or with symptoms is critically important. If you feel ill or exhibit COVID-19 symptoms do not come to class or campus. If you feel ill or exhibit symptoms while on campus or in class, please leave campus immediately. In all situations, you should follow Carleton's [symptom reporting protocols](#).

**Masks:** Masks are no longer mandatory in university buildings and facilities. However, we continue to recommend masking when indoors, particularly if physical distancing cannot be maintained. We are aware that personal preferences regarding optional mask use will vary greatly, and we ask that we all show consideration and care for each other during this transition.

**Vaccines:** While proof of vaccination is no longer required to access campus or participate in in-person Carleton activities, it may become necessary for the University to bring back proof of vaccination requirements on short notice if the situation and public health advice changes. Students are strongly encouraged to get a full course of vaccination, including booster doses as soon as they are eligible and submit their booster dose information in [cuScreen](#) as soon as possible. Please note that Carleton cannot guarantee that it will be able to offer virtual or hybrid learning options for those who are unable to attend the campus.

All members of the Carleton community are required to follow requirements and guidelines regarding health and safety which may change from time to time. For the most recent information about Carleton's COVID-19 response and health and safety requirements please see the [University's COVID-19 website](#) and review the [Frequently Asked Questions \(FAQs\)](#). Should you have additional questions after reviewing, please contact [covidinfo@carleton.ca](mailto:covidinfo@carleton.ca).

#### Winter 2023 Dates and Deadlines

January 2, 2023	Deadline for course outlines to be made available to students registered in full winter and early winter term courses.
January 4, 2023	University reopens.
January 9, 2023	Winter term begins. Full winter and early winter classes begin.
January 20-22, 27-29, 2023	Full fall and late fall term deferred final examinations will be held.
January 31, 2023	Last day to withdraw from full winter courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.
February 17, 2023	April examination schedule available online.
February 20, 2023	Statutory holiday. University closed.
February 20-24, 2023	Winter break, no classes.
March 15, 2023	Last day for academic withdrawal from full winter, late winter, and fall/winter courses. Last day to request Formal Examination Accommodation Forms for April full winter, late winter, and fall/winter final examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.
March 29, 2023	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in

	full winter term or fall/winter undergraduate courses, before the official April final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar).
April 7, 2023	Statutory holiday. University closed.
April 12, 2023	Winter term ends. Last day of full winter, late winter, and fall/winter classes. Classes follow a Friday schedule (full winter and late winter courses). Last day for final take-home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar. Last day for handing in term work and the last day that can be specified by a course instructor as a due date for term work for full winter and late winter courses.
April 13-14, 2023	No classes or examinations take place.
April 15-27, 2023	Final examinations in full winter, late winter, and fall/winter courses will be held. Examinations are normally held all seven days of the week.
April 27, 2023	All final take-home examinations are due on this day, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar.
May 19-31, 2023	Full winter, late winter, and fall/winter deferred final examinations will be held.

# COURSE OUTLINE

<u>Date</u>	<u>Topics and Required Readings</u>
Jan 10, 17, 24, 31	<p><b>From Description to Inference</b></p> <p><b>Main Topics:</b> Descriptive and Inferential Statistics; Discrete and Continuous Variables; Level of Measurement; Normal Curve; Using the Normal Curve to Estimate Probabilities; Probability Sampling; Sampling and the Sampling Distribution; Normal Approximation of the Sampling Distribution of Proportions.</p> <p>Readings Chs. 1, 4, and 5</p>
Feb 7, 14, 28	<p><b>Estimation Procedures for Sample Means and Proportions</b></p> <p><b>Main Topics:</b> Bias and Efficiency; Estimation Procedures for Sample Means; Estimation Procedures for Sample Proportions; Controlling the Width of Interval Estimates; Determining Sample Size.</p> <p>Readings: Ch. 6</p>
Mar 7, 14, 21	<p><b>Hypothesis Testing with Chi Square</b></p> <p><b>Main Topics:</b> Overview of Hypothesis Testing and the Five-Step Model for Hypothesis Testing; Selecting an Alpha Level; Bivariate Tables; Logic of Chi Square; Chi Square Test for Independence; Limitations of Hypothesis Testing.</p> <p>Readings: Ch. 7</p>
Mar 28, Apr 4, 11	<p><b>Hypothesis Testing with one or more Means and Proportions</b></p> <p><b>Main Topics:</b> Hypothesis Testing with the One-Sample Case; One-Tailed and Two-Tailed Tests of Hypothesis; Student's <math>t</math> Distribution; Tests of Hypotheses for Single Sample Proportions; Hypothesis Testing with Two Sample Means or Proportions; Cohen's <math>d</math>; Hypothesis Testing with more than Two Means: One-Way Analysis of Variance; Logic and Computation of ANOVA; Eta-Squared; Introduction to Multiple Regression.</p> <p>Readings: Chs. 10-12, 14</p>