

SOCI 213 – Statistics II (3 credits)
Winter 2024

Instructor: Dr. Mark Paradis

Email: mark.paradis@concordia.ca

Office Hours: Mondays from 16:15-17:30 in H-1125-28

Class Time: Mondays from 17:45-20:15

Class Location H 565 SGW

This course provides an introduction to the basic principles of inferential statistics for social scientists. Topics include: the normal and Student's T distributions; correlation and regression; principles of hypothesis testing; t-tests; chi-square; and ANOVA. Students will learn the theory and calculation of these statistics. Students will also learn the implications of these statistical techniques for theoretical understanding of sociology and anthropology by applying these statistics in the lab to real-world data. To aid students gain the strongest possible understanding of statistics, the course will be a mixture of lectures to present theory and exercises to gain greater comfort using these techniques.

COURSE FORMAT

This class will be held in-person on campus. If the public health situation changes, the course may be moved online at a future date (at the discretion of the university). If any classes must be missed due to instructor sickness or an academic commitment, an online, asynchronous lecture will take place. For any online lecture, every effort would be made to make the lecture available before the scheduled class time.

COMMUNICATIONS POLICY

For emails with the instructor, every effort will be made to respond within 24 hours on weekdays. On weekends, the delay may be longer. For emails, you will be expected to:

1. Include the course number, course section, and purpose of the email in the email subject.
If the course number and section are not included, the email will be deleted.
2. Do not send follow-up emails within 24 hours or on weekends. If you do, *both the original and follow-up emails will be ignored.*
3. *If your email is asking about facts found directly in the syllabus, it will be ignored* (for example, asking about the date of the midterm). The syllabus is made available to all students and it is disrespectful to expect the instructor to look up something when you are unwilling to do so.

COURSE RESOURCES

Required Material:

- A calculator
- SPSS

- SPSS is a statistical software that we will be using in our labs. It is available free of charge through the Concordia website. Details can be found at: <https://www.concordia.ca/it/services/spss.html>.
- Readings: There is no required book for this course. Statistics books are very expensive and everything that you need will be provided in class (and through homework exercises). However, if you believe that you might need additional explanations or additional exercises, the optional book listed below would prove useful. I will provide chapter numbers for each lecture, as best I can, so that you can follow along. For those who are extremely interested in statistics, the reading resource that I list below is the best statistics book that I know. It teaches the fundamentals better than any book I've seen. However, it is intended for a more advanced audience and should only be considered if you plan to take several statistics classes in the future.

Optional Material:

- Bennett, Jeffrey O., William L. Briggs, and Mario F. Triola. *Statistical Reasoning for Everyday Life*. Toronto: Pearson (3rd, 4th, and 5th editions are acceptable). Referred to as Statistical Reasoning.
 - This reading is not required, but it is recommended. It can be purchased from numerous sources online. Many of the lectures and exercises will draw on material from this textbook.

Reading Resource:

- Wilcox, Rand. 2012. *Modern Statistics for the Social and Behavioral Sciences – A Practical Introduction*. New York: CRC Press.
 - This book is not required, nor necessarily recommended. However, it is the best book on statistics in the social sciences that I've ever found. It goes in greater depth than you would need at the undergraduate level, but also does a fantastic job of explaining introductory concepts in an accessible manner. I will use some concepts and examples from this book in lectures.

REQUIREMENTS

Quizzes (2 x 10%): **25%**

To assess student understanding of the material and to help prepare for the midterms, there will be two quizzes.

- Quiz 1: **10%**
 - Quiz 1 will take place at the start of class on January 29. It will cover material from January 15 to January 22.
- Quiz 2: **15%**
 - Quiz 2 will take place at the start of class on March 18. It will cover material from March 4 to March 11.

Midterms: **60%**

To assess student understanding of the material, there will be two midterm exams.

- Midterm 1: **30%**

- Midterm 1 will be held in class on February 19. It will cover material from January 15 to February 12.
- Midterm 2: 30%
 - Midterm 2 will be held in class on April 8. It will cover material from March 4 to March 25.

Lab: 15%

To gain practical experience using statistical techniques with real-world sociological and anthropological data, we will have a lab sessions using SPSS at the end of the semester. For the lab, there will be a short assignment to be completed.

- May be completed in groups of 2 students
- Lab results must be submitted on April 17 at 17:45.
- Lab results should be submitted on Moodle.

LATE POLICY

Lab assignments that are not turned in on time will be penalized 5% per day. Late assignments will not receive any comments and will not be accepted more than a week late. If you are having any problems in handling the course load, please speak to me ASAP. There are more solutions available if you approach me early. Late quizzes and midterms will not be accepted. There will be no make-up midterms and quizzes, and no alternative assignments.

RE-GRADES

If you believe that your grade on an assignment does not reflect the quality of your work, it is your right to request a re-grade. However, you must follow these steps:

1. You must wait 7 days before requesting a re-grade.
2. You must submit a written statement detailing why you believe your grade should be changed. You should point to specific areas of your exam/paper that you believe were graded unfairly AND explain why.
3. I will then re-grade your ENTIRE assignment. I reserve the right to RAISE or LOWER your grade.
4. After the re-grade, if you still believe that your grade is unfair, you must then follow the Department's procedures for re-grades.

CHANGES TO THE SYLLABUS

I reserve the right to amend the schedule of meetings and assignments listed in this syllabus as might become necessary based on events throughout the semester. Any changes to the syllabus will be announced and students will receive an amended syllabus in writing. Copies of the most up to date syllabus can be found on the course website on Moodle

SCHEDULE

Monday, January 15

Intro to the Course; Descriptive Statistics (review)

- Optional Readings: Statistical Reasoning, Chapter 4
- Evaluations: None

Monday, January 22

Introduction to Probability (review)

- Optional Readings: Statistical Reasoning, Chapter 6
- Evaluations: None

Monday, January 29

Correlation and Regression (review)

- Optional Readings: Statistical Reasoning, Chapter 7
- Evaluations: **Quiz 1** (covers content from January 15 to January 22)

Monday, February 5

Normal Distribution

- Optional Readings: Statistical Reasoning, Chapter 5
- Evaluations: None

Monday, February 12

Normal Distribution (continued); Review

- Optional Readings: Statistical Reasoning, Chapter 5
- Evaluations: None

Monday, February 19

Midterm 1

- Optional Readings: None
- Evaluations: **Midterm 1** (covers content from January 15 to February 12)

Monday, February 26

NO CLASS (Reading Week)

Monday, March 4

Introduction to Inferential Statistics

- Optional Readings: Statistical Reasoning, Chapter 8
- Evaluations: None

Monday, March 11

Hypothesis Testing; t-Distribution

- Optional Readings: Statistical Reasoning, Chapter 9
- Evaluations: None

Monday, March 18

t-Distributions; Hypothesis Testing for Comparing Two Independent Groups

- Optional Readings: Statistical Reasoning, Chapter 10.1

- Evaluations: **Quiz 2** (covers content from March 4 to March 11)

Monday, March 25

Hypothesis Testing Using One-Way Analysis of Variance; Hypothesis Testing with Two-Way Tables

- Optional Readings: Statistical Reasoning, Chapter 10.2-10.3
- Evaluations: None

Monday, April 1

NO CLASS (Easter Monday)

Monday, April 8

Midterm 2

- Optional Readings: None
- Evaluations: **Midterm 2** (covers content from March 4 to March 25)

Monday, April 15

Lab (SPSS)

- Optional Readings: None
- Evaluations: **Lab (SPSS)** – Due April 17 at 17:45

GRADING SCHEME

Letter Grade	Numeric Grade (%)	Description
A+	90.0 – 100.0	Outstanding
A	85.0 – 89.9	
A-	80.0 – 84.9	
B+	77.0 – 79.9	Average – Very Good
B	73.0 – 76.9	
B-	70.0 – 72.9	
C+	67.0 – 69.9	Satisfactory
C	63.0 – 66.9	
C-	60.0 – 62.9	
D+	57.0 – 59.9	Marginal Pass
D	53.0 – 56.9	
D-	50.0 – 52.9	
F/FNS	0.0 – 49.9	Poor – Failure

INTELLECTUAL PROPERTY

Content belonging to instructors shared in online courses, including, but not limited to, online lectures, course notes, and video recordings of classes remain the intellectual property of the faculty member. It may not be distributed, published or broadcast, in whole or in part, without the express permission of the faculty member. Students are also forbidden to use their own means of recording any elements of an online class or lecture without express permission of the instructor.

Any unauthorized sharing of course content may constitute a breach of the Academic Code of Conduct and/or the Code of Rights and Responsibilities. As specified in the Policy on Intellectual Property, the University does not claim any ownership of or interest in any student IP. All university members retain copyright over their work.

PLAGIARISM

The most common offense under the Academic Code of Conduct is plagiarism, which the Code defines as “the presentation of the work of another person as one’s own or without proper acknowledgement.” This includes material copied word for word from books, journals, Internet sites, professor’s course notes, etc. It refers to material that is paraphrased but closely resembles the original source. It also includes for example the work of a fellow student, an answer on a quiz, data for a lab report, a paper or assignment completed by another student. It might be a paper purchased from any source. Plagiarism does not refer to words alone—it can refer to copying images, graphs, tables and ideas. “Presentation” is not limited to written work. It includes oral presentations, computer assignment and artistic works. Finally, if you translate the work of another person into any other language and do not cite the source, this is also plagiarism.

In simple words: Do not copy, paraphrase or translate anything from anywhere without saying where you obtained it! (Source: The Academic Integrity Website: Concordia.ca/students/academic-integrity)

EXTRAORDINARY CIRCUMSTANCES:

For undergraduate courses & courses that are cross-listed with graduate courses:

In the event of extraordinary circumstances and pursuant to the [Academic regulations - Concordia University](#) - Concordia University, the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the changes.

STUDENTS WITH DISABILITIES

Concordia University is working to create inclusive learning environments. Please notify me if there are aspects of the instruction or design of this course that result in disability-related barriers to your participation. You are also encouraged to contact the Access Centre for Students with Disabilities (ACSD) as soon as possible so that this office can assist with the necessary accommodations.

SEXUAL HARASSMENT

As a professor, one of my responsibilities is to help create a safe learning environment for my students and for the campus as a whole. If you have experienced sexual harassment, sexual violence or discrimination, Concordia’s Sexual Assault Resource Centre provides information available resources: <https://www.concordia.ca/students/sexual-assault.html>.

