

**SOCI 424 – Applied Social Statistics (3 credits)**  
Fall 2024

Instructor: Dr. Mark Paradis

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Office Hours:

- Fridays from 13:15-14:15 in H-1213
- Tuesdays from 16:15-17:15 in H-1125-28

Class Time: Wednesdays from 11:45 – 14:30

Class Location: H 513 SGW

This course explores statistical tools and techniques commonly used in sociological research, and provides an opportunity to work with large databases. The sessions are designed in an applied manner with weekly hands-on applications and/or case studies using the Statistical Package for the Social Sciences (SPSS) program.

### **COURSE FORMAT**

The course will be held in-person. This course is a mixture of lectures, discussions, labs, and project work. Attendance is required.

### **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 are expected to:

1. Include the course number and purpose of the email in the email subject.
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.
4. Do not send messages through Moodle. I almost never check Moodle messages.

### **COURSE READINGS**

All course readings will be posted on Moodle for download or will be available on the Concordia library website.

### **REQUIREMENTS**

*Lab Assignments: 30%*

Lab Assignment 1 (due October 23): 10%

Lab Assignment 2 (due October 30): 10%

Lab Assignment 3 (due November 6): 10%

For the inferential statistics techniques presented in the course, students will complete lab assignments to demonstrate their ability to properly use these techniques in SPSS, present the results using best practices, and properly interpret the results.

*Project Assignments: 30%*

Project Assignment 1 (due September 25 (at 11:45): 10%

- Project assignment 1 will identify hypotheses for the paper; justify hypotheses using research in sociology; and identify variables for each hypothesis.

Project Assignment 2 (due October 23 at 11:45): 10%

- Project assignment 2 will present descriptive statistics for chosen variables and a draft of the descriptive statistics section of the paper.

Project Assignment 3 (due November 13 at 11:45): 10%

- Project assignment 3 will present a first draft of the inferential statistics section of the paper.

*Oral Presentation: 15%*

Students will present their research project to the class. Students should present the project goal, the hypotheses they are testing, the data they are using, and the results of their statistical analysis. The duration of the presentation should be between 8 and 10 minutes. Students should prepare visual aids (e.g. PowerPoint slides) for their presentation.

*Final Paper: 25%*

Students will submit a final paper that presents the quantitative observational research they've conducted this semester. Papers will be between 10-15 pages (excluding appendices). Papers should be double-spaced with normal margins. Papers will include an introduction, a list of hypotheses (and justification of the hypotheses), a methods section, and a results and discussion. The final paper is due on December 3 at 14:45 on Moodle.

**LATE POLICY**

Papers and assignments that are not turned in on time will be penalized 5% per day. Late papers 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.

**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**

#### **September 4 – Introduction to the Course**

#### **September 11 – Choosing Your Data**

- Lecture: Statistical analysis in the social sciences
- Readings:
  - Schutt, R.K. (2019). Quantitative Methods. In *The Wiley Blackwell Companion to Sociology* (eds G. Ritzer and W.W. Murphy).  
<https://doi.org/10.1002/9781119429333.ch3>.
  - Linneman, T. J. (2021). From Measures of Association to Multilevel Models: Sociology Journals and the Quantitative Literacy Gap. *Teaching Sociology*, 49(1), 45-57.
- Resources: List of Data Sets on Moodle
- Activity:
  - Examining quantitative data sets in sociology

#### **September 18 – Choosing Your Variables / Identifying Hypotheses**

- Lecture: Hypotheses in statistical research
- Reading:
  - Blalock Jr, H. M. (1989). The real and unrealized contributions of quantitative sociology. *American Sociological Review*, 447-460.
- Activity:
  - Identifying hypotheses related to the chosen data set
  - Identifying variables related to chosen hypotheses
- Homework: Project Assignment 1 (identify hypotheses for paper; justify hypotheses using research in sociology; identify variables for each hypothesis)

#### **September 25 – Importing Data and Data Cleaning**

- Lecture: Data Cleaning in Excel and SPSS; Writing quantitative research papers
- Reading:
  - Chai, C. P. (2020). The importance of data cleaning: Three visualization examples. *Chance*, 33(1), 4-9.
- Resources:
  - Cleaning Your Data in Excel

- <https://support.microsoft.com/en-us/office/top-ten-ways-to-clean-your-data-2844b620-677c-47a7-ac3e-c2e157d1db19>
- <https://www.datacamp.com/tutorial/data-cleaning-in-excel-a-beginners-guide>
- Cleaning Your Data in SPSS
  - <https://www.ibm.com/docs/en/spss-modeler/saas?topic=guide-data-preparation>

## October 2 – **NO CLASS (instructor at conference)**

### October 9 – Descriptive Statistics

- Lecture: Descriptive Statistics (review and SPSS demonstration)
- Readings:
  - Osborne, J. W. (2013). Is data cleaning and the testing of assumptions relevant in the 21st century?. *Frontiers in psychology*, 4, 370.
- Activity:
  - Descriptive statistics for the final paper
- Homework: Project Assignment 2

## October 16 – **NO CLASS (Reading Week)**

### October 23 – t-Test and ANOVA

- Lecture: t-Test and ANOVA (review and SPSS demonstration)
- Readings:
  - <https://soc.utah.edu/sociology3112/t-tests.php>
  - [https://soc.utah.edu/sociology3112/anova.php#:~:text=Analysis%20of%20variance%20\(ANOVA\)%20is%20a%20hypothesis%20test%20used%20to,variation%20to%20within%2Dgroup%20variation.](https://soc.utah.edu/sociology3112/anova.php#:~:text=Analysis%20of%20variance%20(ANOVA)%20is%20a%20hypothesis%20test%20used%20to,variation%20to%20within%2Dgroup%20variation.)
- Activity:
  - T-test and ANOVA lab
  - T-test and ANOVA for the final paper
- Homework: Lab 1

### October 30 – Correlation and Linear Regression

- Lecture: Correlation and Linear Regression (review and SPSS demonstration)
- Readings:
  - <https://soc.utah.edu/sociology3112/regression.php>.
  - <https://www.lancaster.ac.uk/stor-i-student-sites/ziyang-yang/2021/03/14/statistics-in-social-science-2-explaining-linear-regression/>.
  - [https://aarongullickson.github.io/stat\\_book/the-ols-regression-line.html](https://aarongullickson.github.io/stat_book/the-ols-regression-line.html).
  - Wu, H. H., & Walsh, A. (2007). Teaching statistical interaction in ANOVA and OLS regression in the context of ideology in criminal justice processing. *Free Inquiry in Creative Sociology*, 35(1), 27-35.
- Activity:
  - Correlation and Linear Regression lab
  - Correlation and Linear Regression for the final paper

- Homework: Lab 2

### **November 6 – Chi-Square and Logistic Regression; Effect Size**

- Lecture: Chi-square and Logistic Regression (review and SPSS demonstration); Statistical Significance and Sociological Significance
- Readings:
  - Gayle, V., Lambert, P., & Davies, R. B. (2009). Logistic regression models in sociological research. University of Stirling, Technical Paper, 1.
  - Mood, C. (2010). Logistic regression: Why we cannot do what we think we can do, and what we can do about it. *European sociological review*, 26(1), 67-82.
  - Winship, C., & Mare, R. D. (1984). Regression models with ordinal variables. *American sociological review*, 512-525.
  - Engman, Athena. (2013). Is There Life After  $P < 0.05$ ? Statistical Significance and Quantitative Sociology. *Qual Quant* 47: 257-270.
  - Kneer, J. (2017). Effect sizes. In *The SAGE Encyclopedia of Communication Research Methods* (Vol. 4, pp. 407-407). SAGE Publications, Inc, <https://doi.org/10.4135/9781483381411>
- Activity:
  - Chi-Square and Logistic Regression lab
  - Chi-Square and Logistic Regression for the final paper
- Homework: Lab 3; Project Assignment 3

### **November 13 – Paper Workshop**

### **November 20 – Oral Presentations**

### **November 27 – Oral Presentations**

## **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](https://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>.