

Sociology 328A: Social Statistics (3.0 Credits)
Department of Sociology, University of British Columbia
Winter Term II, January 5 – April 10, 2015

Location: ANSO 207

Instructor: Andrew C. Patterson

Office Location: ANSO 158

Time: 9:00 – 10:00 am M/W/F

Email: andrew.patterson@alumni.ubc.ca

Office Hours: 8:00 – 8:45 am M/F

5:15 – 6:15 pm F

(and by appointment)

Assistant: Cary Wu

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Office Hours: 4:00 – 5:00 pm Tu/Th

(and by appointment)

Course Description and Objectives:

Statistics provide one way for social scientists to understand the world around them. Statistical facts are subject to interpretation and rarely offer any “proof,” but they do provide an important kind of evidence researchers can use to support their claims. This course will acquaint students with the quantitative frame of thinking in the social sciences with emphasis on sociological methods in particular. The main goal is to introduce basic statistical concepts and to show students how to use those concepts. A second goal is to help students become comfortable reading the quantitative literature in sociology. A third goal is to introduce some software students can use to conduct their own research.

Everyone is expected to grasp the rationales and concepts taught in his course. A portion (no more than 35%) of each exam involves hard calculations, so students are asked to own calculators and it is assumed that everyone understands basic, high-school-level algebra. At least as important, however, is to develop a conceptual understanding of the material. With a rigorous study habit and reliance on the help of others, this class need not be any more difficult than any other 300-level course in sociology. Students are also encouraged to seek help if they should struggle in any way. Students can accomplish stronger marks by meeting with the instructor, working through the readings with their peers, participating in in-class group activities, and consulting other sources such as alternative textbooks, library materials, and the wealth of help available online.

Sometimes there is more than one explanation for why things are the way they are. This is especially true in sociology, which makes heavy use of regression using multiple variables. This technique will be taught towards the end of the course, building on all of the coursework up to that time, but an intuitive understanding of how multiple explanations can play out in a research project will be emphasized early on. Students should leave the course feeling confident about asking quantitative questions and finding statistical solutions to problems.

Grading Summary:

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|------------------|-----|---|
| Online homework | 10% | Due on the days of chapter assignments |
| Written homework | 10% | Typically due on Mondays at classtime |
| Midterm exam 1 | 15% | Wednesday, February 4 (during classtime) |
| Lab assignment 1 | 8% | Due Thursday, February 12 by 4:00 pm |
| Midterm exam 2 | 15% | Wednesday, March 11 (during classtime) |
| Lab assignment 2 | 12% | Due Tuesday, March 31 by 4:00 pm |
| Final exam | 30% | Date and time: TBA |

Reading and Materials:

Healey, J., & Prus, S. (2013). *Statistics: A tool for social research* (2nd ed.). Toronto: Nelson Education.

To complete the required online homework assignments, students must sign up for an online account at <http://login.cengagebrain.com/course/E-X7FG27N9GYAJW> using the course key E-X7FG27N9GYAJW along with the access code on the front insert of the textbook. Students with either e-books or used copies of the textbook must still purchase an online account and can do so at the same site for \$50.95. Temporary access is also available during the first couple of weeks.

Course Rules and Procedures:

Etiquette and Decorum. In every way students must use a professional and respectful demeanour during class discussions, verbal exchanges, and written communications. This includes any and all communication with with the instructor, teacher assistants, and fellow students before, after, and during class sessions. Students are also expected to give their respectful attention during lectures and to eliminate any disruption of the attention of their classmates. The use of cell phones and internet during class is distracting to your fellow students and – importantly – yourselves! Students who choose to use their laptops for personal reasons during the lectures may do so provided that they sit at the back of the classroom. Please otherwise turn these off and stow them away before class starts.

Academic Dishonesty, Cheating, and Plagiarism. It is the responsibility of all students to acquaint themselves with the University's policies pertaining to academic honesty as well as conduct during examinations. **Instances of plagiarism, cheating, claiming credit for other people's work or for work submitted for another course, and other cases of academic dishonesty will be reported to the University for disciplinary action and will result in a grade of zero.** Additional consequences may apply, such as a grade of zero for the course as a whole, suspension, or expulsion from the University. Students may be asked to submit a copy of their work electronically so that it can be used against professional services that check for plagiarism. Please view the University's policies on academic misconduct and conduct during exams here:

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,54,111,959>

<http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,41,90,0#199>

Written Assignments. You must retain an electronic copy of the lab assignments. In this assignment you must also properly cite all published work and all ideas other than your own since failure to do so is plagiarism! You may not use work submitted to another course or or work created in part or in whole by anyone other than yourself. In addition, the following guidelines are required:

- Times New Roman font.
- 12-point font
- Page numbers at the bottom right of each page.

Deposit the article critique and lab assignment in the dropbox across from the Anthropology departmental office in the ANSO building (an immediate left and then an immediate right when walking into the building through the main entrance). **You must timestamp your paper** using the timestamp machine located on the counter of the dropbox. As an alternative to using the dropbox, you may also bring the paper to the class that occurs prior to the due date and submit it there instead.

Late assignments. Lab assignments are due at 4:00 PM on the date specified in this syllabus. Those that are timestamped after 4:45 PM, but submitted on the same date, will receive a penalty of 5 percentage points. For each additional day late there will be a further penalty of 5 percentage points, with Saturdays and Sundays together counting as a single day along with any contiguous statutory holidays. Any paper submitted without a timestamp will be regarded as submitted as of the date that it is found by the instructor or the teacher assistant. Exceptions to these rules may be made only with a letter from the Arts Advising Office (Buchanan D111; 604-822-4028) and will not otherwise be considered.

Missed and Rescheduled Exams. Exam times begin for everyone at the dates and times specified in this syllabus and will not be extended for those arriving late. Missed exams will receive a mark of zero. Exceptions for missed exams may be made only with a letter from the Arts Advising Office (Buchanan D111; 604-822-4028). Requests for a rescheduled exam in cases of medical emergencies must be made in advance and must include a detailed doctor's note or other legal documentation that validates the student's reasons for making the request. Makeup exams may have a different format and may contain different content covering the course material than the original exam.

Course Requirements:

Exams. The midterm exam will occur during the regular class session on the date specified in this syllabus. The date, time, and location for the final exam will be determined by the University. All exams will consist of a combination of multiple-choice and short-answer questions. Some questions will require students to make specific calculations and others will ask them to discuss their understanding of the course material in their own words.

Homework assignments. Submission of regular homework assignments is required. There are two types. Online assignments must be submitted through the website associated with the textbook as noted above. Written assignments comprise a small selection of even-numbered problems at the back of each chapter. Submissions for these may be either

handwritten or typed. Soft copies are not acceptable. On the written homework please include your name, student number, the course and section number, name of the instructor, and the date.

Lab assignment. The lab assignment will acquaint students with software commonly used in social-statistical research, i.e., SPSS, Excel, and a word processing application that can incorporate output from these. Students are asked to carry out the project on their own time by accessing workstations on campus that make the software available, such as the labs in the ANSO building (room 150, just across the hall from my office) or in the Buchanan complex (e.g., B101 and B121). Please include your name, student number, the course and section number, the name of the instructor, and the date on a cover page. Further detail will be provided during the second week of class.

Course Schedule and Required Readings

Jan 5: Course goals, expectations, and overview.

Jan 7: Background information.

Jan 9: Introduction.

Required reading: Healey & Prus, Prologue & Chapter 1.

Due: Chapter 1 online homework.

Jan 12: Basic descriptive statistics.

Required reading: Healey & Prus, Chapter 2.

Due: Chapter 2 online homework.

Jan 14: Basic descriptive statistics, cont'd.

Jan 16: Measures of central tendency and dispersion.

Required reading: Healey & Prus, Chapter 3.

Due: Chapter 3 online homework.

Jan 19: Central tendency and dispersion, cont'd.

Due: Answers to problems # 1.8(a, e, g), 2.2.

Jan 21: The normal curve.

Required reading: Healey & Prus, Chapter 4.

Due: Chapter 4 online homework.

Jan 23: The normal curve, cont'd.

Jan 26: Help with SPSS. A lecture with Cary Wu.

Due: Answers to problems # 3.2, 3.4, 3.7, 4.4(b, c, d, f).

Jan 28: Introduction to sampling, the sampling distribution, and inference.

Required reading: Healey & Prus, Chapter 5.

Due: Chapter 5 online homework.

Jan 30: Introduction to inference, cont'd.

Feb 2: Midterm review.

Feb 4: **Midterm 1.** (To be held during classtime.)

Feb 6: Estimation procedures.

Required reading: Healey & Prus, Chapter 6.

Due: Chapter 6 online homework.

Feb 9: Family Day. No class.

Feb 11: Estimation procedures, cont'd.

Due: Answers to problems # 6.4, 6.6. (*Ignore instructions regarding the 'error bar.'*)

Feb 12: **Lab assignment 1 due** at 4:00 pm.

Feb 13: Introduction to hypothesis testing.

Required reading: Healey & Prus, Chapter 7.

Due: Chapter 7 online homework.

Feb 16 – 20: Spring break. No class.

Feb 23: One-sample hypothesis testing.

Due: Answers to problems # 7.2, 7.4.

Feb 25: Two-sample hypothesis testing.

Required reading: Healey & Prus, Chapter 8.

Due: Chapter 8 online homework.

Feb 27: Two-sample hypothesis testing, cont'd.

Mar 2: Analysis of variance.

Required reading: Healey & Prus, Chapter 9.

Due: Chapter 9 online homework.

Due: Answer to problem # 8.2.

Mar 4: Analysis of variance, cont'd.

Mar 6: Chi-square.

Required reading: Healey & Prus, Chapter 10.

Due: Chapter 10 online homework.

Mar 9: Midterm review.

Mar 11: **Midterm 2.** (To be held during classtime.)

Mar 13: Introduction to bivariate association.

Required reading: Healey & Prus, Chapter 11.

Due: Chapter 11 online homework.

Due: Answers to problems # 9.6, 10.2

Mar 16: Bivariate association at the nominal level.

Mar 18: Introduction to correlation and regression.

Required reading: Healey & Prus, Chapter 13.

Due: Chapter 13 online homework.

Mar 20: Correlation and regression, cont'd.

Mar 23: Introduction to multivariate causality and analysis.

Due: Answer to problem # 11.8 (as it refers to # 11.7, Table “e”) & 13.2(b, c, d).

Mar 25: Multivariate correlation and regression.

Required reading: Healey & Prus, Chapter 14.

Due: Chapter 14 online homework.

Mar 27: Multivariate correlation and regression, cont'd.

Mar 30: Ordinal association.

Mar 31: **Lab assignment 2 due** at 4:00 pm.

Apr 1: Ordinal association, cont'd.

Required reading: Healey & Prus, Chapter 12.

Due: Chapter 12 online homework.

Apr 3: Good Friday. No class.

Apr 6: Easter Monday. No class.

Apr 8: Conclusions and reflections.

Due: Answers to problems # 12.8 & 14.2(a, c, e). (*You are welcome and encouraged to use any of the software packages available to you, e.g., SPSS and Excel, to solve these problems.*)

Apr 10: Review.

Final exam: Date, time, and location TBA. The exam is scheduled to occur sometime between Apr 14-29.