

The University of Western Ontario SOCIOLOGY 2205B-001 Statistics for Sociology Winter 2024 Tuesdays 9:30-12:30pm Delivery Method: in-person Instructor: Dr. Anna Zajacova Office Hours: TBD Email: SOC2205.W24@gmail.com

COURSE DESCRIPTION

An introduction to the techniques of statistical analysis used by sociologists, including descriptive statistics, the normal curve, hypothesis testing and various measures of association.

Prerequisite(s): None.

Anti-requisite(s): Biology 2244A/B, Economics 2122A/B, Economics 2222A/B, Geography 2210A/B, Health Sciences 3801A/B, MOS 2242A/B, the former Psychology 2810, the former Psychology 2820E, Psychology 2811A/B, Psychology 2830A/B, Psychology 2850A/B, Psychology 2851A/B, Social Work 2207A/B, Statistical Sciences 2035, Statistical Sciences 2141A/B, Statistical Sciences 2143A/B, Statistical Sciences 2244A/B, Statistical Sciences 2858A/B.

COURSE OBJECTIVES AND LEARNING OUTCOMES

Sociology 2205 is an introductory course designed to help you conduct and interpret basic quantitative analyses of social issues. The class will cover elementary statistical concepts and methods used in sociology and other social sciences. The emphasis is understanding the science and art of analysis and interpretation of findings. The material in this course can be roughly divided into two parts

- 1) The first part will cover **descriptive statistics**. Here we will learn how to summarize and describe data, first one variable at a time and then pairs of variables. We will learn basic numerical and graphical methods appropriate for categorical and continuous variables.
- 2) The second part will be **inference**, where we will learn how to generalize results obtained from a sample to the population. This part will start with the basic logic of inference, focusing on the importance of sampling distributions. Then we will apply the general approach to univariate and bivariate hypothesis tests and confidence interval calculations appropriate for categorical and continuous variables.

After a successful completion of the course, you will be able to

- Understand and appreciate statistics' role in social science
- Comprehend basic statistics used in industry, government, and academic reports
- Independently conduct elementary quantitative analysis of data
- Explain the logic of statistical inference
- Critically assess the presentation of statistical data in everyday life

COURSE MATERIALS

Textbook "Introductory Statistics" by Illovsky and Dean (2023), OpenStax, Rice University. This is a great textbook and available <u>FREE</u> online at <u>https://openstax.org/details/books/introductory-statistics</u>. You can view the chapters online or download pdfs. If you wish, you can also buy the actual printed book for a reasonable price. We will only cover select chapters and chapter sections – I will indicate which sections to read for each week in my instructions.

2.

Statistical software Stata. <u>REQUIRED</u>. Must be installed during the first week of class. Note <u>Stata-compatible operating systems</u>. We will be using Stata all through the semester and access to it is necessary.

The installation requires a bit of patience but it's not too bad if you just follow the instructions – I promise! Purchase a **6-month license for** <u>Stata Version BE</u> from

https://www.stata.com/order/new/edu/profplus/student-pricing/ for \$48 USD.

You will **not** need Stata during exams, but exams will include questions requiring your understanding of Stata commands and output. You will also need Stata for class work, homework, and assignments. 3.

Calculator. Any will do, even a cheapest dollar-store calculator will be fine. Scientific calculators are not needed but are allowed.

COMMUNICATION

- 1. The primary method of communication will be in-class announcements, typically also written on weekly course slide decks. Students are also responsible for checking the course OWL site (http://owl.uwo.ca) on a regular basis for news and updates.
- 2. Post questions and comments on the Forum on our course OWL site. We will aim to respond within 24 hours during the work week.
- 3. You can ask questions in class and you are always welcome during student hours!
- 4. If you have a question specific to your situation, you can email us at <u>SOC2205.W24@gmail.com</u>. We will aim to respond within 48-72 hours. We may ask you to repost your question on the Forum and will answer it there for the benefit of your colleagues unless it's a question unique to you.

METHOD OF EVALUATION

The evaluation methods described in the course outline are essential requirements for the course.

Evaluation Breakdown

1.	Memorandum of understanding	1%
2.	Weekly active presence quizlets	15%
3.	Midterm exam	23%
4.	Final exam	32%
5.	Assignment 1	14%
6.	Assignment 2	15%

IMPORTANT INFORMATION ABOUT EVALUATION

1. Memorandum of understanding. This is the easiest point to earn. You will download, carefully read, initial, and sign a document that explains key aspects about the class and how to succeed in it.

2. Weekly active presence quizlets. During most or all classes, we will have a short 5-question quizlet on OWL. The goal of these regular checks is to encourage class attendance, doing homework every week, studying, and attending and following material along in class.

<u>The lowest 3 scores are dropped automatically.</u> This can be low scores or zero scores due to missed quizlets. This is universal accommodation that covers all medical, personal, technical, connection, or any other circumstances or problems. No further accommodation is possible, for any reason. Note Academic Considerations don't apply to missed quizlets (see below).

3. and 4.

Exams. Both the midterm and final will be old-fashioned on-paper, closed book exams. Calculators are allowed. No formula sheets are provided or allowed; I will provide tables as needed.

- 1. Midterm will be 90 minutes; the final 150 minutes.
- 2. The midterm will be during our regular class period (Tuesday 9:30am) in our regular classroom.
- 3. The final will be cumulative but about 80% of items will focus on post-midterm material.
- 4. The exams will include primarily multiple-choice questions and may also include short freeresponse problems similar to homework items, or interpreting statistics output as we will do in class.
- 5. Makeup exams: there will be one makeup for the midterm and one makeup for the final. The dates are set by the Sociology department; I will announce them as soon as they are available.
 - Makeup exams are available only for students with official Academic Accommodation through the Academic Counselling Office. Your instructor cannot make any exceptions.

5. and 6.

Assignments will comprise 3 parts each: Part A will include problems from the textbook or inspired by textbook homework problems. Part B will include short problems to complete with Stata. Part C will be a brief independent data analysis using Stata. Detailed instructions will be posted on OWL under Assignments.

Extra credit (up to 6 percentage points on top of final grade).

Extra credit will be available for contributing to Forum discussions with correct, helpful, timely, and supportive answers or comments to student colleagues. Every week, up to 2 students may be selected as 'master contributors' and awarded up to a 2-percentage-point bonus. A student may become a 'master contributor' up to 3 times during the semester. Thus, it is possible to earn up to 6 percentage-points bonus.

STUDENT ABSENCES AND ACCOMMODATIONS

Your instructor cannot provide any accommodation based on any student requests. No exceptions are possible so we can be **fair** to all students.

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

Assessments worth less than 10% of the overall course grade:

This pertains to the weekly active presence quizlets. <u>The lowest 3 scores will be dropped</u>; only the remaining scores will be included in the final mark calculation. This is universal accommodation that covers all medical, personal, technical, connection, or any other circumstances or problems. No further accommodation is possible, for any reason, no exceptions.

Assessments worth 10% or more of the overall course grade:

For work totaling 10% or more of the final course grade, students must provide valid medical or supporting documentation to their Home Faculty Academic Counselling Office as soon as possible.

Students with an approved absence from an in-class exam will be required to write a makeup exam. Course professor or teaching assistant(s) may not be available to respond to questions during the makeup exam. Students should be aware that the make-up test will not necessarily be in the same format, be of the same duration, or cover the same material as the original test. One makeup date will be provided for each exam. If a student has another valid absence for that makeup date, they will be asked to complete the exam in the following term. Students should not email their instructor with requests for special consideration; the instructor is unable to make exceptions.

CLASS STRUCTURE

The classes will combine lectures on key concepts with student participation, individual and group exercises, hands-on work using Stata, problem solving, etc.

ACADEMIC POLICIES

Please review the Department of Sociology "<u>Important Academic Policies</u>" document <u>https://sociology.uwo.ca/undergraduate/courses/Academic_Policies.pdf</u> for additional information regarding:

- Scholastic Offences
- Plagiarism
- Copyright
- Academic Accommodation
- Accessibility Options
- Mental Health

IMPORTANT DATES, COURSE SCHEDULE AND READINGS.

Jan 9	Week 1. Introduction	
	Chapter 1: intro, 1.1-1.3	
Jan 16	Week 2. Descriptives for categorical variables	
	Chapter 1: 1.2, 1.3	
	Chapter 2: intro. Bar graph text in 2.1	
Jan 23	Week 3. Descriptives for continuous variables	
	Chapter 2: intro, 2.1-2.7	
Jan 30	Week 4. Probability, distributions	
	Chapter 3: intro, 3.1.	
	Chapter 5: intro, $51, 52$	
Eab 6	Week 5 The Normal distribution	
Feb 0	Chapter 6: intro 61 62	
	Assignment 1 recommended day to complete Feb 9.	
Feb 13	Week 6. Sampling distributions and confidence intervals for	
	population mean	
	Chapter 7: intro, 7.1-7.3	
	Chapter 8: intro, 8.1-8.3	
	Assignment 1 firm deadline February 13.	
Feb 20	Reading week, no class.	
Feb 27	Week 7.	
	Exam 1 on February 27, in class, 9:30-11am.	
Mar 5	Week 8. Hypothesis tests about a population mean	
	Chapter 9: intro, 9.1-9.5	
Mar 12	Week 9. Hypothesis tests about two population means	
	Chapter 10: intro, 10.1, only skim 10.2., 10.3, 10.4	
Mar 19	Week 10. Chi square test for pairs of categorical variables	
	Chapter 3: 3.4	
	Assignment 2 recommended day to complete March 22	
Mar 26	Week 11 Correlation and regression for pairs of continuous variables	
	Chapter 12: intro. 12.1-12.4	
	Assignment 2 firm deadline March 26.	
April 2	Week 12. Confidence interval for a population mean. Review.	
·	Chapter 8: intro, 8.1-8.3	

Final exam, time and place TBD.

Please note: Schedule and readings are subject to change.