The University of Western Ontario

SOCIOLOGY 2205B-003
Statistics for Sociology
Winter 2019

Wednesday, 10:30am–1:30pm, SSC 3028

Instructor: Patrick Denice
Office Hours: Tuesdays, 2:00–4:00pm
Department of Sociology, Office: SSC 5407
Email: pdenice@uwo.ca

Teaching Assistant: Nathaniel White
Office Hours: TBD
Department of Sociology, Office: TBD
Email: nwhite43@uwo.ca

Course Description:

Much of what we know about the world around us comes from statistics. We are inundated by the media with statistical claims about our society—what we believe and think, what we buy, how well we are doing financially, etc. But how do we evaluate what we read, hear, and see? How do we use statistics to make honest assessments of social processes, rather than to simply confirm our preconceived notions?

In this introductory course in statistics, we will cover the basics of descriptive and inferential statistics. Descriptive statistics involve organizing and summarizing key characteristics of data. The techniques of inferential statistics guide informed judgments about the unknown characteristics of a population based on the known characteristics of a sample. We will also measure and evaluate our uncertainty about those judgments.

Throughout, we will draw on real-world examples from social science, including public opinion polls, surveys, and economic data. In addition to learning the basics of statistical analysis, this course will also introduce students to the use of computing software for data analysis, specifically the free version (PSPP) of the widely-used statistical package SPSS.

The emphasis of this course will not be on computation, but on understanding the process of analysis and interpreting results. No prior knowledge of statistics is assumed or required, although students should have working knowledge of algebra.

Prerequisites: 1.0 Sociology course at the 1000 level.

Antirequisites: Biology 2244A/B; Economics 2122A/B, 2222A/B; Geography 2210A/B; Health Sciences 3801A/B; MOS 2242A/B; Psychology 2810, 2820E, 2830A/B, 2850A/B, 2851A/B; Social Work 2207A/B; Statistical Sciences 2035, 2141A/B, 2143A/B, 2244A/B, 2858A/B.

Learning Outcomes:
1. Learn the terminology and techniques of basic statistical analysis.
2. Gain an understanding of how statistics can be used to address research questions in the social sciences.
3. Become knowledgeable and critical consumers of statistical information encountered in everyday life.
4. Be able to read and evaluate empirical, quantitative sociological research.

Textbook and Other Materials:
1. We will rely primarily on the following textbook:

   Statistics: A Tool for Social Research, 4th Canadian Edition, by Joseph F. Healey, Steven G. Prus, and Riva Lieflander, Nelson Publishing.

   I encourage you to get the least expensive option you can. You may also use a prior edition (e.g., the 3rd Canadian Edition); do check with me in the beginning of the semester so we can make sure you are reading from the right sections. Readings from the textbook at labeled **HPL** in the course schedule below. You do *not* need to complete the exercises at the back of each chapter prior to class; these are good opportunities for additional practice, but they are not required.

2. Throughout the term, we will gain basic familiarity with statistical analysis software. We will be using PSPP, a *free* version of the common software SPSS (formerly known as Statistical Package for the Social Sciences). More information on downloading PSPP will follow in the first few weeks of class. If you would like to get a head start and see what it's all about, you may go to this website: https://www.gnu.org/software/pspp/get.html. From there, you can download the package ("Binaries") that is right for your computer (most likely either Windows or Mac OS).

   For class sessions that are marked with **Lab** in the outline below, please bring your laptop or notebook. For those without one, have no fear—we'll partner up during class and all post all related material to OWL.

3. Additional readings and materials will be made available through the course website on OWL. Anything you should read prior to class that is available there is marked **OWL** in the course outline below.

4. You will need a calculator for this class. It should be able to take square roots and natural logs (ln$x$). You won't need anything fancier than that, and it shouldn't run you more than about $20. Note that for exams, you will *not* be able to use the calculator on your phones.

Evaluation methods:
1. *Problem Sets:* Statistics is like so many other skills: "practice makes habit." As such, there will be three (3) problem sets to provide you with the opportunity to practice what we learn in class in a non-test environment. Completed problem sets must be uploaded to OWL by the start of class on the date stated in the course schedule below. Late problem

sets will not be accepted except in the event of a documented medical or family emergency.

2. *In-Class Exercises:* There will be approximately eight (8) short in-class exercises carried out at various points throughout the term to assess understanding of current topics or to practice using the statistical software. Each is worth 10 points toward your final grade; total points in excess of 60 will be discarded. These are unannounced, and there will be no make-ups offered.

3. *Exams:* There will be two (2) in-class exams that will be comprised of conceptual (multiple choice) and computational questions. These exams will *not* test your memorization of statistical formulas; instead, you will be asked to know when and how to employ statistical concepts and formulas that we discuss in class. While the second exam will focus mostly on what we've covered since the first exam, you should expect some prior material. Statistics is, after all, a cumulative subject.

    There will also be a final exam scheduled for the regular end-of-term exam period. The format of this exam will be similar to the two in-class exams, and will be cumulative.

    If you miss one of the two midterm exams and the Academic Counseling office approves your absence, we will reweight your other two exams (midterm=80; final=160). If you miss both midterm exams and the Academic Counseling office approves your absence, we will reweight your final exam (final=240 points). If you miss the final exam and the Academic Counseling office approves your absence, there will be one makeup date, which will be announced in advance. The format of the make-up exams is within the discretion of the instructor. If there is no approved justification for a missed exam, the student will receive a grade of zero (0) for that exam.

Evaluation Breakdown:

Problem sets (3 assignments; 30, 30, & 40 points)	100 points
In-class exercises (8 exercises; 10 points each*)	60 points
In-class exams (2 exams; 60 points each)	120 points
Final exam	120 points
Total	400 points

  *As noted above, total in-class exercise points in excess of 60 will be discarded.

Additional notes about grading: There will be no opportunities for extra credit. I encourage you to work consistently throughout the semester, and to see me or our TA as soon as you experience difficulty with the material. In keeping with departmental guidelines, it is expected that the class average for this course will be around 66-70%. Should the final overall grades yield a value significantly below this range, grades will be adjusted upward to ensure an appropriate mean for the class.

How to Contact Me:

I can be reached via email at pdenice@uwo.ca. Students are also encouraged to come to office hours, to set up an appointment, or to approach me before or after class.

How to Get Important Information:

You will find course content and announcements posted to our OWL course website. I will also announce any upcoming deadlines or changes to the course schedule in class. If you miss a class, check with a classmate for any notes or other materials.

Important Policies

Assignment Deadlines:

Students must submit their assignments by the date and time stated in the course outline and on the OWL website. Late assignments will be penalized 10% for each day they are late. Any assignment not received within 5 days of the due date will not be accepted, except in the event of a documented medical or family emergency. If a student anticipates an issue with an assignment, they are recommended to speak to the professor as early as possible to make alternative arrangements.

Plagiarism:

Students must write their assignments in their own words. Whenever students take an idea from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major scholastic offence (the Scholastic Offence Policy can be viewed in the Western Academic Calendar).

All required assignments may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (www.turnitin.com).

Laptops and other Electronics/Phones in Class:

I encourage you to take notes without a computer if you are able. If you need a laptop to take notes during class, please refrain from browsing the internet, texting, or going on social networking sites such as Facebook or Twitter. Students who disrupt their colleagues' learning through the use of their laptop or tablet will be told to put away their device, and they will not be permitted to use it for the remainder of the class. Be sure that all cell phones are silenced and put away at the beginning of class.

Recording Devices:

Recording devices may not be used in this class. If you require a recording device for medical, accessibility, or other reasons, please see me.

Lectures and Other Course Materials:

Any materials created by the instructor (e.g., notes, handouts, summaries, slide decks, assignments, exams, etc.) are protected by copyright law and may not be copied or distributed in any form without the explicit permission of the instructor. Any non-authorized use of these materials constitutes an academic offence.

Scholastic Offences:

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website: www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

Accommodation for Medical Illness:

Western's policy on Accommodation for Medical Illness can be found at: www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

Students must see the Academic Counsellor and submit all required documentation in order to be approved for certain accommodation: http://counselling.ssc.uwo.ca/procedures/medical_accommodation.html.

Accessibility Options:

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 519-661-2111, x82147 for any specific question regarding an accommodation. Information regarding accommodation of exams is available on the Registrar's website: www.registrar.uwo.ca/examinations/accommodated_exams.html.

Mental Health:

Students who are in **emotional/mental distress** should refer to Mental Health@Western (http://uwo.ca/health/mental_wellbeing/index.html) for a complete list of options how to obtain help. Here are some resources:

On-campus resources:

Psychological Services	Wellness Education Centre
WSSB Room 4100	UCC Room 76
519-661-3031	519-661-2111, x87127
Mon-Fri, 8:30am-4:00pm	Mon-Fri, 10am-6pm
Peer Support Centre	Student Health Services (SHS)
UCC Room 256	UCC Room 11
Mon-Fri, 10am-4pm	Mon-Thu, 9am-7pm; Fri 9am-4:30pm

Off-campus resources:

Good2Talk, 24/7 phone support	1-866-925-5454
First Nations and Inuit Hope for Wellness Help Line	1-855-242-3310
MentalHealthHelpLine.ca	1-866-531-2600
DrugandAlcoholHelpline.ca	1-800-565-8603
ProblemGamblingHelpine.ca	1-888-230-3505
LGBT Youthline	1-800-268-9688
ReachOut247.ca	519-433-2023; 866-933-2023

Course Schedule

Please note: Readings and assignments must be completed prior to class on the date listed. This outline is subject to change over the course of the term in order to meet the needs of the class. Any changes will be announced in class and/or through our OWL course website.

Date	Topics	Readings and Deadlines
Descriptive statistics		
Jan. 9	Introduction What is statistics? Data measurement	**HPL:** Ch. 1
Jan. 16	Organizing our data **Lab 1:** The basics	**HPL:** Ch. 2 **OWL:** PSPP Lab 0 Install PSPP on your computer
Jan. 23	Measures of central tendency Measures of variability	**HPL:** Ch. 3
Jan. 30	Probability The Normal Curve Calculating z-scores	**Problem Set 1** **HPL:** Ch. 4
Feb. 6	**Exam 1** **Lab 2:** Describing data	
Inferential statistics		
Feb. 13	Samples and populations Introduction to inferential statistics	**HPL:** Ch. 5-6
Feb. 20	*Reading Week*	
Feb. 27	Hypothesis testing: Differences in means	**HPL:** Ch. 7 (pp. 206-212), 10, 11
Mar. 6	Hypothesis testing: Differences in proportions **Lab 3:** Testing differences	**Problem Set 2** **HPL:** Continue with above readings
Mar. 13	**Exam 2** Analysis of variance	
Mar. 20	Analysis of variance (continued) Nonparametric test of significance: Chi-square	**HPL:** Ch. 12, 7 (pp. 212-231)

| Mar. 27 | Correlation **Lab 4:** ANOVA and chi-square | **HPL:** Ch. 13-14 |
| Apr. 3 | Regression **Lab 5:** Correlation and regression | **Problem Set 3** **HPL:** Continue with above readings |

Final Exam – Date, Time, Location TBD (set by Registrar)