



The University of Western Ontario
SOCIOLOGY 2205A-650
Statistics for Sociology
Fall 2021

Patrick Denice
Assistant Professor, Department of Sociology

Class Meetings:

Held virtually and asynchronously via OWL

Instructor's Student Office Hours:

Wednesdays, 2:00-4:00pm, to schedule:

<https://calendly.com/patrickdenice/15min>

Teaching Assistants:

TBD

TBD

TBD

TBD

TAs' Student Office Hours:

TBD

TBD

TBD

TBD

All students will be assigned to a primary TA. Your TA will mark your work and serve as your best resource for getting help and answering questions. To "visit" TAs' drop-in hours, go to the Collaborate tab in OWL.

Given the ongoing COVID-19 pandemic, this course will be held *virtually* and *asynchronously*. Although this academic year might be different, Western University is committed to a thriving campus. We encourage you to check out the [Digital Student Experience](#) website to manage your academics and well-being. Additionally, the following link provides available resources to support students on and off campus: <https://www.uwo.ca/health/>.

Course Description

Overview: 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 (Stata) for data analysis.

The emphasis of this course will be on a combination of computation, understanding the process of analysis, and interpreting our results. No prior knowledge of statistics is assumed or required, although students should have working knowledge of algebra.

Pre-requisites: 1.0 Sociology course at the 1000 level.

Anti-requisites: 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

By the end of the term, students will be able to:

1. Recognize the terminology and techniques of basic statistical analysis.
2. Compute and interpret descriptive statistics by looking at summary measures (e.g., mean, median, mode, percentiles, standard deviation) and common graphical tools (e.g., tables, bar plots, histograms, etc.).
3. Decide on and carry out the appropriate statistical test to use in real-life research contexts.
4. Gain basic familiarity with the statistical software package Stata in order to explore and interpret relationships in social science survey data.
5. Be aware of and critically consume statistical information encountered in everyday life.
6. Read and evaluate empirical, quantitative sociological research.

Textbook and Other Course Materials

Textbook: We will rely primarily on the following textbook:

Illowsky, Barbara, and Susan Dean (2018). *Introductory Statistics*. OpenStax, Rice University.

It is available for *free* at the following website: <https://openstax.org/details/books/introductory-statistics>. You have the option of viewing the book's chapters online or downloading a PDF version. Each chapter has a number of example and "try it" problems throughout, as well as practice questions at the end. You do *not* need to complete these, although you may find them helpful for reviewing the material and checking your understanding. You can also skip the "Using the TI-83 Calculator" sections.

Assigned readings from the textbook are labeled **IS** in the course schedule below.

Statistical Software: While the focus of this course is on helping you learn basic statistical concepts and tools, learning these concepts is often aided by analyzing real data using statistical

analysis software. Throughout the term, we will gain basic familiarity with the software package called **Stata**. More information on using Stata will follow in the first few weeks of class.

Students have two choices for obtaining Stata on their personal computers:

1. *Recommended:* You can purchase a 6-month license for \$48 USD (or about \$60-65 CAD).¹ Be sure to purchase the Stata/BE version of the program (the SE or MP versions are only necessary for very large datasets, which we won't be using in this class). You have the option of purchasing a license for a longer period of time (e.g., annual or perpetual), but these are more expensive, and 6 months will more than suffice for our class. To purchase Stata, visit <https://www.stata.com/order/new/edu/profplus/student-pricing/>.
2. You may also use Stata for free through the MyVLab remote access interface. To set up MyVLab on your personal computer, visit <https://myvlab.uwo.ca/>. Please note that I must register our class for you to have access to Stata through MyVLab. So, if you don't immediately see Stata on your MyVLab desktop, allow me and the Social Science Technology Services staff about a week after the start of classes to get everyone registered. If after that point, you still don't see Stata, send me an email.

Calculator: You will need a calculator for this class. It should be able to take square roots and natural logs (lnx). You won't need anything fancier than that, and it shouldn't run you more than about \$20. (As this course is being offered virtually, you may use the calculator on your phones or computers.)

Additional Materials: Additional readings and materials will be made available through the course website on OWL.

Course Evaluation

Summary of Course Components:

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|-----------------------------|-----|
| 1. Weekly Activities on OWL | 20% |
| 2. Midterm Exam | 35% |
| 3. Final Exam | 45% |

Weekly Activities on OWL (20%):

Each week, I will post a module to our course site on OWL, which can be found by clicking on the *Course Content* tab on the left-hand side of the homepage. These modules will consist of short videos, text explanations of the material, and examples. In addition to *optional* (but highly encouraged!) exercises embedded throughout each week's material, there will also be a link to a *required* assessment. These *short* assignments will consist of 2-3 questions designed to help you practice what you're learning in a relatively low-stress environment. Students may work together through each week's material—but all work they submit must be their own. These will be marked, but I will only *count 9 of the 11* weekly activities toward your course mark. In other

¹ Part of the reason we're using a free, open-source textbook this term is to help lessen the financial burden of the class, given the option to purchase Stata.

words, each student is permitted to miss, skip, or do poorly on 2 of the weekly modules. This is intended to serve as a *universal accommodation* available to all students, for any reason, and with no need for documentation. That said, once released, weekly modules will be available for the remainder of the term so that students who miss one can still access the material.

New modules will be released *each Thursday at 9:00am*, beginning on September 9, 2021. Students will have one week to complete all of that week's material at their own pace. All activities and practice questions must be completed by the next Thursday (at 11:55pm).

Midterm Exam (35%):

In Week 7, students will take a midterm exam. You can think of this exam as a large problem set. Questions will consist of multiple choice and short answer. Students will have the chance to demonstrate what they have learned from the first 6 weeks of the course, including Stata Labs 1-3. Students will have the whole week to work on the problems in the exam (from Thursday, Oct. 21, at 9:00am, to Thursday, Oct. 28 at 11:55pm), and there will be no additional new material that week. This is intended to be a *universal accommodation*: Because all students will have the full week to complete the exam, most students who typically require extra time accommodations will not need any other special arrangements for this assessment. Additionally, students are not eligible to use an SRA for the midterm, and no late exams will be accepted. Unlike the weekly activities on OWL, students may not work together on the exam.

Final Exam (45%):

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 midterm exam. It will be cumulative in nature, covering material from the entire term (including Stata Labs). Like the midterm, students may not work together on the exam. The exam will be available to students for 48 hours. Students are free to take the exam at any point during that period, but they will have 4 hours to complete it once they begin. The exam will be designed to take 1.5 hours; by offering 4 hours, all students will be provided with a *universal accommodation*. Consequently, most students who typically require extra time accommodations will not need any special arrangement for this assessment.

Additional Notes About Grading:

There will be no opportunities for extra credit. I encourage you to work consistently throughout the semester, and to reach out to other students in the class, the TA, or me as soon as you have trouble with the material. In keeping with departmental guidelines, it is expected that the class average for this course will be around 69-73%. 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

If you have course-related questions that may be relevant to the whole class, I encourage you to post them to the *Course Café* on OWL's Forums. If you have a specific question for me, you may contact me through OWL *Messages*. If there is a problem with OWL, send me an email (pdenice@uwo.ca).

Students are also encouraged to meet with me individually or in small groups during my student drop-in hours. You can set up a 15-minute meeting during these hours through Calendly.

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 first 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 not be accepted except in extraordinary circumstances; for these, please go through the usual accommodations process. An assignment cannot be submitted after it has been returned to the class. For those with extended illness self-reports who cannot complete the assignment within this time frame, their final course mark will be reweighted without the assignment.

Assignment Evaluation:

All assessments are assigned and turned in using OWL's Tests & Quizzes tool. This tool allows OWL to automatically mark and provide feedback on some—but not all—of the questions in a problem set. Thus, the initial mark you receive on your problem set is likely not your final mark. The TAs and instructor will go through and manually complete the marking of your problem sets over the week after they are submitted. After a finalized mark is returned, students should wait 24 hours to digest feedback before contacting the TA or instructor; to ensure a timely response, reach out with questions within 7 days.

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 offense (the Scholastic Offense Policy can be viewed in the Western Academic Calendar).

All required papers 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).

Policies on Examinations:

The midterm and final examinations in this course are open-book and open-note. Students may consult the textbook, their notes, and the OWL course site. They may also use a calculator of their choosing. However, students may not consult with one another or receive any outside help. Computer-marked multiple choice and short-answer exams may be subject to submission for

similarity review by software that will check for unusual coincidences in answer patterns, which can indicate cheating.

Copyright of Lectures and Other Course Materials:

Any materials created by the instructor (e.g., videos, notes, hand-outs, 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 offense.

Scholastic Offenses:

Scholastic offenses are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offense

(www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf).

Academic Consideration for Missed Work:

Students who are seeking academic consideration for missed work during the semester may submit a self-reported absence form online provided that the absence is 48 hours or less and the other conditions specified in the [Senate policy](#) are met. There are two important exceptions to this rule: SRAs will not be allowed for final examinations or assessments worth more than 30% of a given course.

Students whose absences are expected to last longer than 48 hours, or where the other conditions detailed in the policy are not met (e.g., work is worth more than 30% of the final grade, the student has already used 2 self-reported absences, the absence is during the final exam period) may receive academic consideration by submitting a Student Medical Certificate (for illness) or other appropriate documentation (for compassionate grounds).

All students pursuing academic consideration, regardless of type, must contact their instructors no less than 24 hours following the end of the period of absence to clarify how they will be expected to fulfill the academic responsibilities missed during their absence. Students are reminded that they should consider carefully the implications of postponing exams or delaying submission of work, and are encouraged to make appropriate decisions based on their specific circumstances. For the full SRA policy, see here:

https://counselling.ssc.uwo.ca/procedures/academic_consideration.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 Wellbeing at Western (http://uwo.ca/health/mental_wellbeing/index.html) for a complete list of options for getting help.

Disputing a Grade:

Students who wish to dispute an assignment, exam, or course grade must write a one-page explanation justifying why their work should be re-evaluated. Work will not be re-evaluated on the basis that students were sick or feeling stressed when completing the assignment. Please be advised that a student's mark may go up or down upon re-evaluation.

Rounding of Marks:

Final marks, irrespective of the number of decimal places used in marking individual assignments and exams, will be calculated to one decimal place and rounded to the nearest integer (e.g., 74.4 becomes 74, 74.5 becomes 75). Marks will not be bumped to the next grade or GPA (e.g., a 79 will not be bumped up to an 80). The mark attained is the mark you achieved; requests for mark "bumping" will be denied.

Extraordinary Circumstances:

The content and/or evaluation of this course is subject to change in the event of extraordinary circumstances beyond the University's or instructor's control.

Course Schedule

Please note: 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 through our OWL course website.

New material is released on OWL every Thursday at 9:00am. Students will have one week to complete all of that week's material at their own pace. All activities and practice questions must be completed by the next Thursday (at 11:55pm).

Week / Date	Topics	Readings and Deadlines
<i>Part I: Descriptive statistics</i>		
1	Sept. 9 What is statistics? Data measurement	IS: Ch. 1 (intro + sections 1.1-1.3)
2	Sept. 16 Organizing our data Stata Lab 1: The basics	IS: Ch. 2 (intro + sections 2.1-2.3)
3	Sept. 23 Describing our data	IS: Ch. 2 (sections 2.5-2.7)
4	Sept. 30 Probability Stata Lab 2: Describing data	IS: Ch. 3 (intro + sections 3.1-3.4), Ch. 4 (intro + sections 4.1-4.3), Ch. 5 (intro + section 5.1)
5	Oct. 7 The Normal curve Calculating z -scores	IS: Ch. 6 (intro + sections 6.1-6.2)
<i>Part II: Inferential statistics</i>		
6	Oct. 14 Samples and populations Stata Lab 3: Graphs	IS: Ch. 7 (intro + sections 7.1-7.3), Ch. 8 (intro + sections 8.1-8.3)
7	Oct. 21 <i>No new material</i>	Midterm Exam
8	Oct. 28 Hypothesis testing: Differences in means	IS: Ch. 9 (intro + sections 9.1-9.6), Ch. 10 (intro + sections 10.1-10.4)
	Nov. 2 <i>Reading Week</i>	<i>Enjoy the break!</i>
9	Nov. 11 Hypothesis testing: Proportions Stata Lab 4: Testing differences	IS: Continue with Week 7's readings

10	Nov. 18	Nonparametric test of significance Stata Lab 5: Chi-square	IS: Ch. 11 (intro + sections 11.1, 11.3, 11.4)
11	Nov. 25	Correlation	IS: Ch. 12 (intro + sections 12.1-12.5)
12	Dec. 2	Regression Stata Lab 6: Correlation & regression	IS: Continue with Week 11's readings

Final Exam – Date & Time TBD (set by Registrar) – Students will be able to complete their exam over a 48-hour period through OWL's Tests & Quizzes portal. Once started, students will have 4 hours to complete it. The exam will be open-book and open-note.