



Sociology 360: Statistics for Sociologists I
University of Wisconsin-Madison
Spring 2025

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Office hours:

Mondays, 9:15-11:15 AM

2450 Sewell Social Sciences

Office hours:

Tuesdays 11:15 AM- 12:15 PM

Thursdays 1:00-2:00 PM

or by appointment

Ag Hall 308F

Office hours:

Wednesdays 1:00-2:00 PM

Thursdays 11:15 AM- 12:15 PM

or by appointment

7102 Sewell Social Sciences

Lecture time and place: Tuesday and Thursdays, 9:30-10:45 AM, Van Vleck B239

Labs: All labs meet in Sewell Social Sciences 3218. Check your course schedule for your section day and time.

- Lab 301: Tuesday, 1:20-3:15 PM, Jingjing Zhao
- Lab 302: Tuesday, 3:30-5:25 PM, Jingjing Zhao
- Lab 303: Wednesday, 9:55-11:50 AM, Jane Ahn
- Lab 304: Wednesday, 1:20-3:15 PM, Jane Ahn

Course description: Welcome to Sociology 360: Statistics for Sociologists I. This course provides an introduction to statistics designed for students in the social sciences. Part I focuses on descriptive statistics. We will cover strategies for exploring and interpreting data and for examining relationships between variables. Topics covered include describing data with bar charts, boxplots, and histograms; summary statistics; the normal distribution; scatterplots and correlation; regression; and two-way tables. We will also discuss the strengths and weaknesses of various methods of data production. Part II focuses on statistical inference. In this part of the course, we will discuss the logic and methods of making inferences about populations from sample data. In so doing, you will learn how to test hypotheses with a variety of statistical tests. Topics in this section include: the meaning of statistical significance, how to calculate confidence intervals, and how to conduct statistical tests for means, count data, and regressions. Throughout the course, you will analyze small bodies of data using Stata and interpret your findings.

Key Course Information

Canvas course URL: <https://canvas.wisc.edu/courses/444889>

Instructional Mode: In-person.

Prerequisites: Basic algebra skills.

Credits: 4 credits from two 75-minute lectures and a 115-minute lab weekly. Course work includes attendance at weekly lectures, weekly lab, weekly homework, two exams, and the data analysis project.

Course Designations: Gen Ed-Quantitative Reasoning Part B; Level-Intermediate; L&S Credit-Counts as Liberal Arts and Science credit in L&S.

Required Text: None

Optional Texts: There is no required textbook for the course, but the course follows the basic structure of the Moore et al. If you learn better by having a textbook to read (rather than only from the lecture), you may wish to purchase any edition of this textbook: **Moore, et al. The Basic Practice of Statistics. New York: W.H. Freeman. Any edition.** Another optional textbook that also conveys the material covered in this course well is **De Veaux, et al. Intro Stats. Pearson Education. Any edition.** I have listed the chapters of both of these books that correspond with lectures in the schedule below for your reference.

Software: We will devote a substantial amount of time to using Stata, which is freely available to UW-Madison students. You will also be able to access Stata using Winstat from the computer labs in Social Science or from home. Course handouts, on-line help files, and instruction in section meetings will teach you how to use Stata gradually. Google search could also be very useful in learning Stata. In addition to Stata, you will need word processor (e.g., MS Word) and spreadsheet software (e.g., MS Excel). All software is available via the UW-Madison Software Library <https://software.wisc.edu/cgi-bin/ssl/csl.cgi>.

Calculators: You will need a calculator for the homework assignment and especially for exams. The calculator must be able to perform basic functions, including adding and subtracting, multiplying and dividing, and squaring and taking the square root of numbers. You may not use the calculator on your phone in an exam. Bring your calculator to lecture, lab, and the exams.

Lab: Lab is offered in four different sections. Times and locations depend on your enrollment; for a listing of all lab times and locations, see your course schedule. Labs are in-person and you should plan on attending the same lab every week. In labs, we will (1) deepen our understanding of the material and (2) get to know an important and easy-to-use piece of statistical software: Stata.

Office hours: We would be happy to see you in office hours. To make an appointment with your lecturer or TA, please email them, or drop by during their office hours. Office hours are meant as a space for you to ask specific conceptual questions rather than for us to check your answers.

Course Learning Outcomes:

We have designed this course to achieve the following learning outcomes designated as priorities by the Department of Sociology:

- **Conduct Research and Analyze Data** (primarily quantitative). Although professional-quality research requires graduate-level training, we expect that all undergraduate majors will be able to conduct small-scale research in which they formulate a research question, analyze data, and draw conclusions. Towards the goal, this course will offer you the basic but very serviceable training for quantitative data analysis.
- **Critically Evaluate Published Research.** Sociology graduates will be able to read and evaluate published research as it appears in academic journals and popular or policy publications. Because a majority of social science publications are based on quantitative research, this course will equip you with the knowledge critical to read and crucially evaluate much of social science research publications.
- **Communicate Skillfully.** Sociology majors write papers that build arguments and assess evidence in a clear and effective manner. In this course, you will learn how to write well about quantitative data analysis.
- **Critical Thinking about Society and Social Processes.** Sociology graduates can look beyond the surface of issues to discover the "why" and "how" of social order and structure and consider the underlying social mechanisms that may be creating a situation, identify evidence that may adjudicate between alternate explanations for phenomena, and develop proposed policies or action plans in light of theory and data. In this course, you will learn how to use statistical thinking and analysis to perform such tasks.
- **Prepare for Graduate School and the Job Market.** Students use their social research skills to identify opportunities for employment or further study, assess their qualifications for these opportunities, and identify strategies for gaining the necessary knowledge and experience to improve their qualifications. This course will offer one of the most valuable skills that you need as you prepare for graduate school and the job market.
- **Improve Project Management Skills.** Students will improve their skills in time management, ordering and executing a series of complex and inter-related tasks, and integrating distinct components of a project into a final product.

In addition, the course satisfies Quantitative Reasoning Part B Learning Outcomes by challenging students to think critically and apply quantitative skills to identify the correct statistical procedures to use to answer questions, interpret data, draw conclusions, and solve problems. Specifically, the learning outcomes are:

- Manipulate quantitative information to create models, and/or devise solutions to problems using multi-step arguments, based on and supported by quantitative information.
- Evaluate models and arguments using quantitative information.
- Express and interpret in context models, solutions, and/or arguments using verbal, numerical, graphical, algorithmic, computational or symbolic techniques.

Honors: Students who are interested in honors for the course (and who have enrolled in it) will earn honors credit by completing an additional assignment that involves data interpretation and writing. You must contact the instructor in the first two weeks of the semester if you are taking the course for honors.

Assignments

Homework (25%)

There will be homework problems assigned for each week, which will usually be due by 11:59 PM on Saturdays. Answers to online problem sets will be shown in Canvas after the due date and discussed in lab. Homework received after 11:59 PM on Saturdays will be counted as late.

- Penalty for late homework: Homework turned in after the due date will be docked 10% per day. It does not matter if it is only 1 minute late; it will still be docked 10% if it is late, so plan to get your homework in on time. Because we understand that your schedule may not permit you to devote as much time as you would like to all the homework assignments, your lowest homework score will be dropped when computing your final grade.
- Collaborating on homework: You are encouraged to discuss the problems on the weekly homework assignments with other students in the class to further your understanding of the material, but you cannot copy your classmates' work or copy answers you may find elsewhere. You must work independently on exams, the take home review assignment, and the data analysis project without the use of your classmates or artificial intelligence assistance.

Data analysis project (15%)

In addition to the homework, there will be one data analysis project. This is meant to put the material into context, help solidify what you have learned, and approximate real-world data analysis. You must work independently on this project without the use of your classmates or artificial intelligence assistance. Further instructions will be distributed in class.

Exams (50% total (20% exam 1, 30% exam 2))

There will be two non-cumulative in-person exams. Exam questions will consist of a mix of multiple choice, true/false, and open-ended questions, requiring you to interpret results, discuss appropriate analytic methods, and perform relevant calculations. You may bring your calculator to the exams but you must show enough handwork to demonstrate understanding.

- Make-up Examinations. If you cannot take an exam because of an unavoidable scheduling conflict (e.g., religious holiday, athletic event), you must contact the instructor (not the TA) via email at least 2 weeks prior to the exam date. If you have an emergency that prevents you from taking an exam, contact the instructor as soon as possible. Permission of the instructor is required to take a make-up exam. A make-up exam will be scheduled either before or after the original exam date. Be aware that the make-up exam may be different from and potentially more difficult than the original exam.

Lectures and lecture attendance and participation (5%)

Lectures focus on basic concepts and their application. Attendance and participation are expected and will contribute to your final grade. An attendance sign in sheet will be circulated during each lecture which you should initial. You may have **four** "free" lecture absences. That is, you may miss four lectures, no questions asked, with no impact to your final grade. Otherwise, there are no "excused" absences. You do not need to contact the lecturer or your TA if you will be absent for lecture. However, if you have a situation that requires you not to be in lecture for a prolonged period, please email the lecturer.

Lecture slides and/or recordings may or not be posted to Canvas after lecture (at the discretion of the instructor). For this reason, if you miss lecture, we strongly suggest you contact your TA, the GUTS tutor, or the lecturer to discuss what you missed during lecture.

Lab and lab attendance and participation (5%)

Labs will consist of review of the material covered in lecture, discussion of homework problems, and instruction in STATA. Attendance in lab is expected and we know from experience that students who regularly attend lab receive higher final grades. Attendance in lab will be tracked by your TA. Similar to lecture, you may have **two** "free" lab absences. That is, you may miss two lab sessions, no questions asked, with no impact to your final grade. Otherwise, there are no "excused" absences.

Lab slides and/or handouts may or not be posted to Canvas after lab (at the discretion of the instructor). For this reason, if you miss lab, we strongly suggest you contact your TA or the GUTS tutor to discuss what you missed during lab.

Policy on technology and civility in classroom: I expect you to participate actively and respectfully both in lectures and lab meetings. Research shows we learn more when we take notes by hand rather than on a laptop (Mueller and Oppenheimer 2014). You may not use a laptop, tablet, or cellphone during the lecture or lab. All you need to bring to lecture and lab are paper, a pencil, a calculator, and your formulas and tables handout (to be distributed on the first day of class). There is one exception to this: sometimes the McBurney center asks a student to take notes on a computer on behalf of a student registered with the center. A request to use technology for this purpose must be made with the instructor in advance. Any other use of a laptop, tablet, or cellphone during lecture or lab will affect lecture and lab participation grades.

Final Grades:

Extra credit may or may not be offered at the discretion of the instructor. Curving may or may not be implemented at the discretion of the instructor.

Final grades will be consist of the following components:

- Weekly homework: 25%
- Data analysis project: 15%
- Exams: 50% (exam 1: 20%, exam 2: 30%)
- Lecture attendance and participation: 5%
- Lab attendance and participation: 5%

Final grades will be computed as follows:

- A=93-100
- AB=87-92
- B=83-86
- BC=77-82
- C=70-76
- D=60-69
- F=< 60

Academic Policies

Academic calendar and religious observances: View the full [academic calendar](#) in addition to information about religious and election day observances. Students are responsible for notifying instructors within the first two weeks of classes about any need for flexibility due to [religious observances](#). Establishment of the academic calendar for the University of Wisconsin–Madison falls within the authority of the faculty as set forth in [Faculty Policies and Procedures](#). Construction of the academic calendar is subject to various rules and laws prescribed by the Board of Regents, the Faculty Senate, State of Wisconsin and the federal government. Find [additional dates and deadlines for students](#) on the Office of the Registrar website.

Academic integrity: By virtue of enrollment, each student agrees to uphold the high academic standards of the University of Wisconsin–Madison; academic misconduct is behavior that negatively impacts the integrity of the institution. Cheating, fabrication, plagiarism, unauthorized collaboration and helping others commit these previously listed acts are examples of misconduct which may result in disciplinary action. Examples of [disciplinary sanctions](#) include, but are not limited to, failure on the assignment/course, written reprimand, disciplinary probation, suspension or expulsion.

Artificial intelligence: The use of artificial intelligence (AI) tools and applications (including, but not limited to, Copilot, DALL-E, ChatGPT, Grammarly and others) for course assignments and assessments is prohibited. Using them in any way for this course is a violation of the course's expectations and will be addressed through UW–Madison's [academic misconduct policy](#), specifically UWS 14.03(1)b (b) Uses unauthorized materials or fabricated data in any academic exercise.

Accommodations for students with disabilities: The University of Wisconsin–Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12) and UW–Madison policy ([UW-855](#)) require the university to provide reasonable accommodations to students with disabilities to access and participate in its academic programs and educational services. Faculty and students share responsibility in the accommodation process. Students are expected to inform faculty of their need for instructional accommodations during the beginning of the semester, or as soon as possible after being approved for accommodations. Faculty will work either directly with the student or in coordination with the [McBurney Disability Resource Center](#) to provide reasonable instructional and course-related accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.

Course evaluations: Students at the University of Wisconsin–Madison have the opportunity to evaluate their learning experiences and the courses they are enrolled in through course evaluations. Many instructors use a [digital course evaluation tool](#) to collect feedback from students. Students typically receive notifications two weeks prior to the end of the semester requesting that they complete course evaluations. Student participation is an integral component of course development, and confidential feedback is important. UW–Madison strongly encourages student participation in course evaluations.

Diversity and inclusion: [Diversity](#) is a source of strength, creativity, and innovation for the University of Wisconsin–Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. UW–Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.

Mental health and well-being: Students often experience stressors that can impact both their academic experience and personal well-being. These may include mental health concerns, substance misuse, sexual or relationship violence, family circumstances, campus climate, financial matters, among others. UW–Madison students are encouraged to learn about and utilize the university's mental health services and/or other resources as needed. Student can visit uhs.wisc.edu or call University Health Services at (608) 265-5600 to learn more.

Privacy of student records and use of audio recorded lectures: Lecture materials and recordings for this course are protected intellectual property at UW–Madison. Students enrolled in this course may use the materials and recordings for their personal use related to participation in the course. Students may also take notes solely for their personal use. If a lecture is not already recorded, students are not authorized to record lectures without permission unless they are considered by the university to be a qualified student with a disability who has an approved accommodation that includes recording. [Regent Policy Document 4-1] Students may not copy or have lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities, with the exception of sharing copies of personal notes as a notetaker through the McBurney Disability Resource Center. Students are otherwise prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or

commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct. View [more information about FERPA](#).

Students' rules, rights, and responsibilities: View more information about [student rules, rights and responsibilities](#) such as student privacy rights, sharing of academic record information, academic integrity and grievances.

Teaching and learning data transparency: The privacy and security of faculty, staff and students' personal information is a top priority for UW–Madison. The university carefully reviews and vets all campus-supported digital tools used for teaching and learning, including those that support [data empowered educational practices](#) and proctoring. View more information about [teaching and learning data transparency](#) at UW–Madison.

Sociology 360: Statistics for Sociologists I
Course Schedule
Spring 2025

Note: The schedule below may change. All announcements regarding schedule changes will be emailed to you or announced in lecture or lab. You are responsible for keeping up to date on these changes.

Week	Lecture Date	Topic	Chapters (M=Moore) (D=De Veaux)	Notes
1	1. T January 21	FIRST DAY OF CLASS Introduction, picturing distributions with graphs	M: Ch. 1 D: Ch. 3, 4	Labs begin and meet this week
	2. Th January 23	Picturing distributions with graphs, describing distributions with numbers	M: Ch. 1, 2 D: Ch. 3, 4, 5	
2	3. T January 28	Describing distributions with numbers	M: Ch 2 D: Ch. 5	
	4. Th January 30	The normal distribution	M: Ch 3 D: Ch 6	
3	5. T February 4	The normal distribution continued	M: Ch 3 D: Ch 6	
	6. Th February 6	Scatterplots and correlations	M: Ch 4 D: Ch 7	
4	7. T February 11	Regression	M: Ch 5 D: Ch 8	
	8. Th February 13	Regression continued	M: Ch 5 D: Ch 8	
5	9. T February 18	Two-way tables	M: Ch 6 D: Ch 3	
	10. Th February 20	Producing data: sampling	M: Ch 8	

			D: Ch 12	
6	11. T February 25	Producing data: experiments	M: Ch 9	
	12. Th February 27	Catch up and review for exam 1	D: Ch 13	
7	T March 4	Exam 1 during class time		No labs this week
	13. Th March 6	Introducing probability	M: Ch 12 D: Ch 11, 14	
8	14. T March 11	Sampling distributions	M: Ch 15 D: Ch 18	
	15. Th March 13	Confidence intervals: the basics	M: Ch 16	
9	16. T March 18	Confidence intervals continued	M: Ch 16	
	17. Th March 20	Tests of significance: the basics	M: Ch 17 D: Not comparable	
10	T March 25	Spring Break		No lecture or labs this week
	Th March 27	Spring Break		
11	18. T April 1	Tests of significance continued	M: Ch 17 D: Not comparable	Final project assigned and discussed
	19. Th April 3	Inference in practice	M: Ch 18 D: Ch 23	
12	20. T April 8	Inference about a population mean	M: Ch 20 D: Ch 23	
	21. Th April 10	Comparing two means	M: Ch 21 D: Ch 24	
13	22. T April 15	Inference about a population proportion	M: Ch 22 D: Ch 20	
	23. Th April 17	Comparing two proportions	M: Ch 23 D: Ch 22	
14	24. T April 22	Synthesizing tests thus far		
	25. Th April 24	Two categorical variables: the chi-square test (if time: inference for regression)		
15	26. T April 29	Catch up and review		
	Th May 1	Exam 2 during class time		

The final project is due by: 11:59 PM, Tuesday, May 6, 2025, on Canvas