

**Sociology 360: Statistics for Sociologists I**  
**University of Wisconsin-Madison**  
**Fall 2023**

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**Lecture time and place:** Mondays and Wednesdays, 2:30-3:45pm, Science Hall 180

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

**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/371263>

**Instructional Mode:** In-person.

**Prerequisites:** Basic algebra skills.

**Credits:** 4 credits from two 75-minute lectures and a 115-minute lab weekly. Attendance at lectures, weekly discussion sections, weekly homework, exams, take home quiz, and 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 Text:** Moore, et al. *The Basic Practice of Statistics*. New York: W.H. Freeman. Any edition. 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 and lecture notes), you may wish to purchase any edition of this textbook.

**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. You may also download and install Stata on your computer from the following website: [https://software.wisc.edu/cgi-bin/ssl/csl\\_download.cgi](https://software.wisc.edu/cgi-bin/ssl/csl_download.cgi). 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. You will need your calculator for in-class work as well; please bring your calculator with you to lecture.

**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. Professor Schwartz uses a scheduling app to book office hours to manage demand (<https://cswartz.youcanbook.me>). To make an appointment with your 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: Deadlines:** There will be homework problems assigned for each lecture, which will usually be due *before* class (2:30pm) on Mondays. Answers to online problem sets will be shown in Canvas after the due date and discussed in lab. Homework received after 2:30pm on Mondays will be counted as late.

**Penalty for late homework:** Homework turned in after the due date will be docked 20% per day. 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 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. You must work independently on exams, the take home quiz, and the data analysis project.

**Data analysis project:** 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. Further details will be distributed in class.

**Exams:** 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 more difficult than the original exam.

**Take home quiz:** There will be one take home quiz about two-thirds of the way through the class to test your knowledge of the material between the first and second exams. No late quizzes will be accepted.

**Lectures:** Lectures focus on basic concepts and their application. Attendance and participation are expected and will contribute to your final grade. The lecture slides will be available on the course website by 9pm the night before class. I encourage that you print and bring them to class to take notes.

**Labs:** 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 will contribute to your grade.

**Attendance & participation:** At the end of most lectures, you will have an opportunity to write a very brief lecture reflection via Canvas. In class, I will present a Canvas access code, which will enable you to write a reflection for a few minutes at the end of class. You can do this by downloading the "Canvas Student" app on your phone or using Canvas on your laptop. You may have *five* "free" lecture absences, that is, if there is a lecture reflection, you do not need to do five of these to receive 100% attendance. There are no "excused" absences. Please do not email the instructor or TA about making up lost lecture reflections. If you have a situation that requires you not to be in lecture for a prolonged period of time, please email Prof. Schwartz.

**Civility in Classroom:** I expect you to participate actively (but respectfully) both in lectures and lab meetings. You *may not* use laptop, tablet, or cellphone during the lecture unless you are using them to take notes on the material.

**Final Grades:** Final grades will be calculated as follows:

Exams	50% (20%, 30%)
Weekly homework	25%
Data analysis project	15%
Take home quiz	5%
Attendance & participation	5%

Final grades will be computed as follows: A=92-100, AB=88-91, B=80-87 BC=76-79, C=68-75, D=50-67, F=< 50. I follow standard rounding rules, e.g., 91.5 rounds up to 92, 91.4 rounds down to 91. I may curve the grades up if necessary, but I never curve down.

### Academic Policies

**Academic calendar & 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. For additional dates and deadlines for students, see the [Office of the Registrar's pages](#). **Students are responsible for notifying instructors within the first two weeks of classes** about any need for flexibility due to [religious observances](#).

**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.

According to UWS 14, academic misconduct is defined as:

- seeks to claim credit for the work or efforts of another without authorization or citation;
- uses unauthorized materials or fabricated data in any academic exercise;
- forges or falsifies academic documents or records;
- intentionally impedes or damages the academic work of others;
- engages in conduct aimed at making false representation of a student's academic performance;
- assists other students in any of these acts.

For a complete description of behaviors that violate the University's standards as well the disciplinary penalties and procedures, please see the Office of Student Conduct and Community Standards [website](#). If you have questions about the rules for any of the assignments or exams,

please ask your instructor.

**Accommodations.** 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 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. (See: [McBurney Disability Resource Center](#))

**Course evaluations, grievance and appeal rights.** The Department of Sociology regularly conducts student evaluations of all professors and teaching assistants near the end of the semester. Student participation in course evaluation is an integral component of course development, and confidential feedback is important. UW-Madison strongly encourages student participation in course evaluations at the end of the semester. Students who have more immediate concerns should report them to the instructor or to the chair, 8128 Social Science (socchair@ssc.wisc.edu).

**Institutional statement on diversity & inclusion:** [Diversity](#) is a source of strength, creativity, and innovation for UW-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. The University of Wisconsin-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 statement:** 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. Students are encouraged to learn about and utilize UW-Madison's mental health services and/or other resources as needed. Visit [uhs.wisc.edu](http://uhs.wisc.edu) or call University Health Services at (608) 265-5600 to learn more.

**Privacy of student records & the use of audio recorded lectures statement:** Lecture materials and recordings for this course are protected intellectual property at UW-Madison. Students in courses may use the materials and recordings for their personal use related to participation in class. 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, & responsibilities:** [Rights & Responsibilities](#)

**Sexual harassment and misconduct:** The mission of the University of Wisconsin-Madison (university) is to provide a teaching, learning and working environment in which faculty, staff, students, and guests can discover, examine critically, preserve, and transmit knowledge, wisdom, and values that will improve the quality of life for all. To promote the institutional mission, the university is committed to creating and maintaining a campus community that is free from sexual harassment and sexual violence. This policy prohibits acts of sexual harassment and sexual violence (including sexual assault, dating violence, domestic violence, stalking, and sexual exploitation) in all programs and activities of the University. Individuals who engage in such acts, hereafter referred to collectively as sexual harassment and sexual violence, are in violation of this policy and are subject to disciplinary action. Individuals who are subjected to acts of sexual harassment or sexual violence in violation of this policy are encouraged to report these incidents. If you believe that you have been harassed, contact your instructor, the chair of the Department of Sociology ([socchair@ssc.wisc.edu](mailto:socchair@ssc.wisc.edu)), and/or [UW-Madison Office of Compliance](#). For more information, see the UW-Madison Office of Compliance [website](#).

**Soc 360**  
**Course Schedule**  
**Fall 2023**

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	Notes
1	W Sep 6	Introduction & picturing distributions	No labs this week.
2	M Sep 11	Picturing distributions; Describing distributions	Labs begin this week.
	W Sep 13	Describing distributions	
3	M Sep 18	The normal distribution	
	W Sep 20	The normal distribution, continued	
4	M Sep 25	Scatterplots and correlation	
	W Sep 27	Regression	
5	M Oct 2	Regression, continued	
	W Oct 4	Categorical data: two-way tables	
6	M Oct 9	Producing data: sampling	
	W Oct 11	Producing data: experiments	Practice exam questions distributed.
7	M Oct 16	Introducing probability	
	W Oct 18	Review and catch-up	
8	M Oct 23	<b>Exam 1</b>	Note: Exam 1 date changed from 10/18 to 10/23
	W Oct 25	Sampling distributions	
9	M Oct 30	Confidence intervals: the basics	
	W Nov 1	Confidence intervals, continued	
10	M Nov 6	Tests of significance: the basics	
	W Nov 8	Tests of significance, continued	
11	M Nov 13	Inference in practice	
	W Nov 15	Inference about a population mean	Final Project assigned. Take home quiz assigned.
12	M Nov 20	Two-sample problems	No labs this week
	W Nov 22	<b>Take home quiz</b>	
13	M Nov 27	Inference about a population proportion	
	W Nov 29	Comparing two proportions	
14	M Dec 4	Synthesizing tests thus far	Practice exam questions distributed.
	W Dec 6	Two categorical variables: the chi-square test. (If time: inference for regression.)	
15	M Dec 11	Catch up and Review	
	W Dec 13	<b>Exam 2</b>	

**Final project due by 12:25pm 12/15/2023, Friday via Canvas.**



## Inclusivity at UW-Madison

*Working well with diverse individuals is critical to your success:*

In our diverse society, being able to effectively interact and work in teams with people from many different backgrounds is critical to your success. Like leadership or critical thinking, learning how to work well with people from diverse backgrounds is a skill anyone can learn with practice. Badgers who build this skill in college are not only doing the right thing, they are also more successful in the job market and excel more quickly in their careers.

*What your peers think:*

A recent survey found that 87% of UW students agreed with this statement: “I embrace diversity and make sure that people from all backgrounds feel part of the UW-Madison community.” They also said they do their best to behave inclusively, though they sometimes worry about saying the wrong thing. While overt acts of discrimination occur at UW, recent research suggests these acts are committed by a small minority of individuals who differ radically from other students in terms of their attitudes and personalities.

*What you can do:*

Being inclusive is easy. By doing some simple things, you can improve our campus climate.

<b>Do these things...</b>	<b>...but not these things</b>
Have a conversation with a student who has a different background from you. Ask them about their experiences.	Assume you know about an individual’s abilities and interests just because they belong to a certain social group.
Attend several activities, talks, or other diversity events per semester. Find an events list at <a href="http://bit.ly/UWdiverse">bit.ly/UWdiverse</a> .	Tell someone they conform to a positive stereotype about a group they belong to. Instead, give them a personal compliment!
Display the same level of warmth and enthusiasm when interacting with students from all social groups.	Tell someone their name is odd because you find hard to pronounce. Instead, learn how to say their name correctly.
Ask individuals from different social groups what terms or phrases they find offensive.	Tell someone they are different from “typical” members of a social group they belong to.
Choose students from different social groups for class projects and study groups.	Remain silent when you see others engage in discrimination. Speak up!

Questions about this page? Send an email! [schwakopf@wisc.edu](mailto:schwakopf@wisc.edu)