

Elementary Statistics

STAT 95

Fall 2025 Section 08 In Person 3 Unit(s) 08/20/2025 to 12/08/2025 Modified 08/08/2025

Contact Information

Instructor	Mike Dillinger, PhD
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Office:	DMH 230
Drop-in Hours	MW 12:30-1:15
Class Days/Time	MW 1:30-2:45
Classroom	ENG 303

Course Description and Requisites

Hypothesis testing and predictive techniques to facilitate decision-making; organization and classification of data, descriptive and inferential statistics, central tendency, variability, probability and sampling distributions, graphic representation, correlation and regression, chi-square, t-tests, and analysis of variance. Computer use in analysis and interpretation.

Satisfies 2. Mathematical Concepts and Quantitative Reasoning (Formerly Area B4).

Prerequisite(s): Math Enrollment Category M-I or M-II, or for Categories III or IV, completion of a GE Area 2 course with a grade of C- or better.

Grading: Letter Graded

Note(s): Intended for Psychology majors and minors as well as for programs in Behavioral Science, Child Development, Education, Health Science, Nursing, Nutritional Science, Social Science, and Social Work.

* Classroom Protocols

This is an in-person course.

Each week, on Mondays and Wednesdays from 12:30 PM - 2:45 PM, we will meet for in-person class sessions. During these sessions, we will engage in lecture material, content-related discussions (Mondays), and lab activities (Wednesdays).

We need to work together to foster an inclusive learning environment in which people with diverse backgrounds and perspectives are recognized, respected, and seen as a source of strength. It is my intent to present materials and activities that are respectful of diversity with regard to gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions on how I can make this course more equitable and inclusive to all forms of diversity are encouraged and appreciated.

All students are expected to exhibit professionalism and respect for each other and the instructor. Specifically, this means arriving to class on time, being prepared for class, participating in discussions, being civil to your fellow classmates and instructor, and paying attention to in-class demonstrations and lectures. If you arrive late to class or need to leave early from class, please sit near the door so as not to disturb the rest of the class. Please silence and put away cell phones during class. If I see that you are using your cell phone during lecture, I will ask you to put it away. Repeated violations of the cell phone policy may result in further disciplinary action. You may record lectures only if you obtain my permission first, and such recordings are only to be used for personal study and may not be posted online.

Academic Integrity

SJSU does not tolerate any forms of academic dishonesty in my courses. We all take issues of academic dishonesty very seriously and pursue disciplinary action rigorously, so please take extra care to avoid this sort of unpleasant situation. Any instances of cheating on exams results in an automatic 0 for the exam.

Plagiarized assignments automatically receive a score of 0. Plagiarism refers to using materials that you did not create (i.e., published works, work of other students, material created by artificial intelligence tools such as ChatGPT) and submitting it as your own creation without proper citation/attribution. When in doubt, remember this rule: All assignments in this course must be your own work and you must properly cite any resources that were used. Written assignments may be checked by TurnItIn and may be submitted to AI detection tools, as well.

I reserve the right to fail a student in the course if the academic dishonesty transgression is particularly severe. All instances of academic dishonesty are reported to the Office of Student Conduct and Ethical Development (SCED). Students may appeal any accusations of cheating or plagiarism to SCED.

AI Policy

All text or code submitted in this course must be your own. Contributions from anyone or anything else – including AI sources, must be properly cited every time they are used. Failure to do so constitutes an academic integrity violation, and I will follow our institution's policy to the letter in those instances.

You may use AI programs like ChatGPT or Gemini to help search for sources, generate outlines, and brainstorm. However, you should note that the material generated by these programs is often inaccurate, incomplete, or otherwise problematic. Beware that using them to generate text and arguments is likely to

stifle your own independent thinking and creativity.

You may not submit any written text generated by an AI program as your own. If you use material generated by an AI program, it must be verified, re-written, and cited like any other reference material.

Program Information

Welcome to this General Education course.

SJSU's General Education Program establishes a strong foundation of versatile skills, fosters curiosity about the world, promotes ethical judgment, and prepares students to engage and contribute responsibly and cooperatively in a multicultural, information-rich society. General education classes integrate areas of study and encourage progressively more complex and creative analysis, expression, and problem solving.

The General Education Program has three goals:

Goal 1: To develop students' core competencies for academic, personal, creative, and professional pursuits.

Goal 2: To enact the university's commitment to diversity, inclusion, and justice by ensuring that students have the knowledge and skills to serve and contribute to the well-being of local and global communities and the environment.

Goal 3: To offer students integrated, multidisciplinary, and innovative study in which they pose challenging questions, address complex issues, and develop cooperative and creative responses.

More information about the General Education Program Learning Outcomes (PLOs) can be found on the [GE website \(https://sjsu.edu/general-education/ge-requirements/overview/learning-outcomes.php\)](https://sjsu.edu/general-education/ge-requirements/overview/learning-outcomes.php).

Course Goals

Statistics is a toolkit of **methods for building and analyzing data** to help support research, planning, decision making, and other activities. "Data" is simply any collection of categories or measurements (which describe attributes or characteristics of something).

It's important to remember that the part of statistics that we'll discuss does not study numbers themselves (like math does), but rather the *things* that numbers help us describe. So it would be clearer to call this course "data science", "data analysis" or "applied statistics". I'll do my best to minimize the number of mathy discussions and equations that you'll need so we can focus on what it's all for and how to use it.

We'll discuss "statistics" in 4 parts:

Part I. Introduction

Part II. Building datasets

Part III. Describing datasets

Part IV. Comparing datasets

Course Learning Outcomes (CLOs)

GE Area 2: Mathematical Concepts and Quantitative Reasoning

Mathematical Concepts and Quantitative Reasoning courses enable students to use numerical and graphical data in personal and professional judgments and in understanding and evaluating public issues. Completion of Area 2 with a grade of C- or better is a CSU graduation requirement.

Area 2 courses help students understand information requiring quantitative analysis and how to use and analyze quantitative arguments. Completion of Area 2 with a minimum grade of C- is a CSU graduation requirement.

GE Area 2 Learning Outcomes

Upon successful completion of an Area 2 course, students should be able to:

1. use mathematical methods to solve quantitative problems, including those presented in verbal form;
2. interpret and communicate quantitative information using language appropriate to the context and intended audience;
3. reason, model, draw conclusions, and make decisions based on numerical and graphical data; and
4. apply mathematical or quantitative reasoning concepts to solve real life problems.

Writing requirement

The minimum writing requirement for Area 2 courses is 500 words in a language and style appropriate to the discipline.

Course Materials

All course materials will be on (or linked to) Canvas.

You do not have to buy a textbook for this course. There are many free textbooks and learning materials available on the web and through AIs. We will discuss these in class.

For several assignments you will need to use AIs like ChatGPT or Gemini. Gemini is available for free through your university Google account.

For the Lab activities, you will need to install the SPSS statistics program on your computer -- or borrow a computer that has it installed. Save yourself a headache: got to the Help Desk in Clark Hall and ask them to install it for you!

Course Requirements and Assignments

Plan to submit two assignments each week.

Assignment Type			
Create your own Study Guides	Best 10 topics	3 pts each	30 pts total
Lab Assignments	Best 10 assignments	4 pts each	40 pts total
Exams	Quiz	5 pts	
	Mid-term	10 pts	
	Final	15 pts	
			30 pts total
			100 pts total

✓ Grading Information

Standard SJSU grading applies to this course:

Grade Percentage

A+ 96.50 – 100%
 A 92.50 – 96.49%
 A- 89.50 – 92.49%
 B+ 86.50 – 89.49%
 B 82.50 – 86.59%
 B- 79.50 – 82.49%
 C+ 76.50 - 79.49%
 C 72.50 – 76.49%
 C- 69.50 – 72.49%
 D+ 66.50 – 69.49%
 D- 59.50 – 62.49%
 F ≤59.49%

University Policies

Per [University Policy S16-9 \(PDF\)](http://www.sjsu.edu/senate/docs/S16-9.pdf) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the [Syllabus Information](https://www.sjsu.edu/curriculum/courses/syllabus-info.php) (<https://www.sjsu.edu/curriculum/courses/syllabus-info.php>) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

Day	Study Guides due Monday before class	Date	Class Topic	Lab Assignments Due Wednesdays
	Part I: Introduction			
Wednesday		Aug 20	What is Statistics? Course Overview	
	Part II: Building Datasets			
Monday		Aug 25	Numbers vs Measurements	
Wednesday		Aug 27	What to measure? Measuring, Counting & Sampling	
Monday		Sept 1	Holiday -- No class	
Wednesday		Sept 3	AI Lab	
Monday	Kinds of Data & Scales of Measurement Study Guide	Sept 8	Kinds of Data	
Wednesday		Sept 10	Quiz: Building Datasets	

	Part III: Describing Datasets			
Monday		Sept 15	Data Visualization 1	
Wednesday		Sept 17	SPSS Lab	Entering and loading data
Monday	Frequency Distributions Study Guide	Sept 22	Frequency Distributions	
Wednesday		Sept 24	SPSS Lab	Generate Frequency Distributions
Monday	Measures of Central Tendency Study Guide	Sept 29	Central Tendency	
Wednesday		Oct 1	SPSS Lab	Calculate and Report Measures of Central Tendency
Monday	Measures of Variability Study Guide	Oct 6	Variability	
Wednesday		Oct 8	SPSS Lab	Calculate and Report Measures of Variability and other descriptive statistics
Monday	Data Visualization methods Study Guide	Oct 13	Data Visualization 2	
Wednesday		Oct 15	Mid-term: Describing Datasets	
	Part IV: Comparing Datasets			

Monday	Standardized scores Study Guide	Oct 20	Standardized scores	
Wednesday		Oct 22	SPSS Lab	Generate standardied z scores
Monday	Statistical Hypothesis testing Study Guide	Oct 27	Hypothesis Testing	
Wednesday		Oct 29	SPSS Lab	Generate and report one-sample hypothesis test
Monday	Correlation & Regression Study Guide	Nov 3	Correlation & Regression	
Wednesday		Nov 5	SPSS Lab	Generate and report results of correlation and regression
Monday	Statistical Significance Study Guide	Nov 10	Statistical Significance	
Wednesday		Nov 12	SPSS Lab	Generate and report significance tests
Monday	t Test Study Guide	Nov 17	Comparing 2 means: t test	
Wednesday		Nov 19	SPSS Lab	Generate and report results of t-test
Monday	One-way ANOVA Study Guide	Nov 24	Comparing 2 means: one-way ANOVA	
Wednesday		Nov 26	SPSS Lab	Generate and report results of one-way ANOVA
Monday	Multi-way ANOVA Study Guide	Dec 1	Comparing Multiple Means	

Wednesday		Dec 3	SPSS Lab	Generate and report results of multi-way ANOVA
Monday		Dec 8	Semester Recap	(Last Day of Class)
Wednesday		Dec 10	Final Exam; 1:00-3:00	