

**San José State University**  
**Department of Psychology**  
**Statistics 95, Elementary Statistics, Section 82, Fall 2024**

**Course and Contact Information**

<b>Instructor:</b>	Greg Savage, M.A.
<b>Office Location:</b>	Online (Zoom)
<b>Telephone:</b>	408-924-5648
<b>Email:</b>	Gregory.Savage@sjsu.edu
<b>Office Hours:</b>	Tuesday and Thursday 12:00 PM to 1:00 PM
<b>Class Days/Time:</b>	Thursday from 5:30 to 6:45 PM
<b>Classroom:</b>	Online
<b>Prerequisites:</b>	Math Enrollment Category M-I or M-II, or completion of a GE Area B4 course with a grade of C- or better.

**Course Description**

This course covers statistical concepts and the different types of statistical methods that are used in research studies (especially in social science). The topics that will be covered include a general introduction to the topic of statistics, variables and data values, samples and populations, descriptive statistics, frequency distributions and histograms, z scores, probability, sampling distributions, confidence intervals, hypothesis testing, correlation, and scatterplots.

From the catalog:

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.

**Course Format**

This course follows an online hybrid format with a scheduled Zoom meeting once per week. Please see the course schedule for specific due dates.

## **GE Learning Outcomes (GELO)**

Upon successful completion of this GE course, students will be able to:

Learning Objective 1 (GELO1): Mathematical concepts courses should prepare the student to use mathematical methods to solve quantitative problems, including those presented in verbal form.

Learning Objective 2 (GELO2): Mathematical concepts courses should prepare the student to demonstrate the ability to use mathematics to solve real life problems.

Learning Objective 3 (GELO3): Mathematical concepts courses should prepare the student to arrive at conclusions based on numerical and graphical data.

Learning Objective 4 (Specific to Area B4): Focus on basic mathematical techniques for solving quantitative problems and elementary numerical calculation

Learning Objective 5 (Specific to Area B4): Focus on organization, classification, and representation of quantitative data in various forms (e.g., tables, graphs, percentages, measures of central tendency, and spread)

Learning Objective 6 (Specific to Area B4): Focus on applications of mathematics to everyday life Stat 95

Instructor's Handbook 6 Learning Objective 7 (Specific to Area B4): Focus on applications of mathematical concepts to statistical inference

The above outcomes will be assessed through activities, homework assignments, quiz questions, discussion questions, and exam questions. For example, during an activity, students might be asked to perform calculations with data (LO 4), arrive at conclusions based on the calculations they have performed (GELO 3), create graphs and tables (LO 5), or think of examples of how a person might use a certain statistical method in a real-life situation (LO 6). Also, while completing a quiz, homework assignment, discussion set, or exam, students might be asked to read a scenario and decide what statistical method should be used in that scenario (GELO 1 and GELO 2); read a scenario, perform calculations, and then interpret the results (GELO 1 and GELO 2); create a graph or table based on a set of data (LO 5); or interpret a table or graph that has been provided by the instructor (LO 5).

In addition, Statistics 95 has a 500 word (minimum) writing requirement. This writing requirement will be satisfied through homework assignments, in-class assignments, and discussion board questions. In this course, students will be assessed on their ability to write about statistics clearly and coherently.

## **Course Learning Outcomes**

**Upon successful completion of this course, students will be able to:**

CLO 1- Understand statistical concepts and vocabulary

CLO 2- Understand the statistical methods covered during the semester, including when they are used, how they are used, and why they are used in addition to the logic/theory behind each method and what each method is able to accomplish.

CLO 3- Determine what statistical method should be used in a certain situation, use that method, and then correctly interpret the results.

CLO 4- Perform certain statistical calculations and / or graphing of data

CLO 5- Solve problems involving statistics

CLO 6- Perform statistical calculations or graphing with real data sets and correctly interpret the results

CLO 7- Use statistical software

CLO 8- Understand how statistical methods fit into the big picture of research including why they are needed, how they are used, and what they are able to accomplish.

CLO 9- Understand the limitations of statistical inference in general and in specific situations

CLO 10- Understand the factors that can affect the validity of the results of a statistical procedure and be able to determine whether the results of a statistical procedure are valid in a certain type of situation.

### **Program Learning Outcomes (PLO)**

Upon successful completion of the psychology major requirements...

*PLO1 – Knowledge Base of Psychology* – Students will be able to identify, describe, and communicate the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.

*PLO2 – Research Methods in Psychology* – Students will be able to design, implement, and communicate basic research methods in psychology, including research design, data analysis, and interpretations.

*PLO3 – Critical Thinking Skills in Psychology* – Students will be able to use critical and creative thinking, skeptical inquiry, and a scientific approach to address issues related to behavior and mental processes.

*PLO4 – Application of Psychology* – Students will be able to apply psychological principles to individual, interpersonal, group, and societal issues.

*PLO5 – Values in Psychology* – Students will value empirical evidence, tolerate ambiguity, act ethically, and recognize their role and responsibility as a member of society.

### **Required Texts/Readings**

#### **Textbook**

There is no required textbook for this course.

If you would like for me to recommend a statistics textbook (or other resource) to use as a reference, please

Speak with me as soon as possible.

### **Other technology requirements / equipment / material**

Students will need to have reliable internet access outside of class. Students will need to have a basic calculator that can add, subtract, multiply, divide, square numbers, and find square roots.

### **Course Requirements and Assignments**

#### **Exams:**

One midterm exam and one non-cumulative final exam will take place during the semester.

Exams might include multiple choice questions, short answer questions, and questions that ask students to perform calculations or graphing.

Both exams are open-notes but will need to be completed individually.

Both exams will be posted on Canvas and each student will need to upload them to Canvas by their due dates.

A late midterm exam will lose 10% of credit for each day that it is submitted late (until it is worth 50% credit)

A late final exam will lose 10% of credit for each hour that it is submitted late and can't be submitted more than 10 hours late.

Even though the final exam is not technically cumulative, it will be important to remember information from earlier in the semester because later topics build on earlier topics.

All information that I share with the class is material that I might ask about on an exam.

Cheating on exams will not be tolerated. Please refer to the section on Academic Integrity for information on the consequences of cheating.

#### **Activities:**

Each week, each student will complete an activity that will be posted on Canvas.

The activities that we complete during the semester might include running simulations (with cards or websites), collecting data from other students or the internet, performing calculations, creating graphs or diagrams, or other types of activities.

Each activity will be due at the deadline provided in the course schedule (by Canvas upload) and will lose 10% of credit for each day that it is submitted late (until it is worth 50% credit)

## **Homework Assignments:**

Each week, each student will complete a homework assignment that will be posted on Canvas.

Each homework assignment might include (but is not necessarily limited to) multiple choice questions, fill-in the blank questions, matching questions, short answer questions, graphing / diagramming questions, or questions asking for calculations. Some homework questions might ask for you to perform hand calculations (with work shown on paper), and some homework questions might ask for you to use Google Sheets.

All the questions on homework assignments will be my own questions (since there is no required textbook).

Each homework assignment will be due at the deadline provided in the course schedule (by Canvas upload) and will lose 10% of credit for each day that it is submitted late (until it is worth 50% credit).

## **Quizzes:**

Each week, students will complete an online quiz on Canvas.

Each week on Thursday, the quiz will be activated after class and will be open until Sunday at midnight.

Each quiz will be open-notes and open-book.

Each quiz might include multiple choice, short answer, or short essay questions.

Each quiz will include questions on the current week's material and possibly review questions.

Each quiz will lose 10% of credit for each hour that it is late, and all quizzes that are submitted more than 5 hours late will have a 50% penalty.

## **Discussion Board Responses:**

Each week, students will be required to respond to a set of 3 questions posted on the Canvas discussion board.

Each week, the first 2 questions will focus on material we have covered in lecture. These questions might include (but are not necessarily limited to) questions that ask you to describe your understanding of a certain topic, questions that ask you to analyze a real or hypothetical scenario presented in the question, questions that ask you to analyze or describe a video, website, table/diagram, or file attachment, questions that ask you to run simulations and describe your results, and questions that ask you to provide examples of concepts.

The third question will ask you to pose a question about the current week's material or to attempt to answer another student's question.

Each week, you won't be able to see other students' answers to the first two questions before submitting your own answer. However, you will be able to see other students' answers to the third question.

Although you can talk about the questions with each other or look up information online to include in your answers, your answers need to show effort at putting information into your own words. Students won't receive credit for answers that are copied from another student or from the internet. If you have any questions about paraphrasing information, please send me an email or come to my office hours.

During each week that discussion questions are assigned, your responses are due on Tuesday at midnight and will lose 10% of credit for each day that they are submitted late. Any discussion response that is more than 5 days late will receive a 50% penalty.

After submitting an answer to a discussion question, you will have until Sunday at midnight to earn partial credit by posting corrections to your original answer. If you make a correction, you will earn 50% credit for each piece of information that you successfully correct.

Please don't post a blank or incomplete response to gain access to other students' answers on the discussion board. If you do this, you will lose 50% of credit for each piece of information that you post after having access to other students' answers (because it will be considered a correction to your original answer).

Note: "Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus."

### **Final Examination or Evaluation**

The final exam will be a take home exam and will be similar in format to the midterm. The final exam might include multiple choice questions, short answer questions, and questions that ask students to perform calculations or graphing.

### **Grading Information**

#### **Exams:**

Students' answers to multiple choice questions will be graded based on accuracy (i.e., whether they are answered correctly or incorrectly).

Students' answers to short answer questions will be graded using content rubrics.

Students' answers to calculation / graphing questions will be graded based on how thoroughly they are completed and on accuracy.

Students can receive partial credit on exam questions that ask for calculations or graphing (since these questions will have multiple steps and it is possible for an answer to be partially correct but not completely correct).

#### **Activities:**

Each activity will be graded based on how thoroughly it is completed, effort, and accuracy (when appropriate).

### **Homework Assignments:**

Students' grades on weekly homework assignments will be based on how thoroughly the assignments are completed and on accuracy. Students can receive partial credit on their answers to certain homework questions if their answers are partially correct but not completely correct.

### **Quizzes:**

Each student will have one attempt at each quiz.

On each quiz, you will receive 50% credit for each question that you answer incorrectly and a small amount of extra credit for each question that you answer correctly.

Each quiz is worth 2 points of credit. Therefore, you can calculate the number of points that each individual question is worth on a certain quiz by dividing 2 by the number of questions asked on that quiz.

Each quiz is worth 0.2 points of extra credit. Therefore, you can find the number of extra credit points that each question is worth on a certain quiz by dividing 0.2 by the number of questions asked on that quiz.

### **Discussion Board Responses:**

Your answer to each discussion board question will be graded based on a rubric that is provided along with the question. These rubrics will provide information about required (or recommended) length and required content.

### **Determination of Grades**

Your final grade will be based on the number of points that you earn during the semester. The following table provides a breakdown of the 148 points that you can earn during the semester.

Homework Assignments (14 total)- 28 points  
Activities (14 total)- 28 points  
Quizzes (14 total)- 28 points  
Discussion Board Responses (15 total) – 30 points  
Exam 1 – 17 points  
Exam 2 - 17 points

### **Grading Scale:**

- A- 90 – 100%
- B – 80 – 89%
- C – 70 – 79%
- D – 60 – 69%
- F – 59% and below

### **Late Work:**

Each student will be allowed to submit up to two of each type of assignment late with only 20% of the typical late penalty (This does not apply to exams). All late work must be submitted by the deadline of the final exam. An extension of up to 5 days can be granted on any assignment if you email me to request an extension no more than 24 hours after the deadline for the assignment. To receive the extension, you will need to select another assignment worth the same number of points and give up your opportunity to turn in that assignment late for anything more than 50% of the credit. You will need to let me know which assignment you have selected in the email you send me to request the extension. If no other assignment worth the same number of points is remaining, you can select an assignment that you have already submitted. This might change the grade of the past assignment if it was submitted late, but it won't change the grade of the past assignment if it was submitted on time.

### **Classroom Protocol**

**Class Sessions:** Class sessions will include (but might not be limited to) lectures and time spent working on practice questions. Each week during Thursday's lecture, 1 to 5 practice questions will be presented within the Zoom classroom at various times during class. These questions are not worth any points. However, each exam will include reworked versions of 1 to 5 of the questions presented in class during that exam's sequence of lectures. At the end of each Thursday's lecture, an in-class extra credit opportunity will be offered that is worth up to 1% of extra credit on the upcoming exam. The weekly extra credit opportunity might involve problem solving, calculations, graphing, conceptual questions, or any other reasonable type of requirement related to the course material. Each week's extra credit opportunity will have its own submission link. Although it is expected that you will work on the extra credit opportunity during class, you will have until midnight of the class day to submit it. Each week's extra credit opportunity will be shared only through Zoom during class.

**Attendance:** Attending class is important because the material being discussed will be covered on exams, homework assignments, activities, and discussion questions.

**Arrival times:** Please come to class on time if it is at all possible. Arriving late to class is distracting to other students and will cause you to miss information discussed in class.

**Behavior:** Please be respectful toward the other students in the class and me. Please be cooperative and non-disruptive during Zoom sessions. Please don't allow your microphone to produce distracting background noise.



## **University Policies**

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>”

**San Jose State University**  
**Statistics 95: Elementary Statistics, Section 82,**  
**Fall Semester 2024,**  
**Course Schedule**

**Course Schedule: This schedule is subject to change with fair notice. I will inform students of any changes made to the schedule through a Canvas announcement.**

<b>Week</b>	<b>Class Date</b>	<b>Topics</b>	<b>Deadlines</b>
1	Thursday Aug 22	Introduction to Course  Variables and Data Values	None
2	Thursday Aug 29	Populations and Samples	Sunday Aug 25 Quiz 1 due at midnight  Tuesday Aug 27 Discussion Set 1 due at midnight  Thursday Aug 29 Homework 1 due at midnight Activity 1 due at midnight
3	Thursday Sept 5	Descriptive Statistics	Sunday Sept 1 Quiz 2 due at midnight  Tuesday Sept 3 Discussion Set 2 due at midnight  Thursday Sept 5 Homework 2 due at midnight Activity 2 due at midnight
4	Thursday Sept 12	Descriptive Statistics	Sunday Sept 8 Quiz 3 due at midnight

			<p>Tuesday Sept 10 Discussion Set 3 due at midnight</p> <p>Thursday Sept 12 Homework 3 due at midnight Activity 3 due at midnight</p>
5	Thursday Sept 19	Frequency Distribution Tables and Histograms	<p>Sunday Sept 15 Quiz 4 due at midnight</p> <p>Tuesday Sept 17 Discussion Set 4 due at midnight</p> <p>Thursday Sept 19 Homework 4 due at midnight Activity 4 due at midnight</p>
6	Thursday Sept 26	z scores	<p>Sunday Sept 22 Quiz 5 due at midnight</p> <p>Tuesday Sept 24 Discussion Set 5 due at midnight</p> <p>Thursday Sept 26 Homework 5 due at midnight Activity 5 due at midnight</p>
7	Thursday Oct 3	Probability	<p>Sunday Sept 29 Quiz 6 due at midnight</p> <p>Tuesday Oct 1 Discussion Set 6 due at midnight</p> <p>Thursday Oct 3 Homework 6 due at midnight Activity 6 due at midnight</p>
8	Thursday Oct 10	Sampling Distributions	<p>Sunday Oct 6 Quiz 7 due at midnight</p> <p>Tuesday Oct 8 Discussion Set 7 due at midnight</p>

			Thursday Oct 10 Homework 7 due at midnight Activity 7 due at midnight
9	Thursday Oct 17	Sampling Distributions	Sunday Oct 13 Quiz 8 due at midnight  Tuesday Oct 15 Discussion Set 8 due at midnight  Thursday Oct 17 <b>Exam 1 due at midnight</b> Homework 8 due at midnight Activity 8 due at midnight
10	Thursday Oct 24	Sampling Distributions  Margin of Error	Sunday Oct 20 Quiz 9 due at midnight  Tuesday Oct 22 Discussion Set 9 due at midnight  Thursday Oct 24 Homework 9 due at midnight Activity 9 due at midnight
11	Thursday Oct 31	Margin of Error  Confidence Intervals	Sunday Oct 27 Quiz 10 due at midnight  Tuesday Oct 29 Discussion Set 10 due at midnight  Thursday Oct 31 Homework 10 due at midnight Activity 10 due at midnight
12	Thursday Nov 7	Confidence Intervals  Introduction to Hypothesis Testing	Sunday Nov 3 Quiz 11 due at midnight

			<p>Tuesday Nov 5 Discussion Set 11 due at midnight</p> <p>Thursday Nov 7 Homework 11 due at midnight Activity 11 due at midnight</p>
13	Thursday Nov 14	Two Sample t test	<p>Sunday Nov 10 Quiz 12 due at midnight</p> <p>Tuesday Nov 12 Discussion Set 12 due at midnight</p> <p>Thursday Nov 14 Homework 12 due at midnight Activity 12 due at midnight</p>
14	Thursday Nov 21	<p>Two Sample t test</p> <p>Overview of Additional Tests (Paired Samples t test, One way ANOVA, Chi-square test of independence)</p>	<p>Sunday Nov 17 Quiz 13 due at midnight</p> <p>Tuesday Nov 19 Discussion Set 13 due at midnight</p> <p>Thursday Nov 21 Homework 13 due at midnight Activity 13 due at midnight</p>
15	Thursday Nov 28	No Class	<p>Sunday Nov 24 Quiz 14 due at midnight</p> <p>Tuesday Nov 26 Discussion Set 14 due at midnight</p>

16	Thursday Dec 5	Correlation	<p>Tuesday Dec 3 Discussion Set 15 due at midnight</p> <p>Thursday Dec 5 Homework 14 due at midnight Activity 14 due at midnight</p>
	Friday Dec 13		<b>Exam 2 is due at midnight</b>