San José State University
Department of Psychology
STAT 095: Elementary Statistics
Section 61, Summer 2022

Instructor Contact Information

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Course Information

Classroom	Online
Class Days/Time:	Online
Prerequisites	Math Enrollment Category M-I or M-II, or completion of a GE Area B4 course with a grade of C- or better
GE/SJSU Studies Category	GE Area B4: Mathematical Concepts

Welcome!

My name is Dr. David Schuster, and you are welcome to call me 'Dave,' 'David,' or 'Dr. Schuster.' My preferred pronouns are he/him/his. I have been teaching since 2008 and a professor at SJSU since 2013. I earned my Ph.D. in psychology from the University of Central Florida. I am looking forward to being your instructor as we explore how psychological research can increase the safety and effectiveness of human-machine systems.

Course Description

We live in a time of unprecedented access to information. Whether researching the best school, job, or relationship, the Internet has thrown open the doors to vast pools of data. Statistics are objective and systematic methods for describing and interpreting information so that you may make the most informed decisions about life.

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 is a fully online course. Required technology is described below.

Learning Outcomes and Course Goals

Program Learning Outcomes
Upon successful completion of the requirements for a major in psychology, students will be able to:

- PLO1 – Knowledge Base of Psychology – identify, describe, and communicate the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology
- PLO2 – Research Methods in Psychology – design, implement, and communicate basic research methods in psychology, including research design, data analysis, and interpretations
- PLO3 – Critical Thinking Skills in Psychology – use critical and creative thinking, skeptical inquiry, and a scientific approach to address issues related to behavior and mental processes
- PLO4 – Application of Psychology – apply psychological principles to individual, interpersonal, group, and societal issues
- PLO5 – Values in Psychology – value empirical evidence, tolerate ambiguity, act ethically, and recognize their role and responsibility as a member of society

GE and Course Content Learning Outcomes
Upon successful completion of this course, students will be able to:

- GELO1 – Use statistical methods to solve quantitative problems, including those presented in verbal form
- GELO2 – Demonstrate the ability to use mathematics and statistics to solve real-life problems
- GELO3 – Arrive at conclusions based on numerical and graphical data.

Course Goals
In terms of Mathematical Concepts (Area B-4), Stat 95 will focus on:

- CLO4 - Basic mathematical techniques for solving quantitative problems
- CLO5 - Elementary numerical computation
- CLO6 - The organization, classification, and representation of quantitative data in various forms, such as tables, graphs, rates, percentages, measures of central tendency and spread
- CLO7 - Applications of mathematics to everyday life

Stat 95 will incorporate issues of diversity in many ways (e.g., in lectures and assignments).

The learning outcomes will be assessed via written assignments and exam questions. These assessment items will involve solving verbal and symbolic quantitative problems, including those that involve real-world situations. Students will be required to arrive at conclusions using numerical and graphical data. For example, students may view a scatterplot depicting data for the amount of sleep (X) and visual memory (Y) and determine whether a relationship exists between these variables. If so, they will describe the nature and strength of this relationship (CLO 3). In addition, students will compute appropriate statistical

measures that describe the relationship (CLO 1) and then determine the practical implications of the observed relationship (CLO 2, 3).

Stat 95 requires students to write a minimum of 500 words in a manner appropriate to quantitative analysis. The writing requirement will be met via regular written assignments (described below). Writing will be assessed for grammar, clarity, conciseness, and coherence.

Required Materials

Canvas, Zoom, and E-Mail
Unless otherwise announced in class, all graded assignments will be accepted only in electronic form using the Canvas learning management system assignments page (Canvas is available at https://sjsu.instructure.com/). Supplementary course material will be made available on Canvas regularly. Communication regarding the course will be sent via the e-mail address linked to your MySJSU account or posted to Canvas. It is your responsibility to make sure you are enrolled in Canvas and receiving my e-mails. Occasional class meetings may be held in Zoom.

If you are new to Canvas, you may want to view the Canvas At-A-Glance video and intro guides.

Udacity: Online Lectures
Interactive lecture videos are provided through Udacity. You must sign up with a free Udacity account and enroll in the free course. Double-check that your course is labeled "Statistics by SJSU."

Optional Texts
There is no required textbook for this course. You may wish to consult a textbook for additional explanation of course topics. To help you do that, optional, supplemental handouts are posted on Canvas. Free, online textbooks are another option:

Collaborative Statistics available at http://cnx.org/content/col10522/latest/
OpenIntro Statistics available at http://www.openintro.org/stat/textbook.php

Spreadsheets
You will need a spreadsheet in order to do calculations for this course. It is recommended that you use Google Sheets through your SJSU Google account. The course will include a spreadsheet tutorial to help you if you are new to spreadsheets.

Grading Policy

How to be Successful in this Course
This summer course moves quickly. It is _essential_ that you _start early in the week and make time to_:

- Check Canvas and your e-mail for course announcements and changes
- Check this syllabus for due dates and upcoming assignments and plan accordingly
- Watch and participate in the assigned lecture sections and take notes as you would if you were in class
- Complete the corresponding assignments
- Ask questions on the Canvas discussion board and/or via e-mail

Determination of Grades

Grades will be available to you on Canvas throughout the course. Grades are assigned based on your final point total out of 1000 points for the course:

A plus	> 965 points
A	916 to 965 points
A minus	896 to 915 points
B plus	866 to 895 points
B	816 to 865 points
B minus	796 to 815 points
C plus	766 to 795 points
C	716 to 765 points
C minus	696 to 715 points
D plus	666 to 695 points
D	616 to 665 points
D minus	595 to 615 points
F	< 595 points

Rounding is Included in the Grading Scale

The point totals reflect rounding up to the nearest *percentage*. For example, an A- would normally require 900 points (or 90% of 1000 points). With rounding, it only requires 896 points (or 89.6% of 1000 points). Because rounding is built into the grading scale, your grade will be based on your final point total, rounded to the nearest whole *point* (so, 895.6 points is an A-, but 895.4 points is a B+). To be fair to everyone in the class, these are firm cutoffs.

Make-Up and Extension Policy

Late assignments will be accepted for credit as long as they are submitted on Canvas before 4:59pm on the last day of instruction (July 2). I strongly encourage you to complete assignments sequentially (that is, complete all of Week 1 material before submitting any Week 2 assignments) and maintain the deadlines specified in your own 30-day plan. While I aim to grade all assignments promptly, grades for assignments submitted after the Canvas due dates may be delayed. Because time in our summer course is very limited, this policy does not allow assignments to be revised and resubmitted; each assignment may only be submitted for grading one time.

Course Requirements and Assignments

Engagement Week

Engagement week activities are 5% of your final grade (50 points).

Just as the name would imply, Engagement Week is your opportunity to make sure you're ready for the compressed summer session, and if so, that you are also ready to meet the challenges, responsibilities, and expectations of this class in particular. The week will involve activities designed to get you ready to succeed in our class.

- Set up your Udacity account and access the [lecture content](#).
- Get on Canvas – Getting logged into and familiar with Canvas is key to your success. Activate your Canvas account and view our course site. Open the "Modules" page to see all the materials for each week of the course. Download everything in the first module (labeled "Start Here"), and keep these materials handy throughout the course.
- Your personalized 30-day schedule – This activity guides you in the preparation of your individualized class schedule. Instructions can be found on the "Modules" page on Canvas.

Udacity Problem Sets
Udacity problem sets are 15% of your final grade (150 points total).

Five problem set assignments will be assigned worth 30 points each, for a total of 150 points. Each lesson on Udacity is followed by a problem set. These problem sets are meant to help you self-assess your knowledge of the concepts covered in each lesson (mapping onto learning outcomes 1 through 5). All problem sets are multiple-choice or short answer. The problem set will tell you if your answers are correct. For each assigned problem set, attempt every item at least once. *Type out your answers to each item along with any work needed to solve the problem*. Mark all items you were able to answer correctly on your first attempt with a [*]. Finally, mark all items for which you could not get a satisfactory answer or are confused about the solution with a [?]. This is graded for completion, (it is okay to make mistakes!) and you must attempt every item without leaving any blank. Substantially incomplete or blatantly effortless work will receive a score of zero. Submitting answers duplicated from others without attempting the problem yourself is academic dishonesty.

Writing About Statistics
The writing assignments are 30% of your final grade (300 points total).

Five writing assignments are worth 60 points each, for a total of 300 points. As part of the writing assignments, you will write a response to a prompt about using math and statistics to solve real life problems (GLEO2) and arrive at conclusions based on numerical and graphical data (GLEO3). Assignments will be graded for the quality of argument and for grammar and mechanics. All writing must be original and written solely by you. Each writing assignments is designed to be answered in a short paragraph. You will write over 500 words across these reflection assignments, which will satisfy the writing requirement.

Quizzes
Quizzes are 40% of your final grade (400 points total).

Five quizzes are worth 100 points each, but the <u>lowest one is dropped</u>. This leaves 4 quizzes worth 100 points each, for a total of 400 points. You may use support materials (your textbook, web sites, materials on Canvas, and your notes) when you take your quiz, but <u>you must take your quiz alone without the help of any other live individual</u>. You may not communicate with anyone except the instructor during a quiz. Doing so is academic dishonesty. For example, you may refer to the web page of a stats textbook during a quiz, but you may not send e-mails to someone while you take a quiz. Do not discuss quiz answers with anyone except your instructor.

In summary: books and notes are okay for quizzes. Live help is not okay for quizzes. Keep quiz answers to yourself. Please let me know if you have questions about what is allowed during quizzes or exams.

Later concepts in this course build on earlier ones, so while quizzes will focus on the current week's material, they are cumulative in that items may require knowledge from previous parts of the course.

Reflection Assignments
The reflection assignments are 10% of your final grade (100 points total).

Five reflection assignments are worth 20 points each, for a total of 100 points. As part of the reflection assignments, you'll report the amount of time spent on this week on course activities and reflect on your mastery. These may include required posts to our class discussions. This is graded for completion, and there is no partial credit; incomplete or blatantly effortless work will receive a score of zero. Reflection assignments are due as indicated in Canvas.

Final Examination or Evaluation
The last quiz, as described above, is a cumulative final evaluation. The last quiz focuses primarily on material covered in the last week of the course and is worth the same number of points as any other quiz.

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/

You must obtain the instructor's permission to make any audio or video recordings in this class.

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.

Academic Integrity
Please don't cheat. I will not tolerate academic dishonesty in my courses. You can expect me to follow all University policies and protocols regarding the handling of suspected academic dishonesty. Penalties may include expulsion from SJSU. Software and statistical analysis may be used to detect academic dishonesty.

Classroom Environment
It is my goal to foster a learning environment in which diversity is recognized and embraced, and every person is treated with dignity, respect, and justice. I hope that your academic experience in this course and at San José State University will provide the opportunity to gain knowledge and experiences necessary to thrive in a diverse, global environment. By participating in this course, we agree to show mutual respect, which means that we recognize and value that we bring different skills, experiences, and qualities to our course, and we act with regard for how our behavior affects others.

Course Schedule

The course schedule is tentative and subject to change; modifications will be posted to Canvas.

Class	Week	Topics, Assignments, Deadlines See Canvas Modules for all course content. Assignments are due on Canvas by 4:59pm on the date indicated.
1	Wed., June 1 to **Sun**., June 5	Intro to research and measurement Visualizing data Central tendency Assignments due **Mon**., June 6: Engagement week, writing assignment, problem sets, quiz, reflection assignment
2	Mon., June 6 to Fri., June 10	Variability Standardizing Normal distributions Assignments due **Friday**, June 10: Writing assignment, problem sets, quiz, reflection assignment
3	Mon., June 13 to Fri., June 17	Sampling distributions Estimation Hypothesis testing Assignments due Friday, June 17: Writing assignment, problem sets, quiz, reflection assignment
4	Mon., June 20 to Fri., June 24	T-Tests (two lessons) Assignments due Friday, June 24: Writing assignment, problem sets, quiz, reflection assignment
5	Mon., June 27 to Fri., July 1	One-way ANOVA (two lessons) Correlation Assignments due Friday, July 1: Writing assignment, problem sets, quiz, reflection assignment