

STAT 95: Elementary Statistics Section 03

San Jose State University Fall 2024

Department of Psychology

Instructor: Ginevra Scherini, MS

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Lecture Hours: Monday Wednesday 3:00 pm – 4:15 pm

Lecture Location: DMH 355

Office Locations: Dudley Moorhead Hall (DMH) 232 and Business Tower (BT) 660

Office Hours: Monday 12:00 – 1:00 pm in DMH 232 and Tuesday 1:30 – 2:30 pm in BT 660

Course Format

This course will be taught in-person live (synchronous) and will have assignments and content accessed through Canvas. You are responsible for regularly checking Canvas for any updates regarding assignments, materials, and exams.

Course Description

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.

Prerequisite

Math Enrollment Category M-I or M-II, or completion of a GE Area B4 course with a grade of C- or better.

Notes: 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.

Please note that the ELM is no longer a prerequisite.

Learning Outcomes

GE Learning Outcomes

At the conclusion of the class, the student will be able to:

1. 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.
2. Learning Objective 2 (GELO2): Mathematical concepts courses should prepare the student to demonstrate the ability to use mathematics to solve real life problems.
3. Learning Objective 3 (GELO3): Mathematical concepts courses should prepare the student to arrive at conclusions based on numerical and graphical data.
4. Learning Objective 4 (Specific to Area B4): Focus on basic mathematical techniques for solving quantitative problems and elementary numerical calculation.
5. 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).
6. Learning Objective 6 (Specific to Area B4): Focus on applications of mathematics to everyday life.
7. Learning Objective 7 (Specific to Area B4): Focus on applications of mathematical concepts to statistical inference.

Department of Psychology Program Learning Outcomes

1. 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.
2. 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.
3. 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.
4. Application of Psychology: Students will be able to apply psychological principles to individual, interpersonal, group, and societal issues.
5. Values in Psychology: Students will value empirical evidence, tolerate ambiguity, act ethically, and recognize their role and responsibility as a member of society.

Course Materials

Textbook

Tokunaga, Howard T. (2018). Fundamental Statistics for the Social and Behavioral Sciences, 2nd Edition
ISBN-10: 1506377483
ISBN-13: 978-1506377483

Additional Resource

Illowsky, B., & Dean, S. (2020). Statistics. OpenStax.
<https://openstax.org/books/statistics/pages/1-introduction>

Canvas

Check Canvas frequently for grades, materials, and assignments.

Qualtrics

We will be using the online surveying software Qualtrics for assignments throughout the course. You have access to the program for free by logging in with your SJSU account single sign-on credentials through qualtrics.sjsu.com

Course Requirements

Classes will be interactive, with both the instructor and students sharing in the process. Students are encouraged to read assigned materials **prior to the class date** and be prepared for discussions and exercises. It is to your advantage to stay current with readings and assignments. During class, we will have lecture time, experiential exercises, writing assignments, group projects, and class discussion.

Writing Requirement

Part of the Stat 95 course requirement is for students to write 500 words on data analysis. We will be writing interpretations of statistical analyses and explaining their significance in homework assignments, midterm exams, and the final exam.

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. Other course structures will have equivalent workload expectations as described in the syllabus.

Classroom Etiquette:

- We are expected to treat each other with respect throughout the semester.
- When in doubt, simply treat others as you would wish to be treated.
- Computers and phones are allowed for note taking and accessing materials online during class, but should be put away during exams.

Examinations (57% of grade)

There will be a total of four examinations. Your score on the examination portion of the course will be the sum of your scores on three of the four exams - your lowest score will be dropped. If you do not take one of the four exams, that exam will be dropped. NOTE: There will be NO make-up exams without instructor consent and arrangement before the scheduled time of the exam.

The exams will be based on lecture, textbook, and homework, and will consist of multiple choice, short essay, and computational questions. Please bring pencils, a calculator (not your phone calculator) on the day of the exam.

Final examination (23% of grade)

The final exam will be similar in format to the other exams, focusing on material after the fourth exam. There will, however, be a cumulative component that addresses the critical concepts and issues covered during the semester.

Assignments (20% of grade)

There will be 9 homework assignments throughout the semester. The purpose of the homework is to build on and confirm your understanding of the material covered in lecture and textbook and provide practice for the exams. We will learn how to use software to conduct statistical analyses using Google Sheets and the survey platform Qualtrics. Some homework assignments will involve conducting analyses using these tools and interpreting the results.

Grading Policy

I will post grades on Canvas throughout the semester so that you can keep track of your progress. If you need guidance on your grades in the class, please connect with me after class, during office hours, or via email. Extra credit opportunities will be available throughout the semester.

Your course grade will be based upon a weighted combination of scores on the following components:

Assignments	% of grade
Homework	20%
Exams	57%
Final Exam	23%

Percentage	Letter Grade
90% to 100%	A
86% to 89%	B+
80% to 85%	B
76% to 79%	C+
70% to 75%	C
60% to 69%	D
below 60%	F

Excused and Late Assignment Policy

If you have an excused absence (for medical reasons or otherwise unforeseen emergencies) please let me know as soon as possible and I will work with you to arrange a solution or makeup assignment. There will otherwise be no make-ups for any missed in-class activities, quizzes, or exams. You may turn in homework late for partial credit.

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 at <http://www.sjsu.edu/gup/syllabusinfo/>.

Student Resources

Psychology Department Librarian: Christa Bailey christa.bailey@sjsu.edu 408-808-2422

The SJSU library has a librarian who specializes in psychology and other social sciences. This librarian can serve as a very valuable resource for helping you develop research ideas and locating appropriate research materials. The library also has an abundance of resources for doing psychology research: <https://libguides.sjsu.edu/psychology>

Student Technology Resources

- MLK Library Online Resources: <https://library.sjsu.edu/>
- STTC's Technology Resource Guide: <https://libguides.sjsu.edu/sttc>
- eCampus Student Tech Resources: <https://www.sjsu.edu/learnanywhere/equipment/index.php>

ACCESS Success Center

The Academic Counseling Center for Excellence in Social Sciences (ACCESS) Success Center provides general education advising for undergraduate students majoring or intending to major in any of the departments in The College of Social Sciences. Find out more here: <https://www.sjsu.edu/access/>

SJSU Peer Connections

Peer Connections offers free tutoring, instruction assistance, and strengths coaching for SJSU students. Find out more on their website: <https://www.sjsu.edu/peerconnections/index.php>

SJSU Writing Center

The SJSU Writing Center offers a variety of free resources to help students become better writers. Check out their online tutoring and live tutor chat service here: <https://www.sjsu.edu/writingcenter/>

SJSU Counseling and Psychological Services

SJSU Counseling and Psychological Services provides personal and clinical counseling as well as clinical case management, workshops, and groups for all SJSU students. Find out more at: <https://www.sjsu.edu/counseling/about/what-we-do.php>

Course Schedule

Assignments are subject to change. Any changes will be posted and updated on Canvas, please check Canvas regularly for announcements and updated deadlines. The chapters to read under 'Assignments' cover topics that will be in that week's lecture.

Date	Topic:	Assignments:
Week 1 Wednesday Aug 21	Syllabus, Course Intro	
Week 2 Monday Aug 26	Research Process	Chapter 1
Week 2 Wednesday Aug 28	Measures of Central Tendency	Chapter 3 HW 1 due
Week 3 Monday Sep 2	No Class - Labor Day	
Week 3 Wednesday Sep 4	Measures of Variability	Chapter 4
Week 4 Monday Sep 9	Intro to Google Sheets and Qualtrics	HW 2 due
Week 4 Wednesday Sep 11	Exam Review	
Week 5 Monday Sep 16	Exam 1	
Week 5 Wednesday Sep 18	Normal Distributions (continued)	Chapter 5 HW 3 due
Week 6 Monday Sep 23	Normal Distributions (continued)	HW 4 due
Week 6 Wednesday Sep 25	Probability and Hypothesis Testing	Chapter 6
Week 7 Monday Sep 30	Probability and Hypothesis Testing (continued)	
Week 7 Wednesday Oct 2	Probability and Hypothesis Testing (continued)	
Week 8 Monday Oct 7	Exam 2	HW 5 due
Week 8 Wednesday Oct 9	Testing a Single Mean	Chapter 7
Week 9 Monday Oct 14	Testing a Single Mean (continued)	
Week 9 Wednesday Oct 16	Testing the Difference Between 2 Means	Chapter 9 HW 5 due
Week 10 Monday Oct 21	Testing the Difference Between 2 Means (continued)	

Week 10 Wednesday Oct 23	Exam 3	HW 6 due
Week 11 Monday Oct 28	Matched Pairs T-test	
Week 11 Wednesday Oct 30	Matched Pairs T-test (continued)	
Week 12 Monday Nov 4	Errors in Hypothesis Testing / Statistical Power	Chapter 10
Week 12 Wednesday Nov 6	One-way Analysis of Variance (ANOVA)	Chapter 11
Week 13 Monday Nov 11	No Class - Veteran's Day	
Week 13 Wednesday Nov 13	Two-way ANOVA	Chapter 12
Week 14 Monday Nov 18	Two-way ANOVA (continued)	
Week 14 Wednesday Nov 20	ANOVA Qualtrics group activity	
Week 15 Monday Nov 25	Correlation and Regression	Chapter 13 and 14 HW 7 due
Week 15 Wednesday Nov 27	No Class	
Week 16 Monday Dec 2	Correlation and Regression on Google Sheets	HW 8 due
Week 16 Wednesday Dec 4	Chi Square	
Week 17 Monday Dec 9	Final Review	
Final Exam: Tuesday, December 17 12:15-2:30 PM in DMH 355		