

Elementary Statistics Section 02

STAT 95

Fall 2024 3 Unit(s) 08/21/2024 to 12/09/2024 Modified 08/22/2024

Contact Information

Class Days/Times:

Tuesdays and Thursdays 9am-10:15am at Dudley Moorhead Hall (DMH) 356

Professor: Juan Peña Ph.D.

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Office: DMH 321

Phone: 408-924-5947

Office Hours

Wednesday, 9:30 AM to 11:30 AM, DMH 321

or by appointment

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.

GE Area(s): B4. Mathematics/Quantitative Reasoning

Note(s): A grade of "C-" (1.7) or better is required to satisfy GE Area B4. 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.

Prerequisite(s): Math Enrollment Category M-I or M-II, or for Categories III or IV, ½ completion of a GE Area B4 course with a grade of "C-" or better.

Letter Graded

* Classroom Protocols

It is expected that students will come to class prepared and ready to ask questions. This means that students:

1. Will have read any assigned material and finished quizzes before class starts.
2. Will silence mobile devices and take phone calls outside of the classroom
3. Will have access to a calculator/mobile device ready for class
4. Participate in in-class activities and discussions

Email etiquette and preferred name

If you email me, please place the name and section (e.g., STAT95-02, STAT95-06) of the course along with **your** last name in the Subject line. For example, if I was a student, I'd place STAT95-02 - Pena in the Subject line.

Although I'll answer by my first name, I have a slight preference for any of the following:

Professor Peña, Mr. Peña, Dr. Peña, Dr. Juan, Mr. Juan

Please practice using this in email or any in-person communication. If you aren't sure, ask.

Policy on Artificial Intelligence (AI)

Generative artificial intelligence tools—software that creates new text, images, computer code, audio, video, and other content—have become widely available. Well-known examples include ChatGPT for text and DALL•E for images. This policy governs all such tools, including those released during our semester together. You may use generative AI tools on assignments in this course, within the following limitations. **If you do use generative AI tools on writing assignments in this class, you must properly document and credit the tools themselves. Cite the tool you used, following the pattern for computer software given in the specified style guide. Additionally, please include a brief description of a few sentences (e.g., what did you ask, what did you do to check for accuracy of the information, what modifications did you make, how did it help you understand the material or assignments) on how you used the tool. Please include this information in an appendix.**

If you choose to use generative AI tools, please remember that they are typically trained on limited datasets that may be out of date. Additionally, generative AI datasets are trained on pre-existing material, including copyrighted material; therefore, relying on a generative AI tool may result in plagiarism or copyright violations. Finally, keep in mind that the goal of generative AI tools is to produce content that seems to have been produced by a human, not to produce accurate or reliable content; therefore, relying on a generative AI tool may result in your submission of inaccurate content. It is your responsibility—not the tool's—to assure the quality, integrity, and accuracy of work you submit in any college course.

As specified elsewhere in the syllabus, this course may require electronic submission of essays, papers, or other written projects through the originality assessment service Turnitin. Turnitin will also attempt to detect AI-generated text. If you use generative AI tools to complete assignments in this course, in ways that I have not explicitly authorized, I will apply the Student Conduct Code (California Code 41301 Standards for Student Conduct) as appropriate to your specific case. In addition, you must be wary of unintentional plagiarism or fabrication of data. Depending on the specific circumstances, a first offense academic integrity violation related to misuse of generative AI could lead to a sanction for a violation of the Student Conduct Code. Please act with integrity, for the sake of both your personal character and your academic record.

This statement was generated with the help of the Generative AI syllabus statement tool (Seaver college)

Student Resources

For a list of student resources on and off campus, see the following link, which was compiled by one of my colleagues

<https://docs.google.com/document/d/1EBZmKaiH4KhjyhZ1AAr2IMbAoRnJx701Y6hFpmp574M/edit?usp=sharing>
(<https://docs.google.com/document/d/1EBZmKaiH4KhjyhZ1AAr2IMbAoRnJx701Y6hFpmp574M/edit?usp=sharing>)

Accommodations for Students with Disabilities

Presidential Directive 97-03 ([under Accommodation for Students with Disabilities \(https://www.sjsu.edu/curriculum/courses/syllabus-info.php\)](https://www.sjsu.edu/curriculum/courses/syllabus-info.php)) requires that students with disabilities requesting accommodations register with the Accessible Education Center (AEC) to establish a record of their disability. AEC will contact the instructor with further details, if needed. If special arrangements are needed in cases of emergency or if the building must be evacuated, please make arrangements with the instructor.

Consent for Recording of Class and Public Sharing

The [Recording & Sharing Class Material Policy S12-7.pdf](#) requires students to obtain instructor's permission to record the course. The following criteria define expectations relating to recording a course.

- Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without approval. You may not publicly share or upload instructor generated material such as exam questions, lecture notes, or homework solutions without instructor consent. This prohibition includes sharing information with third parties and on websites.
- You must obtain the instructor's permission to make audio or video recordings in class. Such permission allows the recordings to be used for your private, study purposes only. The recordings

are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.

- Permission from the instructor, whether in writing or orally, may extend to either a single class or the entire semester.
- In classes where active participation of students or guests may be on the recording, permission of those students or guests must be obtained as well.

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 Learning Outcomes (CLOs)

GE Area B4: Mathematics/Quantitative Reasoning

Area B4 courses develop students' abilities to reason quantitatively, practice computational skills, and explain and apply mathematical and/or quantitative reasoning concepts to solve problems at the college level. Completion of Area B4 with a grade of C- or better is a CSU graduation requirement.

GE Area B4 Learning Outcomes

Upon successful completion of an Area B4 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 Practice: Students will write a minimum of 500 words in a language and style appropriate to the discipline.

Course Materials

Here is the textbook:

Salkind, Neil J & Frey, Bruce, B. (2019). Statistics for People Who (Think They) Hate Statistics (7th Edition). Los Angeles, CA: SAGE. ISBN: 978-1-4833-7408-6.

See below also for course materials

Statistics for People Who (Think They) Hate Statistics

Author: Salkind, Neil J & Frey, Bruce, B.

Publisher: SAGE

Edition: 7

ISBN: 978-1-4833-7408-6

Availability: Campus bookstore, online

Price: 40-50

Other Technology Requirements/Equipment/Material

Here is a list of equipment/software you will need in order to be successful in the course.

1. Scientific calculator (must have square root & exponent buttons). Most smartphones will suffice.
2. Computer, Internet, and SJSU library access. If possible, you can bring laptops to class.
 - a) You can borrow a laptop from the SJSU Library: <https://library.sjsu.edu/student-computing-services/student-computing-services>b) These computers will have SPSS installed on them as well.
3. SPSS
 - a) This statistics program is available via E-Campus (<https://www.sjsu.edu/ecampus/software-tools/research-tools/spss.php>) and can be downloaded to your computer. Otherwise, SPSS is installed on most computer labs on campus. For more information, please visit the IT Department website (<https://www.sjsu.edu/it/>) or call their help desk (408-924-1530).
4. Microsoft Word and Excel
 - a) SJSU students have FREE access to Microsoft Office 365 (which includes Word & PowerPoint & MS Excel): see SJSU IT Services Software Instructions (<https://www.sjsu.edu/it/services/collaboration/software/instructions.php>).
5. Respondus LockDown Browser
 - a) All students will be using Respondus LockDown Browser for all exams.
 - a. Explanation Video: <https://www.youtube.com/watch?v=KDGE2AjhZ5I>

Grading Information

A student's grade will be based on the total amount of points (1000 possible points) they receive from exams (500 possible points), statistical analysis write-ups, statistical analysis submissions (data, syntax, output), in-class activities,, and check-for-understanding quizzes (total 500)

Below is a breakdown of the amount of points needed to earn the specified letter grade. Grading is based on points. Not percentage. Thus, a student who earns 899 points will earn a B+ and they will have an 89.90% for the course.

Minimum Grading: For students that COMPLETE assignments, quizzes, or exams ON TIME but score less than 50%, their scores will be changed to be at least 50%. For example, a student that scores 3/10 on a quiz but completes each item (does not skip questions) will obtain at least 5/10.

(NOTE : Individual exam and assignment totals may change over the course of the semester causing a change in the available total point total.) All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades. See University Policy F13-1 (<http://www.sjsu.edu/senate/docs/F13-1.pdf>) for more details

Extra credit - Throughout the semester, there may be opportunities to obtain extra credit. I will make an announcement and post this information under Assignments with details.

There are 15 quizzes throughout the semester. They each have 10 questions, are open-book, open-note, and are untimed. They are due before class time on the date indicated on the course schedule. You need to complete a minimum of 10 quizzes. However, if you take more quizzes, then the 10 highest scoring quizzes will be applied to your final grade. If you score more than 100 points in quizzes, left over quiz scores can be applied to your final grade.

There will be five exams, worth 100 points each. All exams will include multiple-choice questions that cover material presented in the book AND in-class and will be administered on Canvas. They are open-note and open book exams, and you will have 1 hour and 15 minutes (1 class period) to complete them once you start and they must be submitted at 11:59pm of the day they are due (Friday at 11:59pm). If there are poor test questions (questions where more than 66% of students miss) you will automatically get credit for that question.

If you have a legitimate reason for missing the exam, a makeup exam may be permitted. However, you will need to contact me as soon as you can before the exam is due to alert me that you will miss the exam and let me know your legitimate reason for missing the exam. You will also need to present written documentation verifying the legitimate reason, so that we can schedule the makeup exam as quickly as possible. All make-up exams must be completed before the next exam (e.g., Exam 3 make-up before Exam 4). There are no make-ups for the final exam.

If you are unable to contact Dr. Peña before the due date, complete the exam ASAP and contact Dr. Peña at least 24 hours after the exam was due. You will still need to provide a legitimate reason for a late exam and/or a meeting with Dr. Peña. However, you will be able to obtain at least 50% on your exam. Any attempt to complete the exam after the 24 hour grace period will be handled on a case by case basis.

Attendance

Attendance is the responsibility of the student. However, attendance itself may not be used as a criterion for grading. Students are expected to attend all meetings for their courses, as they are responsible for all material covered, and active participation is frequently essential to ensure maximum benefit to all class members. Participation may be used as a criterion for grading when the parameters and their evaluation are clearly defined in the course syllabus and the percentage of the overall grade is stated. The full policy language can be found under [Attendance and Participation \(https://www.sjsu.edu/curriculum/courses/syllabus-info.php\)](https://www.sjsu.edu/curriculum/courses/syllabus-info.php).

Breakdown

Assignments	Points	Percentage of Total Grade
<i>In-Class Activities</i>	10 X 10 = 100	10%
<i>SPSS Write-ups</i>	5 X 40 = 200	20%
<i>SPSS Output, Syntax, and Data</i>	5 X 20 = 100	10%
<i>Check for Understanding Quizzes</i>	10 X 10 = 100	10%
<i>Exams</i>	5 X 100 = 500	50%
<u>Totals</u>	1000	100%

Grading Scale

Grade	Points
A+	960 to 1000
A	930 to 959
A -	900 to 929
B+	860 to 899
B	830 to 859
B-	800 to 829
C+	760 to 799
C	730 to 759
C-	700 to 729
D+	660 to 699
D	630 to 659

D-	600 to 629
F	Below 599

University Policies

Per [University Policy 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) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

Week	Date	Topics and readings	Assignments due
1	8/22/24	Course Introduction	
2	8/27/24	Statistics & Research Concepts Salkind, pp 1-15; Ch. 1	Quiz #1 Statistics & Research Concepts (Turn it in by 9/3)
	8/29/24	Introduction to SPSS & Excel	
3	9/3/24	Central Tendency, Variables, & Measurements Salkind, pp 21-36; Ch. 2	Quiz #2: Central Tendency, Variables & Measurements
	9/5/24	Variability Salkind, pp 41-53; Ch. 3	Quiz #3 Variability
4	9/10/24	Exam #1 Review: Statistics & Research Concepts, Variables, and Measurement, Central Tendency and Variability	
	9/12/24	SPSS Workday	SPSS Assignment 1: Write-up Data, output, syntax

5	9/17/24	Graphing descriptive data Salkind, pp. 56-74, Ch. 4	Quiz #4 Graphing Descriptive Data
	9/19/24	Correlation Salkind, pp. 76-92, Ch. 5	Quiz #5 Correlation Exam 1 due Friday 9/20 at 11:59pm
6	9/24/24	Exam 2 Review: Graphing descriptive data and correlations	
	9/26/24	Null hypothesis testing Salkind, pp. 127-138, Ch.7	Quiz #6 Null hypothesis testing
7	10/1/24	The normal distribution & Z-scores Salkind, pp. 140-161 Ch. 8	Quiz #7 Normal distribution
	10/3/24	Statistical significance Salkind, pp. 167-184, Ch. 9	Quiz #8 Statistical significance Exam 2 due Friday 10/4/24 at 11:59pm
8	10/8/24	One sample Z-test Salkind, pp. 186-197, Ch. 10	Quiz #9 One sample Z-test Mid semester feedback form open!
	10/10/24	Testing relationships Salkind, pp. 262-272, Ch. 15 SPSS assignment #2	Quiz #10 Testing relationships
9	10/15/24	Exam 3 review normal distribution, Z- scores, intro to inferential statistics, one-sample Z-test	

	10/17/24	<p>No-in person class</p> <p>SPSS workday</p>	<p>SPSS assignment 2</p> <p>Data, Output, Syntax</p> <p>SPSS Assignment 2:</p> <p>Write-up</p> <p>Due at the end of the day</p>
10	10/22/24	<p>Independent samples t-test</p> <p>Salkind, p. 199-212, Ch 11</p> <p>SPSS assignment #3 video</p>	<p>Quiz #11 Independence sample t-test</p>
	10/24/24	<p>SPSS workday</p>	<p>SPSS assignment 3</p> <p>Data, Output, Syntax</p> <p>Write up</p> <p>Exam 3 due 10/25 at 11:59pm</p>
11	10/29/24	<p>Repeated measures t-Test</p> <p>Salkind, pp. 215-226; Ch 12</p>	<p>Quiz #12 Repeated measures t-Test</p>
	10/31/24	<p>Analysis of Variance (ANOVA)</p> <p>Salkind, pp. 229-245; Ch 13</p> <p>SPSS Assignment #4 video</p>	<p>Quiz #13 Analysis of Variance</p>
12	11/5/24	<p>Exam 4 review</p> <p>Independent Samples & Repeated Measures t-Tests and ANOVA</p>	
	11/7/24	<p>SPSS workday</p>	<p>SPSS assignment 4:</p> <p>Data, output, syntax</p> <p>Write-up</p>

13	11/12/24	Nonparametric tests Chi-square Salkind, pp 295-309; Ch 17 SPSS assignment #5 video	Quiz #14 Non-parametric Tests
	11/14/24	Special Topic	Exam #4 due on 11/15/24 at 11:59pm
14	11/19/24	SPSS Workday	SPSS assignment 5: Data, output, syntax Write-up
	11/21/24	Factorial ANOVA Salkind, pp. 247-260; Ch 14	Quiz #15 Factorial ANOVA
15	11/26/24	Factorial ANOVA on SPSS Review for Exam #5	
	11/28/24	NO CLASS - THANKSGIVING BREAK	
16	12/3/24	Review for Exam 5	
	12/5/24	Exam 5: Factorial ANOVA & Nonparametric tests	Exam 5 due on 12/6/24 at 11:59pm
Final EXAM	Monday, 12/16/24	Optional COMPREHENSIVE EXAM	Exam opens at 7:15am on Canvas and you will have 2 hours and 15 minutes Please submit your exam by 5pm