San José State University
Department of Psychology
Stat 095, Elementary Statistics, Section 2, Summer 2011

Instructor: Sean Laraway, PhD
Office Location: DMH 311
Telephone: (408) 924-5679 (email me; do not call)
Email: sean.laraway@sjsu.edu
Office Hours: T & Th, 2:30 - 3:00 p.m.
Class Days/Time: T & Th, 3:00 - 4:45 p.m.
Classroom: CLARK 117
Prerequisites: Satisfaction of ELM requirements; 2 years of H. S. Algebra.
GE/SJSU Studies Category: B4 (Mathematical Concepts) and CAN STAT 2

Course Description
This course will cover organization and classification of data, graphic representation, measures of central tendency and variability, percentiles, normal curve, standard scores, correlation, introduction to statistical inference, t tests, one-way ANOVA, and the use of computers for statistical calculations. The major goal is to enable the student to use numerical and graphical data in personal and professional judgments and in coping with public issues. We also will consider other topics, including experimental and non-experimental research designs, causation, effect size and strength of association measures, and confidence intervals.

GE Requirements and Content
1. 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 quizzes, in-class activities, homework, and exam questions. Writing will be assessed for grammar, clarity, conciseness, and coherence.
2. Stat 95 will incorporate issues of diversity in many ways (e.g., in lectures, assignments)
3. In terms of Mathematical Concepts (GE Area B4), Stat 95 will focus on:
   a. Basic mathematical techniques for solving quantitative problems
   b. Elementary numerical computation
c. The organization, classification, and representation of quantitative data in various forms, such as tables, graphs, rates, percentages, measures of central tendency and spread

d. Applications of mathematics to everyday life

e. Applications of mathematical concepts in statistical inference

GE/SJSU Studies Learning Outcomes (LO)

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

1. To use statistical methods to solve quantitative problems, including those presented in verbal form
2. To demonstrate the ability to use mathematics and statistics to solve real-life problems
3. To arrive at conclusions based on numerical and graphical data.

Required Texts/Readings

Textbook


For additional information, see these free online texts

http://davidmlane.com/hyperstat/index.html

http://www.statsoft.com/textbook/

Other equipment / material requirements

1. Scientific calculator (must have square root and exponent buttons)
2. Computer, printer, internet and library access
3. Scantron (882) forms

Classroom Protocol

Classes

Classes will comprise lectures, in-class activities, question-and-answer periods, and films (if time allows). Attendance is expected and is critical for success in this course. If you miss a class, you are responsible for getting the information covered. It is vital that you complete all scheduled readings and assignments before each class. Always bring your text and calculator to class. Do not talk, read, text message, or eat during class. Please arrive to class on time and stay the entire time.

Electronics Policy

Do not use cell phones, foreign language dictionaries, laptop computers, headphones, or any other electronic device during Exams. Turn off all pagers, cell phones, headphones, etc. before class. Using cell phones and other communication methods
(e.g., text messaging) during class is not allowed. Do not use electronic devices to check email, visit websites, play games, or send instant messages. Doing so is a distraction to other students and the instructor and will result in expulsion from class.

**Dropping and Adding**

Students are responsible for understanding the policies and procedures about add/drops, academic renewal, etc. Information on add/drops are available at [http://info.sjsu.edu/web-dbgen/narr/soc-fall/rec-324.html](http://info.sjsu.edu/web-dbgen/narr/soc-fall/rec-324.html). Information about late drop is available at [http://www.sjsu.edu/sac/advising/latedrops/policy/](http://www.sjsu.edu/sac/advising/latedrops/policy/). Students should be aware of the current deadlines and penalties for adding and dropping classes.

**Assignments and Grading Policy**

**Exams**

You will have three exams. Exams will comprise multiple-choice, short answer, and computation questions. Please bring a Scantron form, pencils, and a calculator to each exam. You will be allowed to use your notes, texts, and a calculator during exams.

**Participation**

You will be graded on your participation in and out of class. You must be present to receive credit for in-class assignments, unless you make other arrangements with me. Some assignments will be completed outside of class (i.e., homework)

**Make-up Exams**

Make-up exams will only be given if you contact me prior to the exam in question.

**Data Collection Project**

You will complete a research project that will require you and your research team to design a study, collect data, analyze the data using computer software (e.g., Excel, online calculators), and write a concise and correct summary of the results. For each project, you and your team will submit an original, written research report of your project. These reports must be at least 500 words in length (typed, double-spaced, 12-point font, 1" margins) and should include at least one graph (software generated). Projects must use correct grammar, punctuation, and statistical style (as described in the *Publication Manual of the American Psychological Association*, 6th ed.; we will review this in class). Teams may consist of 2-3 students. To accommodate diversity of student interests and backgrounds, teams will choose their own specific research topics. *Note that topics must be approved before data collection begins to ensure successful data collection strategies.*
Assessment of student learning outcomes

The learning objectives will be assessed via in-class 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 caffeine consumed (X) and the quality of sleep (Y) and will determine whether a relationship exists between these variables, and, if so, the nature and strength of this relationship (LO 3). In addition, students will compute appropriate statistical measures that describe the relationship (LO 1) and then determine the practical implications of the observed relationship (LO 2, 3).

Grading

Your grade will result from the total number of points that you earn during the semester. Points will be assigned as follows:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>How Many?</th>
<th>Points per assignment</th>
<th>Total Points</th>
<th>Percent of Final Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation</td>
<td>~ 10</td>
<td>~ 1</td>
<td>10</td>
<td>10%</td>
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<tr>
<td>Project</td>
<td>1</td>
<td>15</td>
<td>15</td>
<td>15%</td>
</tr>
<tr>
<td>Exams</td>
<td>3</td>
<td>25</td>
<td>75</td>
<td>75%</td>
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<td>TOTAL</td>
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<td>100</td>
<td>100%</td>
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Grading scale:

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<tr>
<th>Points earned</th>
<th>Percent</th>
<th>Letter Grade</th>
<th>Points earned</th>
<th>Percent</th>
<th>Letter Grade</th>
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<tbody>
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<td>≥ 98</td>
<td>≥ 98</td>
<td>A+</td>
<td>73</td>
<td>73</td>
<td>C</td>
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<td>93</td>
<td>93</td>
<td>A</td>
<td>70</td>
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<td>C-</td>
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<td>90</td>
<td>A-</td>
<td>68</td>
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<td>D+</td>
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<td>88</td>
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<td>B+</td>
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<td>60</td>
<td>60</td>
<td>D-</td>
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<td>80</td>
<td>80</td>
<td>B-</td>
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<td>&lt; 60</td>
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<tr>
<td>78</td>
<td>78</td>
<td>C+</td>
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University Policies

Academic integrity

Students should read and understand the University's Academic Integrity policy, available at [http://www.sjsu.edu/senate/S04-12.pdf](http://www.sjsu.edu/senate/S04-12.pdf). Your own commitment to learning, as evidenced by your enrollment at San Jose State University and the University's integrity policy, require you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The website for the Office of Student Conduct and Ethical Development is available at [http://www.sa.sjsu.edu/judicial_affairs/index.html](http://www.sa.sjsu.edu/judicial_affairs/index.html).

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person’s
ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include in your assignment any material you have submitted, or plan to submit for another class, please note that SJSU’s Academic Policy F06-1 requires approval of instructors.

**Campus Policy in Compliance with the American Disabilities Act**

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with the DRC (Disability Resource Center) to establish a record of their disability.

**Student Technology Resources**

Computer labs for student use are available in the Academic Success Center located on the 1st floor of Clark Hall and on the 2nd floor of the Student Union. Computers are also available in the Martin Luther King Library.

**Tips to help you succeed in Stat 95**

1. Attend all classes and take good notes; Type and compile your notes soon after class
2. Start studying now for each exam; form a study group with fellow students
3. Read assigned readings before each class; read each chapter at least twice
4. Practice working through the formulas with different data sets, such as sports statistics
5. Regularly review previous material to prepare for exams
6. Ask questions in class and in office hours
7. Make flashcards for important concepts and terms
8. Try to apply statistics to your everyday life and interests - in such areas as sports, finance, business, childrearing, medicine, law, and entertainment.

**Note on the schedule**

This course will follow this schedule to the extent possible. The timing and specific nature of topics and activities may change. You are responsible for being informed of any changes made to the class syllabus. Such changes will be clearly stated in class.
<table>
<thead>
<tr>
<th>WEEK; DATES</th>
<th>Topic</th>
<th>Reading/Assignment</th>
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<tbody>
<tr>
<td>1: 6/07 – 6/09</td>
<td>• Introduction to Statistics</td>
<td>• Ch. 1</td>
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<td>• Computing and understanding averages</td>
<td>• Ch. 2</td>
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<td>2: 6/14 – 6/16</td>
<td>• Understanding variability</td>
<td>• Ch. 3</td>
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<td>• Graphical analysis</td>
<td>• Ch. 4</td>
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<td>3: 6/21 – 6/23</td>
<td>• Correlation coefficients</td>
<td>• Ch. 5</td>
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<tr>
<td>4: 6/28</td>
<td>• Correlation coefficients</td>
<td>• Ch. 5</td>
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<td>4: 6/30</td>
<td>EXAM 1 (Ch. 2-5)</td>
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<td>5: 7/05 – 7/07</td>
<td>• The Normal Distribution</td>
<td>• Ch. 8</td>
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<tr>
<td>6: 7/12 – 7/14</td>
<td>• Testing hypotheses</td>
<td>• Ch. 7</td>
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<td>• Introduction to inferential statistics</td>
<td>• Ch. 9</td>
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<td>7: 7/19</td>
<td>• One-sample z test</td>
<td>• Ch. 10</td>
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<tr>
<td>7: 7/21</td>
<td>EXAM 2 (Ch. 7-10)</td>
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<td>8: 7/26 – 7/28</td>
<td>• Three t tests</td>
<td>• Ch. 11-12</td>
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<td>9: 8/02 – 8/04</td>
<td>• One-way Analysis of Variance &amp; multiple comparisons tests</td>
<td>• Ch. 13</td>
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<td>Project Due (8/04)</td>
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<tr>
<td>10: 8/09</td>
<td>• Testing correlation coefficients</td>
<td>• Ch. 15</td>
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<tr>
<td>10: 8/11</td>
<td>EXAM 3 (11-13 + 15)</td>
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