San José State University  
Department of Psychology  
STAT 115: Intermediate Statistics  
Section 1, Summer 2019

Instructor Contact Information

Instructor: David Schuster, Ph.D.
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Telephone: 408-924-5659
E-mail: david.schuster@sjsu.edu
Office Hours: No regular office hours in summer; contact me to make an appointment

Course Information

Classroom: CCB 100  
Class Days/Time: Tues. & Thurs., 1:30pm – 5:40pm
Prerequisites: STAT 95 or equivalent

Course Description

This course will prepare you to use statistics in human-subjects research. Concepts presented in this course will be useful to critical thinkers in an increasingly data-focused society, and the techniques covered will provide a foundation for conducting professional research in the social sciences.

From the catalog: Statistical analysis at the intermediate level; chi-square, analysis of variance, correlation and regression, and topics in experimental design; use of microcomputers for statistical calculations. Intended for majors in education, nursing, personnel administration, psychology, social service and sociology, and psychology minors.

Course Format

This technology intensive course uses elements from a flipped classroom delivery format. Required technology is described below.

Learning Outcomes

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

Course Learning Outcomes
The major goal of this course is to provide you with a solid foundation in statistics as they are used in psychology and the social sciences. We will examine the logic and strategies of scientific research and learn how to use appropriate inferential statistics to make sense of data. You will learn what statistics are available, when to use specific statistics, and how to interpret results.

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

• CLO1 – Understand the logic of statistical concepts
• CLO2 – Use appropriate statistical methods to solve quantitative problems and test hypotheses
• CLO3 – Understand the logic and strategies of scientific research designs
• CLO4 – Run statistical analyses using SPSS and interpret statistical information presented in SPSS output

The learning objectives will be assessed via written assignments and exam questions. The course learning objectives were adapted from those of Dr. Megumi Hosoda.

Required Materials

Canvas 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/). Having access to the Internet is your responsibility, so have backup plans in case you have problems with your primary computer. I cannot accept excuses about technology problems as valid, unless the entire University network or all of Canvas is offline.

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.

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, a stats textbook is on reserve at the library; give our course name at the circulation desk to check out the textbook. Free, online textbooks are another option:

Collaborative Statistics available at http://cnx.org/content/col10522/latest/
**Calculator**
You are required to have a dedicated scientific or graphing calculator for this course. The best calculator for this course is the **TI-36X Pro**, which costs about $20 retail (available at Office Depot, Staples, Walmart, Frys, the Spartan bookstore, and others. Target does not sell it). It only comes in black, and it looks like this:

![TI-36X Pro Calculator](image)

I can provide the most help with the TI-36X Pro. Many students already own a graphing calculator, and since they have all the necessary features, any of these models will work in place of the TI-36X Pro: TI-83, TI-83 Plus, TI-83 Plus Silver Edition, TI-84 Plus, TI-84 Plus Silver Edition, TI-84 Plus C Silver Edition, TI-84 Plus CE, TI-Nspire with Clickpad (Note: you need to purchase the Touchpad keypad for about $10 or order the free TI-84 Plus keypad), TI-Nspire with Touchpad, TI-Nspire CAS with Touchpad (Nspire CAS with Touchpad is not supported since the keypad is different), TI-Nspire CX, TI-Nspire CX CAS.

You do not need to buy a graphing calculator for this course. The TI-36X Pro will do everything you need. Other scientific or graphing calculators are allowed but are not recommended. Your calculator must have statistics functions, normal distribution functions, a random number generator, a square root function, and an exponent button. If you decide to use a different calculator, keep your calculator manual handy. You will have to translate the procedures used in the course for your calculator.


**SPSS**
Many assignments will require you to perform analysis in and outside of class using SPSS.

To use SPSS, it is intended that you obtain a copy of SPSS for your own computer using the SJSU site license at no cost. Instructions to download, install, and license SPSS are available on the [software downloads](http://its.sjsu.edu/services/software/) web site at [http://its.sjsu.edu/services/software/](http://its.sjsu.edu/services/software/).

**Laptop (optional)**
You will have access to a computer in the lab during this course. You are welcome to bring a laptop or tablet computer to class, but one is not required. Mobile computers can only be used during class for course-related work. Instead of bringing a laptop, you can print your SPSS outputs and bring the printouts to our class meetings.

**Grading Policy**

**How to be Successful in this Course**
It is **essential** that you make time before every class meeting to:

- Check Canvas and your e-mail for course announcements and changes
- Check this syllabus for due dates and upcoming assignments and plan accordingly
- Read the relevant course pack sections
Complete the quiz
- Attend the class meeting
- Complete the in-class activity that corresponds with the lecture
- Consult a statistics textbook, as needed
- Ask questions in class 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:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>&gt; 965</td>
</tr>
<tr>
<td>A</td>
<td>916 to 965</td>
</tr>
<tr>
<td>A-</td>
<td>896 to 915</td>
</tr>
<tr>
<td>B+</td>
<td>866 to 895</td>
</tr>
<tr>
<td>B</td>
<td>816 to 865</td>
</tr>
<tr>
<td>B-</td>
<td>796 to 815</td>
</tr>
<tr>
<td>C+</td>
<td>766 to 795</td>
</tr>
<tr>
<td>C</td>
<td>716 to 765</td>
</tr>
<tr>
<td>C-</td>
<td>696 to 715</td>
</tr>
<tr>
<td>D+</td>
<td>666 to 695</td>
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<tr>
<td>D</td>
<td>616 to 665</td>
</tr>
<tr>
<td>D-</td>
<td>595 to 615</td>
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<tr>
<td>F</td>
<td>&lt; 595</td>
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</tbody>
</table>

**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 in to 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**
Make-ups or extensions for any graded assignment will only be given when:

- The reason is exceptional, unforeseen, and unavoidable. Examples of exceptional circumstances are health emergencies, religious obligations, and military service. Work scheduling is not a sufficient reason for a make-up or extension.
- You provide written documentation.
- You notify me immediately after you become aware of the circumstances requiring a make-up or extension by filling out this request form at [http://goo.gl/forms/0yJQ2KbvtP](http://goo.gl/forms/0yJQ2KbvtP).
If the need for a make-up is known before the assignment due date, the assignment must be completed early. Do not e-mail me with requests for a make-up or extension; instead, complete the request form.

**Grade Checks**
Under Federal privacy laws, I can never e-mail grades to you. Instead, you have my official permission to use the Canvas printout as a record of your current grade in the course. If you need a signed grade check, then please bring the grade check form to my office hours or make an appointment.

Course Requirements and Assignments

**In-Class Activities**
*In-class activities are 20.4% of your final grade (204 points total)*

Seven in-class activities are worth 34 points each, but the lowest one is dropped. This leaves 6 in-class activities worth 34 points each, for a total of 204 points. Typically, the second part of our class meeting will be dedicated to completing an in-class activity. The in-class activities are designed to give you hands-on practice with the techniques discussed in the lecture and handouts. You will receive points for completing all required parts of the assignment as described in the assignment instructions. No partial credit is given. Because this is a collaborative assignment, you must be present for the activity and the reflection question in order to receive credit. Occasionally, you may not have time to finish the in-class activity by the end of class. If this happens, I strongly encourage you to complete the activity on your own. Always check your completed work against the answer key posted to Canvas for feedback on your mastery. Sometimes, the answer key may not be enough explanation; I am always happy to answer your questions about the activities and/or provide additional feedback on your work.

**Quizzes**
*Quizzes are 10% of your final grade (100 points total).*

Six quizzes are worth 20 points each, but the lowest one is dropped. This leaves 5 quizzes worth 20 points each, for a total of 100 points. Following each class, a quiz will be assigned within Canvas. You may use support materials (your textbook, web sites, and your notes) when you take your quiz, but you must take your quiz alone without the help of any other live individual. 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. As with activities, I am always happy to answer your questions following the quiz or discuss its concepts in more detail.

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

**Exams**
*Exams are 70% of your final grade (700 points total).*

Two exams are worth 350 points each. Each exam will focus on applying the knowledge learned in the previous part of the course. The second exam is the non-cumulative final exam.

You may bring and refer to the Course Pack, Calculator Guide, and your notes on the quizzes and exams. A single statistics textbook is also permitted. You may also use a single dedicated scientific or graphing calculator, but no other electronic device will be allowed. At the discretion of the instructor, the exam may be administered on a computer; if this is the case, no Internet access will be allowed, and computer
use during the exam will be monitored electronically. Materials used during an exam are subject to inspection. All other assistance is prohibited. If you will need to refer to any digital materials, you will need to print them out ahead of time. If you have any questions about what material is allowed, ask me. I have no discretion in reporting suspected violations of academic integrity and will follow the required documentation process required by University policy.

**Final Examination or Evaluation**
The second exam is a non-cumulative final exam in the format described above.

**Classroom Protocol**
We will be working in groups frequently. This will only work if you come prepared to class, arrive on time (entering quietly if you are late), silence your electronics, are polite and respectful to everyone in the room, refrain from off-topic activities during lecture or group work, and speak up when you are confused, have questions, or need help.

**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/](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.

**About Diversity**
Consistent with the mission of San José State University, I welcome persons of differing backgrounds and experiences including but not limited to age, disability and health status, ethnicity and race, family structure, geographic region, language, religious/spiritual and secular beliefs, resident status, sex, sexual orientation, gender identity/expression, and socioeconomic status.

It is my goal to foster an 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.

**Course Schedule**
The course schedule is tentative and subject to change; modifications will be posted to Canvas.
<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Topics</th>
<th>Quiz</th>
<th>In-Class Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tue., June 4</td>
<td>Introduction and measurement review</td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>Thu., June 6</td>
<td>Descriptive statistics and data visualization review</td>
<td></td>
<td>Activity 1</td>
</tr>
<tr>
<td>3</td>
<td>Tue., June 11</td>
<td>Standardizing and probability review; the normal distribution</td>
<td>Quiz 1</td>
<td>Activity 2</td>
</tr>
<tr>
<td>4</td>
<td>Thu., June 13</td>
<td>Sampling distributions, estimation, and hypothesis testing</td>
<td>Quiz 2</td>
<td>Activity 3</td>
</tr>
<tr>
<td>5</td>
<td>Tue., June 18</td>
<td><strong>Exam 1</strong> Correlation and regression</td>
<td>Quiz 3</td>
<td>Activity 4</td>
</tr>
<tr>
<td>6</td>
<td>Thu., June 20</td>
<td>T-tests</td>
<td>Quiz 4</td>
<td>Activity 5</td>
</tr>
<tr>
<td>7</td>
<td>Tue., June 25</td>
<td>One-way ANOVA</td>
<td>Quiz 5</td>
<td>Activity 6</td>
</tr>
<tr>
<td>8</td>
<td>Thu., June 27</td>
<td>Two-way ANOVA, Chi-square</td>
<td>Quiz 6</td>
<td>Activity 7</td>
</tr>
<tr>
<td>9</td>
<td>Tue., July 2</td>
<td>Exam review</td>
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</tbody>
</table>

*Note: Review course pack before class; bring course pack to class with any materials posted to Canvas.*