

Psychology 210 - SANTA ANA COLLEGE
STATISTICS FOR THE BEHAVIORAL SCIENCES
(Fulfills transfer requirements for the Psychology AA & AAT, Plans A, B, & C)

Instructor: **Dr. Fernando Ortiz**

Office Hours: **Mon/Wed; 8:30 – 9:30am**

Tue/Thu; 8:30 – 10:00am

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Term: **Fall 2017**

Days: **Tuesdays & Thursdays,
10:20am – 12:25am**

Room: **D-212**

Section #: **38677**

Santa Ana College Mission: The mission of Santa Ana College is to be a leader and partner in meeting the intellectual, cultural, technological, and workforce development needs of our diverse community. Santa Ana College provides access and equity in dynamic learning environment that prepares students for transfer, careers and lifelong intellectual pursuits in a global community.

Psychology Department Mission: The Psychology Department offers a variety of courses and enrichment opportunities designed to prepare students for transfer to, and be competitive at, four-year colleges and universities, provide further awareness and training in the many professions of psychology and increase students' understanding of themselves and their socially diverse world.

Course Objectives

At the conclusion of this course, the student should be able to:

1. Distinguish between different types of data;
2. Distinguish and interpret data presented graphically;
3. Calculate basic descriptive statistics including measures of central tendency and variation;
4. Distinguish between sample and population distributions;
5. Determine the assumptions and use of the Central Limit Theorem;
6. Determine and interpret significance levels and p-values;
7. Identify the basic concepts of hypothesis testing including Type I and Type II errors;
8. Formulate hypothesis tests involving one and two population means, proportions, and standard deviations;
9. Formulate hypothesis tests for linear regression, goodness-of-fit, independence, and one-way ANOVA;
10. Use appropriate statistical techniques to analyze/interpret applications from disciplines in the behavioral sciences; and
11. Produce and interpret technology-based statistical analyses.

Classroom Policies and Blackboard

Class Attendance: Due to the nature of this course, **attendance** is critical to your success. Consistent tardiness will also jeopardize your grade. Accordingly, 50 points will be allocated for class attendance and participation. Attendance will be taken each class day and **10 points will be deducted for each class absence. Three consecutive absences will result in being dropped from the course. Three tardies to class will be considered one absence.**

Cell Phones: It is expected that each student will be at each class session ready to learn and engaged. In this spirit, it is expected that students will turn off (or silence) cell phones for the duration of each class session. Texting, surfing, and/or checking on social media updates are not conducive to the learning process and are distracting to other students and will not be tolerated. If you are seen using your cell phone, you may be asked to leave for the rest of the class session. Taking photos during class is not permitted!

Academic Dishonesty: All forms of academic dishonesty (cheating) will be treated very seriously. This includes, but is not limited to, looking at other student's exams, allowing others to view your exam, using notes during exams, looking at your phone during exams, talking during exams, using someone else's work as your own. Students who are caught cheating on an assignment will receive a 0 on the assignment (regardless of any completed work) and an Academic Dishonesty report will be completed and submitted to the Dean of Student Services and the Dean of the Humanities and Social Sciences Division.

Canvas (<https://rscsd.instructure.com>): I use Canvas to maintain grades throughout the semester. It is important that you periodically check your grade on Canvas to ensure accuracy. I also use Canvas to send student email. Check your personal information to ensure that the email address on your Canvas account is accurate. Since it is my firm belief that each student is responsible for creating their own set of classroom notes, class lectures (PowerPoint presentations) will not be posted on Canvas. Therefore, if you miss a class, it is your responsibility to obtain a copy of the notes from a classmate or to see me to arrange a time for you to copy the notes from the slides.

Required materials

Textbook: Heiman, G. (2015). *Behavioral Sciences STAT* (2nd ed.). Cengage

Calculator: **TI-83** or **TI-84** graphing calculator is highly recommended.

Assignments and Grading

Homework will be assigned each Tuesday and will be due the following Tuesday **at the beginning of class (first 10 minutes)**. A total of 15 homework assignments will be given throughout the semester, each worth 6 points maximum (partial credit will be given for partial work). It is important that you establish consistent work habits to avoid missing assignments. **HOMEWORK WILL NOT BE ACCEPTED LATE.** All homework assignments should be neat and organized. Staple all homework pages in order and write your first and last name at the top of the assignment (NO STAPLE=NO GRADE; NO NAME=NO GRADE). Use only white paper (use of recycled paper is acceptable and encouraged). Do not use paper torn out of a spiral binder (or remove torn edges). We will begin each Tuesday class session with a review of HW exercises you would like to cover. If you would like to review a problem in class, email the exercise number by 9:00pm on the night prior to the due date using the email subject line "Stats Homework".

Computer Labs will be assigned four times during the semester. Each assignment will be based on material being covered in class at the time. Computer lab assignments will require you to use Excel with the Analysis ToolPak add-in. Instructions on how to activate the software will be provided in class. Allow plenty of time to complete the computer lab assignments prior to the due dates. Oftentimes, students run into unexpected difficulties with equipment or software. See course syllabus for computer lab due dates. Each of the four computer lab assignments is worth 50-60 points. Late assignments will be accepted with substantial point deductions; 20 points less for each calendar day they are late.

Pop Quizzes. Ten pop quizzes will be given during the semester. Each quiz is worth a maximum of 10 points. Quizzes will be given at the beginning of class and will be based on material covered in the previous class session and/or expected reading material. **NO MAKE-UP QUIZZES!**

Unit Exams. There will be four (4) unit exams given during the semester. Each will cover three chapters and will be worth 100 points. The unit exams will consist of multiple-choice questions, problems to be worked out, and short-answer essay questions. **You will need to provide a total of four 100AS test forms on or before Thursday, September 14. See course syllabus for Unit Exam dates. There will be no make-up exams.**

Final Grades and Drop Policy. Your final grade will be based on Attendance (50 pts.), Homework (90 pts.), Computer Labs (160 pts.), Pop Quizzes (100 pts.), and Unit Exams (400 pts.). Final grade distribution will be calculated using a standard percentage distribution where: 90% (720 or more points)=A, 80% (640-719)=B, 70% (560-639)=C, 60% (480-559)=D, 59% (479 or fewer points)=F. Keep records of all your assignments in order to avoid any discrepancies with your grade. If you decide to drop the course for whatever reason, ***it is your responsibility to officially drop*** through the admissions office. **Failure to do so will result in a letter grade of F** for the course. Check class schedule for important class add and drop deadlines.

Your success in this course is important to me. Santa Ana College and I are committed to providing reasonable accommodations for all individuals with disabilities. If you have a disability that may have some impact on your ability to do well in this course, I encourage you to speak with me as soon as possible. Also, please contact Disabled Student Programs & Services so that we can all collaborate on your classroom accommodations in a timely manner. DSP&S is located in VL-203, and their phone number is 714-564-6295. The DSP&S office requires documentation of your disability in order to receive reasonable accommodations. If you do not have documentation, they will work with you to acquire it. I look forward to supporting you to meet your learning goals.

Psychology 210
Statistics for the Behavioral Sciences
 Fall 2017

	Week	Date	Topics	Chapter	Due
Unit I	1	Aug. 29	Introduction to PSYC 210, Logic of Statistics and Research	1	
		Aug. 31	Relationships, Descriptive and Inferential Statistics	1	
	2	Sep. 5	Experiments and Correlational Studies	1	HW1
		Sep. 7	Frequency Distribution Basics, Types of Freq. Distributions	2	
	3	Sep. 12	Relative Frequency, Normal Curve, Percentiles	2	HW2
		Sep. 14	Central Tendency Basics, Computing MTC	3	
	4	Sep. 19	Applying Mean to Research and the Population Mean	3	HW3
		Sep. 21	Unit I Exam	1, 2, & 3	Comp. Lab 1

Unit II	5	Sep. 26	Variability Basics, Range, Standard Deviation, Variance	4	HW4
		Sep. 28	Computing and Reporting Variability	4	
	6	Oct. 3	z-Scores and the z Distribution	5	HW5
		Oct. 5	Using z-Scores for Comparison	5	
	7	Oct. 10	Understanding Probability, Probability Distributions	6	HW6
		Oct. 12	Probabilities from the Standard Normal Distribution	6	
	8	Oct. 17	Random Sampling and Sampling Error	6	HW7
		Oct. 19	Unit II Exam	4, 5, & 6	Comp. Lab 2

Unit III	9	Oct. 24	Inferential Statistics in Research, Performing the z-Test	7	HW8
		Oct. 26	Interpreting Results, the One-Tailed Test	7	
	10	Oct. 31	Performing the One-Sample t-Test, Interpretation	8	HW9
		Nov. 2	Estimating μ by Computing a Confidence Interval	8	
	11	Nov. 7	Two-Sample Experiments, Independent Samples t-Test	9	HW10
		Nov. 9	Performing the Related- Sample t-Test	9	
	12	Nov. 14	Describing Effect Size	9	HW11
		Nov. 16	Unit III Exam	7, 8, & 9	

Unit IV	13	Nov. 21	Correlations and the Pearson Correlation Coefficient	10	HW12
		Nov. 23	Significance Testing of the Pearson r , Linear Regression	10	
	14	Nov. 28	Overview and Components of Analysis of Variance	11	HW13
		Nov. 30	Performing the ANOVA and Tukey <i>HSD</i> Test	11	
	15	Dec. 5	Effect Size and η^2 , Within-Subjects ANOVA	11	HW14
		Dec. 7	Parametric vs. Nonparametric Stats, Chi Square Basics	13	
	16	Dec. 12	The Goodness of Fit Test and The Test of Independence	13	HW15
		Dec. 14	Unit IV Exam	10, 11, & 13	Comp. Lab 4

EFFECTIVE STRATEGIES FOR STUDYING STATISTICS

Reflect on each of the following strategies and how you plan to implement them into your efforts in this class.

1. **Develop/Maintain a Solid Math Foundation** – Since your enrollment in this class is contingent on a prerequisite of successful completion of college algebra, there is an assumption that mathematical fundamentals will be utilized. If you ever asked yourself, “When am I ever going to use this?” your question will be answered this semester.
2. **Form a Study Group** – Study groups can be very effective. Optimal size for a study group is 3 to 4 people. Meet regularly in a distraction-free environment. Help others with material you understand better; often, the best way to learn something is to teach it to someone else.

Name

Email

3. **Keep Up** – Come to every class and take thorough notes. Make it a habit to complete homework problems as soon as possible. Playing catch-up in this class is very difficult!
4. **Time Management** – You must plan to spend approximately 10 hours of study time for this class alone (this does not include your class time). It is wiser to spread out the time over several days rather than “cram” sessions to get your homework done or to prepare for an exam.
5. **Study Actively** – Be actively involved in the learning process. Recognize when you don’t understand something. Ask questions in class or during office hours, or ask help from your fellow classmates
6. **Practice, Practice, Practice** – Focus on the concepts underlying the use and interpretation of statistics. Do not waste your time memorizing formulas. The assigned homework problems are designed to be the MINIMUM number of problems you should complete. You have a surplus of problems to attempt in your efforts to earn the grade you desire.
7. **Show Your Work** – When working out problems, show your work even if it seems unnecessary. There are often many steps involved and if you find yourself lost along the way, it is easier to recover your steps if they are written down. It is also helpful to use a pencil when doing math.