

Introduction to Psychological Statistics (PSYC 2)
Summer Session 2, 2017

Class Meetings: July 31- August 30

Mondays and Wednesdays, 1-4:30 pm
Physical Sciences Building, 140

Instructor: Julia S. Soares, M.S.

Office hours: Tuesdays 1-2:30 or by appointment
Office Location: Social Sciences 2, Room 305
Contact: jusoares@ucsc.edu

Prerequisites:

Psych 1 or 20, and Applied Mathematics and Statistics 2, 3 or 6 or Mathematics 3 or 4 or 11A or satisfactory placement score on math placement exam or CEEB Advanced Placement Calculus AB exam.

Course Description:

Psychology 2 provides an introduction to basic statistical principles and techniques used by psychological researchers. The goals of this course are to provide you with the statistical skills to run simple analyses on psychological data, and think critically about the statistics you encounter in research as well as everyday life. Ideally, you will be able to determine and calculate the appropriate statistical test to answer a research question and interpret the statistics you may encounter in research reports. We will cover topics ranging from descriptive statistics to hypothesis testing using various methods. This course is prerequisite to course 181.

Textbook and Resources:

We will be using **Canvas** to post slides, homework assignments, and grades. Please make sure you have a working login and can access the site. Slides will be uploaded typically within a day of any given lecture. Please note that slides are made available only for your personal use and should not be sold or shared for commercial purposes.

Textbook: The textbook for this course will be the hardcover edition of *Statistics for the Behavioral Sciences (9th edition)*, by **Frederick J Gravetter, Larry B. Wallnau** ISBN-10: 1111830991 | ISBN-13: 978-1111830991. Note that the bookstore offers electronic versions of most textbooks, and that the text is likely available for cheaper online. The book is also on reserve in McHenry Library. Please read any assigned reading **before** the relevant lecture. Reading before the lecture will help scaffold the information given in lecture and give you the opportunity to ask questions when relevant information is being presented.

You will need a **simple calculator** (one that has basic functions and can also take square roots and exponents). You do not need an expensive graphing calculator, just a calculator that is **not** attached to your smartphone.

Please come see me if you have any questions about the material. I am happy to meet and answer any questions you might have about statistics, the course, or psychological research in general. Please don't wait until you're panicking about the course to come to me for help!

Evaluation:

Learning Checks (7) (10%)

Short online quizzes will be administered during each lecture to help you assess your understanding of the course material and get used to the type of questions you will be asked on your exams. The questions will be administered in class, and scored based on participation. Your lowest quiz grade will be dropped, so if you must miss class one day, your grade will not be lowered. As such, no make-up quizzes will be administered.

Homework (6) (40%)

Homework will be collected at the beginning of each class except for class on 7/31, 8/2, 8/14 and 8/30. We will go over homework during each class period the day it is due, so no late homework will be accepted after the start of class. Your lowest homework grade will be dropped. As such, no make-up homework is allowed. If you need to miss class or are running late because of an emergency, you may email me your homework **before** the start of class.

Format: Your final answer to each homework question must be boxed/circled or highlighted. You are expected to show your work on the homework questions, and you will not receive credit if work is not shown. Written homework will be accepted, but it should be done neatly. Please use pencil, if possible, to avoid crossing out mistakes.

Examinations (2) (50%)

You will be given 2 exams, each worth 25% of your final grade. The exams will be multiple-choice format and open-book. Your textbook, notes, calculator, and other class materials are available for you to use during the exams, but no laptops, cell phones, or any other devices that connect to the internet are permitted. If you type your notes, make sure you print them before the exams. The exams are cumulative as the material covered in class builds on itself. You will be given a study guide at least 1 week before each exam.

(see the final section of the syllabus for information about extra credit, which can add up to 3% to your final grade)

Calculation of grades

The above components make up the final grade in the following manner. First, the average of each component is calculated, and you are assigned that number of points based on the weight of each component. The weighted average of the grade points from the three components determines your final grade.

Please note that the Psychology Department requires at least a B- in PSYC 2 for it to count towards declaring the Psychology or Cognitive Science majors. For more information, contact psychology advising: psyadv@ucsc.edu.

Scores to Letter Grades:

- 100 to 97.5 percent 4.0 A+
- 97.4 to 92.5 percent 3.7 A
- 92.4 to 90.0 percent 3.4 A-
- 89.9 to 87.5 percent 3.2 B+
- 87.4 to 82.5 percent 3.0 B
- 82.4 to 80.0 percent 2.7 B-
- 79.9 to 77.5 percent 2.3 C+
- 77.4 to 70.0 percent 2.0 C
- 69.9 to 68.5 percent 1.7 C-
- 69.4 to 67.5 percent 1.3 D+
- 67.4 to 60.0 percent 1.0 D
- Less than 60 percent 0.0 F

Course Schedule

Date	Topic	Reading
7/31 Mon Week 1	Introduction, frequency distributions	Chapter 1 & 2
8/2 Wed Week 1	Central tendency, variability IN-CLASS QUIZZES BEGIN	Chapter 3 & 4
8/7 Mon Week 2	Z-scores, standardized distributions, probability HW 1 Due	Chapter 5 & 6
8/9 Wed Week 2	Distributions, intro to hypothesis testing (z-tests) HW 2 Due	Ch 7 & 8
8/14 Mon Week 3	Exam 1	
8/16 Wed Week 3	Hypothesis testing continued (statistical power, effect size, confidence intervals), 1-sample t test HW 3 Due	Ch 8 & 9
8/21 Mon Week 4	Independent and Dependent-Samples t HW 4 Due	Ch 10 & 11
8/23 Wed Week 4	Analysis of Variance (1-way, factorial) HW 5 Due	Ch 12, 13, 14
8/28 Mon Week 5	Correlations, choosing a test, final review HW 6 Due	Ch 15 & 19
8/30 Wed Week 5	Exam 2	

Additional Information:

Students with Disabilities:

Any student who thinks they may need accommodation based on the impact of a disability should contact me privately to submit their Accommodation Authorization and discuss specific needs as soon as possible. Even if you have accommodations through DRC but don't always use or aren't sure if you want to use them, please submit your forms regardless just so you have the accommodations you're entitled to if you choose to use them. Please contact the Disability Resource Center at 831-459-2089 in room 146 Hahn Student Services or by e-mail at drc@ucsc.edu to coordinate the accommodations.

Distribution of Lecture Notes:

Students may be disciplined for selling or distributing course notes for any commercial purpose, whether or not they are the person taking the notes. The unauthorized sale of lecture notes or class materials is a violation of campus policies, state law, and may also constitute copyright infringement subject to legal action.

Academic Integrity:

All of the work you submit for use in this course must be completely your own and produced exclusively for this class. Use of any sources should be cited properly. Refer to the library guide here for more information about source citation and plagiarism:

<http://library.ucsc.edu/science/instruction/CitingSources.pdf>

For the consequences of academic dishonesty, refer to the student guide available here:

http://www.ucsc.edu/academics/academic_integrity/undergraduate_students

Violations will be taken seriously; if you have any questions about if something constitutes academic dishonesty, please contact me.

With respect to homework assignments: students are welcome to consult one another with conceptual questions about the homework. However, I expect the work you submit to be **accomplished independently**. Homework assignments with exactly the same prose will be considered to violate the academic honesty policy.

A relevant issue is the use of **statistical software or calculators**. Unless otherwise noted, I expect computations to be performed by hand (using only a basic calculator). If you have a statistical calculator or stats program and know how to use it, it is fine to employ it to **check** your work. However, both on homework and on exams, I expect you to show your work (not just report a final answer). Answers that do not show work will not receive credit.

Extra Credit:

Instructor Evaluation:

You will receive an extra 1% towards your final grade if you complete a course evaluation for me online at the end of the year. I will announce when these are available

in class. Your evaluation will be anonymous, so please complete it honestly. I'll just get a list of students who submitted the evaluations (separate of any evaluations themselves) to grant you this credit.

Research Participation:

You can complete up to 4 hours of research credit for up to 2% towards your final grade. Research hours are not the same as research studies. Studies are worth different numbers of credit-hours, so make sure you complete 4 hours of research for the full 2 points. The number of points you get will be the number of hours you complete divided by two (so, if you complete 1.5 hours, you'll get .75% added to your final grade). If you are under the age of 18 or choose not to participate in research, you can complete an alternative assignment (details below). See below for more information about completing research hours.

Research Participation

Students can earn up to two extra credit points by completing research hours (or alternative assignments) by 5pm on Friday, September 1st, 2017.

Follow these easy steps to sign-up for research projects:

- 1) Go to the E-Link website at <https://ucsc.sona-systems.com>
- 2) If you are enrolled in the class at the start of the quarter, then an account should already be created for you. To log in for the first time, click "Forgot Password?" to retrieve the pre-set password. For those who added the class late, or for some reason the system won't let you log in, you may need to click "Request Account." Only request a new account if the "Forgot Password" link isn't working.
- 3) Always enter your UCSC email address. You will receive your password via email.
- 4) Log in and follow the instructions.

IMPORTANT: You can earn extra-credit points by either participating in studies (surveys or experiments) or writing papers (the alternative assignment). Studies are posted throughout the quarter. Plan ahead and complete them as soon as possible. Check online often for new studies. If you know you cannot make it, and if the time until the study is more than 24 hours, you can cancel on E-link. If you fail to show up for a study, or fail to cancel in time, you will be marked as having an "unexcused no-show." If you accumulate three unexcused no-shows you will be prevented from signing up for more experiments. All participation must be completed by 5pm on the Friday of the last week of instruction. Do not wait until the last week to sign up.

What if you can't find studies? Although some studies may be available right at the start of the quarter, there may not be enough for everyone. Please be patient, researchers will post new studies throughout the quarter. There is usually a big spike in hours during the last couple weeks. If you are concerned about the availability of hours, please don't email your instructors or TAs, instead email the pool administrator so that they can try to address the issue directly (ucscresearchpool@gmail.com). This is also the best email to use if you have other troubles with getting credit for studies you've already participated in, or other pool related issues that arise during the quarter.

Alternative assignment: If you prefer to not participate in research projects (or if you are under the age of 18) you may substitute up to 2 papers, each critically evaluating a psychology research article. Each paper will be worth 1% of extra credit (so each can substitute 2 hours of research participation). If you are doing the alternative written assignments, they must be emailed directly to your instructor or TA by the last day of instruction. If you have any questions or concerns please contact the research pool administrator at ucscresearchpool@gmail.com.

Each paper should be 2-3 pages (double spaced, 12-point, times new roman) and critically evaluate a psychology research article (addressing the questions shown below). You will need to find articles published in 2016 or 2017 in one of the following journals: (a) *Psychological Science*; (b) *Psychonomic Bulletin & Review*; (c) *Journal of Personality and Social Psychology*; (d) *Developmental Psychology*.

- 1) What were the basic questions or hypotheses under investigation?
- 2) How did the researchers test their hypotheses?
- 3) What did the researchers find and how were these findings interpreted?
- 4) What statistical measures did they use and were they appropriate? Why or why not?
- 5) Are you convinced? Why or why not? Explain.