

Psychology 2: Introduction to Psychological Statistics

Remote, Synchronous

Summer 2022; Session 2

July 25, 2022 - August 26, 2022

M/W - 1:00PM - 4:30PM

Instructor:

Andrew Guydish, M.S., M.A.

Office Hours: Wednesdays 12PM-1PM (or by appointment; virtual, link on Canvas)

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Course Highlight:

We use statistics to ask questions, understand information we are exposed to, and even to make decisions in our daily lives. This class focuses on statistical techniques used in psychology. You will be introduced to tools that will help you organize and interpret data. You will learn to summarize and describe data (descriptive statistics). You will also learn how to use statistics to answer questions by making inferences based on hypothesis testing using various methods (inferential statistics). This course is prerequisite to Psychology 181. If you attend lectures and take good notes, you should perform well in this course.

Program Learning Objectives (Objectives can be found [here](#)):

1. Application of knowledge with critical thinking skills (Psych & Cog Sci): Students should be able to use critical thinking to evaluate and interpret evidence, and to apply psychological/cognitive science concepts, theories, and research findings to individual, social, and cultural issues.

In this class you'll learn the critical skills necessary to interpret statistical data and analyses. We'll learn how to think critically about conclusions we come to based on statistical analyses. We'll also learn how to come to our own conclusions based on statistical analyses we conduct and connect these conclusions to the overall questions being asked.

2. Application of research methods with values and integrity: Students should be able to apply basic research methods in psychology, with sensitivity to ethical principles.

As the focus of this class, you'll learn the ins and outs of statistical analyses. Critically, you'll learn when each type of main statistical analysis should be used and when it's appropriate. We'll discuss ethical issues involved with data collection.

3. Communication skills (Psych & Cog Sci): Students should be able to demonstrate effective communication skills following professional conventions in psychology/cognitive science appropriate to purpose and context.

You'll gain practice in writing out conclusions drawn from statistical analyses.

4. Awareness of sociocultural diversity and societal inequality: Students should be able to understand the complexity of sociocultural diversity and societal inequality in the inquiry and analysis of psychological issues.

We'll discuss issues of generalizability when it comes to conclusions we come to based on statistical analyses, incorporating the topics of sociocultural diversity into these discussions.

Important Dates:

Drop: Monday, August 1, 2022 (Tuition Reversal)

Request for "W": Sunday, August 14, 2022 (No Tuition Reversal)

Change Grade Option: Sunday, August 21, 2022

Required Text:

An Introduction to Psychological Statistics By Foster, Lane, Scott, Hebl, Guerra, Osherson, and Zimmer. This is a **free open source textbook** you can download here (<https://irl.umsl.edu/oer/4/>) by clicking the "download" button.

(Foster, Garrett C.; Lane, David; Scott, David; Hebl, Mikki; Guerra, Rudy; Osherson, Dan; and Zimmer, Heidi, "An Introduction to Psychological Statistics" (2018). *Open Educational Resources Collection*. 4. <https://irl.umsl.edu/oer/4/>)

Grades:

Homework Assignments – 40%:

In order to make sure you are grasping the material on your own and keeping up with the readings, you will be asked to complete **5 homework assignments, each worth 50 points**. Each homework assignment will be worth 8% of your final grade. Most questions will pertain to what was covered in lecture, so it's vital you attend lecture to ensure success on the homework

assignments. These will include a mixture of math questions as well as short answer questions (with some questions coming from the book, some being new). Assignments will be posted every Monday and you'll have the whole week to do them (due on Sundays, *except* finals week, see schedule below). Please take homework assignments seriously. They will require in depth knowledge of the material to complete, and will take time. Start early so you do not have to rush towards the end of the week.

Late Policy: Late homework will be accepted, but will receive a 10% penalty for each day late unless otherwise discussed with me (e.g., granted extensions). A “day” is anytime passed 11:59PM. For example, if the homework is due on Sunday at 11:59PM, and you turn it in on Tuesday at 9AM, you would receive a 20% penalty.

Exams – 60%:

There will be **three 50-question multiple-choice exams, each worth 100 points**. Each exam is worth 20% of your final grade. Exams will be held during class time. All exams will be cumulative, with a majority of questions coming from the most recent material covered. Exams will be primarily on material covered in class. If you know right now that you cannot make the **exam dates (Jun 30, July 12, July 21)**, please do not take this class. Cheating on an exam will, at minimum, result in an exam score of zero for that exam.

Due to the unique nature of condensing the class to five weeks, **there will be lecture on test days**. The material that is covered in lecture on test days **will not** be covered on that day's exam. On test days, lecture will be approximately an hour and fifteen minutes (9:00AM to 10:15AM), followed by a 45 minute break, with the testing period being from 11:00AM to 12:30PM.

Make-Up Exams:

Make-up exams are for unexpected illness and emergencies. Make-up exams will be multiple choice and will be a completely new set of questions. Make-up exams can be requested no earlier than the day of the exam and no later than the end of class on the day of the exam. The details of the exam (when it will be available, when it is due) will be communicated if/when it is needed. If you miss the final exam, you may need to request an incomplete for the course.

Teaching Evaluations at the End of the Quarter – Extra Credit:

- *Instructor evaluations:* If more than 75% of the class fills out online teaching evaluations *for the instructor*, I will grant everyone a 1% bonus to their final grade. That is, if you earn 89% in the course, you would get 90%.

Research Extra Credit:

For participating in the SONA studies over summer, you will be able to earn two extra credit points. No additional extra credit will be offered in this course.

Research Participation – The Psychology Department provides an opportunity for students in this course to gain extra credit by participating in psychology research projects (surveys or experiments) for **two (2) hours**, or by completing an alternative assignment (see below).

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

1. Go to the Sona 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 to complete the Prescreening Questionnaire. Your responses on this questionnaire will determine your eligibility for different studies.

IMPORTANT: You can earn research credits points by either participating in studies (in-lab experiments or online surveys) 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 Sona. 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 (**Friday, August 26**). 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 other issues arise during the quarter. If you participated in a study but didn’t receive credit after two days, please start by emailing the researchers directly. If the researchers don’t respond then send an email to the pool administrator. Rest assured, however, that all pending timeslots will be given credit at the end of the quarter before a report is sent to your professor.

Alternative assignment: If you prefer to not participate in research projects (or if you are under the age of 18) you may substitute **two (2) papers**, each critically evaluating a psychology research article. 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. Please note that plagiarized papers will result in a No Pass.

Each paper should be 1-2 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 2018, 2019, or 2020 in one of the following journals: (a) *Psychological Science*; (b) *Psychonomic Bulletin & Review*; (c) *Memory and Cognition*; (d) *Journal of Personality and Social 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) Are you convinced? Why or why not? Explain.

Final Grade Cutoffs:

A+	96.67 % and above	B	83.34 to 86.66 %	C-	70.00 to 73.33 %
A	93.34 to 96.66 %	B-	80.00 to 83.33 %	D	60.00 to 69.99 %
A-	90.00 to 93.33 %	C+	76.67 to 79.99 %	F	below 60.00 %
B+	86.67 % to 89.99 %	C	73.34 to 76.66 %		

Course Schedule:

Due to the class being compressed into five weeks, there may be a slight variation in the schedule. Any changes to the syllabus will be noted and updated on Canvas as soon as they are discussed after lecture. It is your job as the student to stay up-to-date with these changes by (1) being present in lecture and (2) checking on Canvas.

In the event that we are unable to hold class (e.g. planned power outage, unanticipated power outage, fire warning requiring people to stay indoors, fire warning requiring people to leave the area, campus closure due to picketing), I may adjust the course structure (lecture schedule, assignments, assessments) and due dates. I will stay in communication with the class via Canvas announcements.

Schedule					
Week	Date	Day	Topic	Reading	Assignment Due on Canvas
1	Jul 25	M	Introduction to Statistics Frequency distributions, measures of central tendency	Chapter 1, Chapter 2, Chapter 3	Homework 1 Due Sunday, July 31, 11:59PM
	Jul 27	W	Variability, Z-Scores, probability, Sampling distributions	Chapter 4, Chapter 5, Chapter 6	
2	Aug 1	M	Hypothesis Testing	Chapter 7	Homework 2 Due Sunday, Aug 7, 11:59PM
	Aug 3	W	T-Tests EXAM 1	Chapter 8	
3	Aug 8	M	Repeated Measures and Independent Samples	Chapter 9, Chapter 10	Homework 3 Due Sunday, Aug 14, 11:59PM
	Aug 10	W	Analysis of Variance	Chapter 11	
4	Aug 15	M	Analysis of Variance EXAM 2	Chapter 11	Homework 4 Due Sunday, Aug 21, 11:59PM
	Aug 17	W	Correlations	Chapter 12	
5	Aug 22	M	Choosing the right test		Homework 5 Due FRIDAY , Aug 26, 11:59PM
	Aug 24	W	Class Review FINAL EXAM		

Psychology Department Undergraduate Advising:

Declared Cognitive Science and Psychology majors are added to the psychgrads@ucsc.edu alias and will receive emails from Psychology Advising (psyadv@ucsc.edu). You should read these emails carefully, as they contain important information about enrollment, undergraduate opportunities, and other topics. If you are a declared Cognitive Science or Psychology major and have NOT received emails by the second week of the quarter, please email psyadv@ucsc.edu. In addition, you can find answers to common questions, an enrollment help page, and information on advising availability at <https://psychology.ucsc.edu/undergraduate/advising/index.html>. We also post many announcements from other campus departments and organizations on our

Facebook page, which serves as a virtual bulletin board:
<https://www.facebook.com/UCSCPsychologyDepartment>.

Disability Resource Center Syllabus Statement (from the DRC website:
<https://drc.ucsc.edu/faculty-and-staff/fac-staff-overview/syllabus-statement.html>):

UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me privately during my office hours or by appointment, preferably within the **first week** of the quarter. At this time, I would also like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at [831-459-2089](tel:831-459-2089) or by email at drc@ucsc.edu.

Campus Advocacy, Resources and Education Statement (from website
<https://care.ucsc.edu/who-we-are/about-care.html>):

The CARE program provides support, advocacy, resources and violence prevention education to the UC Santa Cruz community. We respond to the needs of students, staff, faculty and non-affiliates impacted by stalking, dating/domestic violence and sexual assault by providing free and confidential services. CARE also works collaboratively with students, faculty and staff to educate the campus community about the vital role that each of us has in preventing violence and creating social justice locally and globally. care@ucsc.edu, (831) 502-2273.

Distribution of Lecture Notes and Materials:

Please note that students may be disciplined for selling, preparing, or distributing course lecture notes, including notes created independently by students. The unauthorized sale of lecture notes, handouts, readers or other course materials is a violation of campus policies as well as state law. Violation by distribution to the public may also constitute copyright infringement subject to legal action.

Academic Dishonesty

Academic integrity is the cornerstone of a university education. Academic dishonesty diminishes the university as an institution and all members of the university community. It tarnishes the value of a UCSC degree. All members of the UCSC community have an explicit responsibility to foster an environment of trust, honesty, fairness, respect, and responsibility. All members of the university community are expected to present as their original work only that which is truly their own. All members of the community are expected to report observed instances of cheating,

plagiarism, and other forms of academic dishonesty in order to ensure that the integrity of scholarship is valued and preserved at UCSC.

In the event a student is found in violation of the UCSC Academic Integrity policy, they may face both academic sanctions imposed by the instructor of record and disciplinary sanctions imposed either by the provost of his or her college or the Academic Tribunal convened to hear the case. Violations of the Academic Integrity policy can result in dismissal from the university and a permanent notation on a student's transcript.

For the full policy and disciplinary procedures on academic dishonesty, students and instructors should refer to the [Academic Integrity page](#) at the Division of Undergraduate Education.

Title IX:

(From Website: <https://titleix.ucsc.edu/resources/syllabi-disclosure-statement.html>): Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the Campus Advocacy Resources & Education (CARE) Office by calling (831) 502-2273. In addition, Counseling & Psychological Services (CAPS) can provide confidential, counseling support, (831) 459-2628. You can also report gender discrimination directly to the

Copyright Note:

Andrew Guydish created this course and holds the copyright to most of the materials used in this course, in both print and electronic media, including almost all lectures, exams, and handouts. This includes this syllabus and other material posted at Canvas. Materials may not be distributed without Andrew's permission. This includes posting material at websites (such as StudyBlue and Quizlet) and sharing this material with people who are not in the course. Unauthorized recordings of lectures, as well as distribution of audio or visual lecture material is not allowed.