

# PSYCH 2: Introduction to Psychological Statistics

In-Person

Summer 2024; Session 1

June 24 – July 26

M/W/F - 1:00PM – 3:30PM

J Baskin Engineering 156

## COURSE INFORMATION

Statistics are an important way to learn about the world and are often misunderstood. This class focuses on how statistics are used in psychology. You will learn how to use data to describe a sample (descriptive statistics) and use data to provide inferences about populations (inferential statistics). You will also learn how to interpret these statistics and describe the results in words. This course is prerequisite to PSYC 181. If you attend lectures, keep up with assignments, and ask questions as you have them, you will do well in this course.

## INSTRUCTOR INFORMATION

Michael Vallerga, M.A., PhD Candidate

Office Hours: Tuesdays and Thursdays, 10AM-11AM (virtual, link on Canvas)

Email: [mvallerg@ucsc.edu](mailto:mvallerg@ucsc.edu)

## PROGRAM LEARNING OUTCOMES

**1. Application of knowledge with critical thinking skills:** Students should be able to use critical thinking to evaluate and interpret evidence, and to apply psychological concepts, theories, and research findings to individual, social, and cultural issues.

*As a result of learning how statistical analyses work, you will learn critical skills that will help you interpret statistical analyses. This includes an ability to take a critical perspective on statistics you encounter out in the world as well as in your academic career. You will also learn to be able to use data to answer questions you have about the world from a psychological perspective.*

**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.

*Throughout this course, we will be looking at real-world examples of data and studies, as well as using data from real datasets. This will be an opportunity to practice working with data in a very intentional way, with integrity. We will also discuss research ethics related to statistics.*

**3. Communication skills:** Students should be able to demonstrate effective communication skills following professional conventions in psychology appropriate to purpose and context.

*In this course, statistical analysis does not end with getting the appropriate number. We will be covering how to properly convey statistical results in APA style. There will also be opportunities to more comprehensively explain what variables and statistical analyses mean in plain language.*

**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.

*Whenever possible, we will be looking at important issues that impact people in different ways. In regards to sociocultural diversity, we will thoughtfully engage with data with an understanding of social justice for minoritized peoples.*

## **PREREQUISITES/COREQUISITES**

*List any required/expected prior knowledge, or coursework. Explain to students where and how they might be able to refresh their knowledge and understanding from a prior course, such as videos, worksheets, etc., that can support recall of that prior knowledge.*

## **REQUIRED MATERIALS, TEXTBOOKS AND TECHNOLOGY**

**Textbook (Optional)** - Salkind (2019). *Statistics for People Who Think They Hate Statistics*, 7th Edition. SAGE Publications. ISBN-10: 1506333834

**Required Software** -SPSS is required for many homework assignments. Fortunately, a student license is available for free from UCSC online:

<https://its.ucsc.edu/software/spss-students.html>

## **COMMUNICATION**

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on the Canvas learning management system course website. Students are responsible for regularly checking the Canvas system to learn of any updates.

Office hours will be conducted through Zoom, administered via link on Canvas. I will post announcements about changes to the specific dates and times as needed.

As you know, a university degree is a significant undertaking and requires a high level of commitment, time management, organization, and initiative. Thus, it is in your best interest to stay on top of coursework and keep in touch with the instructor.

The best way to keep in touch is in-person during office hours (virtually), or at another time by appointment. If you cannot meet with me in person (virtually), I prefer that you email me. Emails will be mostly only responded to during business hours (Monday through Friday only).

## **ASSIGNMENTS & ASSESSMENT**

All assignments will be administered on Canvas.

***In-Class Assignments (24 Points)***

In-Class Assignments are intended to give students a practice activity to make sure that students are following along and to help them remember important parts of what was covered. As such, they are intended to be completed with time allotted for them in class. There will be 24 of these over the course of the term. Each is worth 1 Point. Credit is received for completion, regardless of accuracy. I recommend you use them as a tool for reinforcing learning. These relate to learning outcome 1.

### ***Homework (30 Points)***

There will be a homework component twice a week. This is an opportunity to get feedback on your understanding of course concepts and statistical analysis skills. Each homework assignment will be graded with comments as to where students might have gone wrong. There will be a total of 10 Homework Assignments over the course of the semester. Each Homework assignment is worth 3 points. Homework assignments will provide data to analyze with specific questions to complete and answer. For inferential statistics, often homework problems will present a research scenario and associated pieces (e.g. Sum of Squares and Standard Error) that allow conducting these analyses. These relate to learning outcomes 1 and 3.

### ***Quizzes (32 Points)***

There will be four take-home Quizzes. They will each be due at the beginning of the week for week 2 through week 5. Each Quiz will cover the previous week's topics. Quizzes will be open note but should not be completed collaboratively with anyone else. Although these quizzes should take approximately an hour to complete, there will be no time limit for these quizzes. Because of this, please be sure to start these early and, if you have any questions, contact me for clarification. The questions on these quizzes will be a combination of multiple choice and numeric entry (e.g. calculating a mean or a z-score). These relate to learning outcome 1.

### ***Final Paper (14 Points)***

This final paper assignment will be an opportunity to demonstrate student understanding of course concepts in a way that explores topics that are interesting to each student. The assignment will be explained in a more detailed assignment sheet, but it will focus on a statistical analysis covered in the course (e.g. correlation, t-test, ANOVA, or chi-square) and include:

**Description of Variables** – a short discussion of what variables will be used in the statistical analysis (e.g. how the variable was measured, response options, measures of central tendency and variation).

**Description of a Relationship of Interest** – a brief explanation of what the relationship between two or more variables that will be explored. For example, for a t-test, explain how that allows comparison of a dependent variable across two groups.

**Presentation of APA style results for Analysis** – a clear and concise presentation of the results of the statistical analysis. This should be in APA style, as will be discussed in lecture.

**Explanation of the Results in Plain Terms** - Explanation of what the results of the analysis means for further understanding of the relationship between the variables.

This assignment relates to learning outcomes 2, 3, and 4.

## **GRADING POLICY**

In-Class assignments are helpful tools to learn and are not intended as an assessment of your learning. As such, these assignments may be completed late as needed, with no late penalty. Deadlines for these assignments indicate when they should be completed to use them most effectively (the lecture that they are reinforcing), but all can be completed without penalty through 7/31.

Homework assignments submitted within one hour will not be considered late. Homework assignments can be submitted late within one week of the deadline (except HW10, which will be only be accepted until 7/31) with a 10 percent deduction for every day late. The first two homework assignments submitted late will be immune

The four quizzes are take-home quizzes and should be completed before the due date. You may ask for an extension for one quiz.

The Final Paper is due on 7/29 and can be submitted late through 7/31 with a 10 percent deduction for every day late.

I cannot accept any assignments later than 7/31 because the grading deadline is 8/1.

Please contact me with any extenuating circumstances.

I expect to grade all homework assignments with comments within three business days. In-Class assignments and the quizzes are all automatically graded, but please come to me with any questions you have about them.

## **STUDENT HOURS FOR COURSE**

UC Senate Regulation 760 specifies that one academic credit corresponds to a total of 30 hours of work for the median student over a quarter. A 5-unit course should therefore take 15 hours of your students' time each week for a 10 week course (30 hours per week for a 5 week course, like this one). Below is an estimate of the anticipated weekly distribution of the required hours:

7.5 hours of lecture  
11 hours of reading  
6 hours of homework  
5 hours of studying  
1.5 hours of quizzes  
30 hours total

## **INSTRUCTOR FEEDBACK**

I will provide direct comments and feedback on your assignments. [Learn how to access my comments in Canvas.](#) For major assignments, I will include a grading rubric that will be available to you prior to submitting your work. [Learn how to access grading rubrics for assignments.](#)

## **STUDENT FEEDBACK**

At the end of the quarter you will be asked to complete a Student Experience of Teaching survey for this course. SETs provide an opportunity for you to give valuable feedback on your learning that is honest and constructive. This anonymous feedback will help me consider modifications to the course that will help future students learn more effectively.

Please refer to [TLC's Guide to Giving Useful Feedback to Instructors](#).

## COURSE SCHEDULE

Week	Date	Activities	Readings	Assignments Due
One	6/24	Course Introduction; Levels of Measurement	Chapter 1	
	6/26	Measures of Central Tendency; Variance and Standard Deviation	Chapters 2 & 3	HW1
	6/28	SPSS and Visualizing Data; Quiz Review [ <b>Class Survey Opens</b> ]	Chapter 4	HW2
Two	7/1	Z-Scores; Probability	Chapter 8	Quiz 1
	7/3	Sampling Distributions; Hypothesis Testing; [ <b>Class Survey Closes</b> ]	Chapter 9	HW3
	7/5	Quiz Review		HW4
Three	7/8	Z-Tests and Confidence Intervals; T-Tests 1	Chapter 10	Quiz 2
	7/10	T-Tests 2 & 3	Chapters 11 & 12	HW5
	7/12	Writing Inferential Statistics; Quiz Review		HW6
Four	7/15	Research Design; Analysis of Variance 1	Chapter 13	Quiz 3
	7/17	Analysis of Variance 2 & 3	Chapter 14	HW7
	7/19	Choosing the Right Test and Writing the Final Paper; Quiz Review		HW8
Five	7/22	Regression		Quiz 4
	7/24	Correlation	Chapters 5, 15, 16	HW9
	7/26	Chi-Squared	Chapter 17	HW10
Final	7/29			Final Paper Due 7/29 by 5PM

### FINAL EXAM DATE AND TIME

There is no final exam for this course. Instead, a brief final paper will be due Monday, 7/29 by 5PM.

## ACCESSIBILITY

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 affiliate with the DRC. I encourage all students to benefit from learning more about DRC services to contact DRC by phone at 831-459-2089 or by email at [drc@ucsc.edu](mailto:drc@ucsc.edu). For students already affiliated, make sure that you have requested Academic Access Letters, where you intend to use accommodations. You can also request to meet privately with me during my office hours or by appointment, as soon as possible. I would like us to discuss how we can implement your accommodations in this course to ensure your access and full engagement in this course.

## TITLE IX/CARE ADVISORY

UC Santa Cruz is committed to providing a safe learning environment that is free of all forms of gender discrimination and sexual harassment, which are explicitly prohibited under Title IX. If you have experienced any form of sexual harassment, sexual assault, domestic violence, dating violence, or stalking, know that you are not alone. The Title IX Office, the Campus Advocacy, Resources & Education (CARE) office, and Counseling & Psychological Services (CAPS) are all resources that you can rely on for support.

Please be aware that if you tell me about a situation involving Title IX misconduct, I am required to share this information with the Title IX Coordinator. This reporting responsibility also applies to course TAs and tutors (as well to all UCSC employees who are not designated as “confidential” employees, which is a special designation granted to counselors and CARE advocates). Although I have to make that notification, you will control how your case will be handled, including whether or not you wish to pursue a formal complaint. The goal is to make sure that you are aware of the range of options available to you and that you have access to the resources you need.

Confidential resources are available through [CARE](#). Confidentiality means CARE advocates will not share any information with Title IX, the police, parents, or anyone else without explicit permission. CARE advocates are trained to support you in understanding your rights and options, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more. You can contact CARE at (831) 502-2273 or [care@ucsc.edu](mailto:care@ucsc.edu).

In addition to CARE, these resources are available to you:

- If you need help figuring out what resources you or someone else might need, visit the [Sexual Violence Prevention & Response \(SAFE\) website](#), which provides information and resources for different situations.
- [Counseling & Psychological Services \(CAPS\)](#) can provide confidential counseling support. Call them at (831) 459-2628.
- You can report gender discrimination and sexual harassment and violence directly to the University’s [Title IX Office](#) by calling (831) 459-2462 or by using their [online reporting tool](#).
- Reports to law enforcement can be made to the UC Police Department, (831) 459-2231 ext. 1.
- For emergencies, call 911.

## ACADEMIC INTEGRITY

All members of the UCSC community benefit from an environment of trust, honesty, fairness, respect, and responsibility. You are expected to present your own work and acknowledge the work of others in order to preserve the integrity of scholarship.

Academic integrity includes:

- Following exam rules
- Keeping what you know about an exam to yourself
- Submitting your own original work

Academic misconduct includes, but is not limited to, the following:

- Disclosing exam content during or after you have taken an exam
- Accessing exam materials without permission
- Copying/purchasing any material from another student, or from another source, that is submitted for grading as your own
- Plagiarism, including use of Internet material without proper citation
- Submitting your own work in one class that was completed for another class (self-plagiarism) without prior permission from the instructor.
- 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 Misconduct page](#) at the [Division of Undergraduate Education](#).

### A Word About Integrity

Integrity—other people's perception of your word as true—is one of the most valuable assets you can cultivate in life. Being attentive to integrity in academic settings allows others to trust that you have completed work for which you are taking credit. This is symbolic of the public trust from which you will benefit in your future occupation and activism after you graduate from UCSC. The creativity of your words, expression, understanding, and knowledge matters a great deal in your work as a sociologist, and it matters to me.

### AI Policy

I strongly encourage you to avoid using generative artificial intelligence to complete course assignments. It is unlikely that it would be helpful and could even be misleading or confusing. Even if you were successful using this to avoid working with course materials, this would likely impede your learning necessary skills for future courses.

## INTELLECTUAL PROPERTY

The materials in this course are the intellectual property of their creators. As a student, you have access to many of the materials in the course for the purpose of learning, engaging with your peers in the course, completing assignments, and so on. You have a moral and legal obligation to respect the rights of others by only using course materials for purposes associated with the course. For instance, you are not permitted to share, upload, stream, sell, republish, share the login information for, or otherwise disseminate any of the course materials, such as: video and audio files, assignment prompts, slides, notes, syllabus, simulations, datasets, discussion threads. Conversely, any materials created solely by you (for example, your videos, essays, images, audio files, annotations, notes) are your intellectual property and you may use them as you wish.



## **RELIGIOUS ACCOMMODATION**

UC Santa Cruz welcomes diversity of religious beliefs and practices, recognizing the contributions differing experiences and viewpoints can bring to the community. There may be times when an academic requirement conflicts with religious observances and practices. If that happens, students may request reasonable accommodation for religious practices. The instructor will review the situation in an effort to provide a reasonable accommodation without penalty. You should first discuss the conflict and your requested accommodation with your instructor early in the term. You or your instructor may also seek assistance from the [Dean of Students office](#).

## **ALL-GENDER RESTROOMS**

UC Santa Cruz is committed to the well-being of all students and cares about all students feeling safe and welcome, regardless of their gender identity, expression, and/or embodiment. The [Lionel Cantú Queer Center](#) has worked with students and campus staff to create more safe and accessible restrooms for transgender and genderqueer students, staff, faculty, alumni, and UCSC visitors. A [complete list of all-gender restrooms](#) on campus was compiled and is maintained by the Cantú Queer Center.

## **PRINCIPLES OF COMMUNITY**

The University of California, Santa Cruz expressly prohibits students from engaging in conduct constituting unlawful discrimination, harassment or bias. [More here](#). I am committed to providing an atmosphere for learning that respects diversity and supports inclusivity. We need to work together to build this community of learning. I ask all members of this class to:

- be open to and interested in the views of others
- consider the possibility that your views may change over the course of the term
- be aware that this course asks you to reconsider some “common sense” notions you may hold
- honor the unique life experiences of your colleagues
- appreciate the opportunity that we have to learn from each other
- listen to each other’s opinions and communicate in a respectful manner
- keep confidential discussions that the community has of a personal (or professional) nature
- ground your comments in the texts we are studying. Refer frequently to the texts and make them the focus of your questions, comments, and arguments. This is the single most effective way to ensure respectful discussion and to create a space where we are all learning together.

## **DIFFICULT CONVERSATIONS**

In our in-class and online discussions and dialogues, we will have the opportunity to explore challenging, high-stakes issues and increase our understanding of different perspectives. Our conversations may not always be easy. We sometimes will make mistakes in our speaking and our listening. Sometimes we will need patience or courage or imagination or any number of qualities in combination to engage our texts, our classmates, and our own ideas and experiences. We will always need respect for others. Thus, an important aim of our classroom interactions will be for us to increase our facility with

difficult conversations that arise inside issues of social justice, politics, economics, morality, religion, and other issues where reasonable people often hold diverse perspectives. This effort will ultimately deepen our understanding and allow us to make the most of being in a community with people of many backgrounds, experiences, and positions.

## **REPORT AN INCIDENT OF HATE OR BIAS**

The University of California, Santa Cruz is committed to maintaining an objective, civil, diverse and supportive community, free of coercion, bias, hate, intimidation, dehumanization or exploitation. The Hate/Bias Response Team is a group of administrators who support and guide students seeking assistance in determining how to handle a bias incident involving another student, a staff member, or a faculty member. To report an incident of hate or bias, please use the following form: [Hate/Bias Report Form](#).

## **STUDENT SERVICES**

### **Counseling and Psychological Services**

Many students at UC Santa Cruz face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing. The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings.

### **Campus Mobile Crisis Team**

If you are concerned about yourself or someone around you and feel they may be having a behavioral health crisis, do not hesitate to call our team. Behavioral Health concerns can include mental health or substance use related situations where you or someone around you may be a danger to self or others. Dial [831-502-9988](tel:831-502-9988) to reach the team.

### **Reporting and Support Services**

A resource to help students, faculty, staff and others report acts of bias as well as discrimination and harassment.

### **Student Success and Engagement Hub**

The Division of Student Success provides campus-wide coordination and leadership for student success programs and activities across departments, divisions, the colleges, and administrative units.

### **Tutoring and Learning Support**

At Learning Support Services (LSS), undergraduate students build a strong foundation for success and cultivate a sense of belonging in our Community of Learners. LSS partners with faculty and staff to advance educational equity by designing inclusive learning environments in Modified Supplemental Instruction, Small Group Tutoring, and Writing Support. When students fully engage in our programs, they gain transformative experiences that empower them at the university and beyond.

### **Slug Support Program**

College can be a challenging time for students and during times of stress it is not always easy to find the help you need. Slug Support can give help with everything from basic

needs (housing, food, or financial insecurity) to getting the technology you need during remote instruction.

To get started with SLUG Support, please contact the [Dean of Students](#) Office at 831-459-4446 or you may send us an email at [deanofstudents@ucsc.edu](mailto:deanofstudents@ucsc.edu).

### **[Slug Help/Technology](#)**

The ITS Support Center is your single point of contact for all issues, problems or questions related to technology services and computing at UC Santa Cruz. To get technological help, simply email [help@ucsc.edu](mailto:help@ucsc.edu).

### **[On-Campus Emergency Contacts](#)**

For all other help and support, including the health center and emergency services, Click here to go to UCSC's [Emergency Services](#) page. **Always dial 9-1-1 in the case of an emergency.**