



Cognition: Fundamental Theories
University of California, Santa Cruz
PSYC 20A-01

Summer Session B (July 31 – September 1, 2023)



Lecture:

Physical Sciences 140
Tuesdays and Thursdays, 1 – 4:30pm

Instructor:

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Office Hours: Tuesdays, 11am – 12pm, SS2 206 or by appointment

A Note About Office Hours: It's okay to need help! My goal in teaching this course is to help support your learning, and office hours can be a wonderful resource to move us toward this goal. I encourage you to visit my office hours early and often!

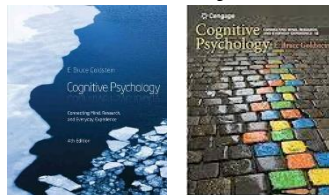
Learning Objectives:

1. Identify the different domains that cognitive psychologists study and the methods that they use to do so.
2. Develop a sense of curiosity toward cognitive psychology by considering the questions underlying the experiments that we discuss in class and examining the methods that were used to answer those questions.
3. Identify the questions that you think are interesting in cognitive psychology.
4. Identify the ways in which empirical research findings apply to everyday life.
5. Engage with the scientific community broadly and our learning community specifically by learning (a) how to interpret scientific evidence as a critical consumer and (b) how to communicate those findings clearly to others.
6. Consider cognitive psychology as a potential career path.

Textbook:

Cognitive Psychology: Connecting Mind, Research, and Everyday Experience (2018)
by E. Bruce Goldstein, 5th Edition. ISBN-10: 1337408271

*This is the 4th Edition of this textbook. Either the 4th or the 5th Editions will be fine for this course, the 4th Edition just tends to be available for a lower price.



Format:

Class will consist of lecture and group discussions/ activities. We have the good fortune of being a relatively small community of learners, and I hope that we can take full advantage of this!

Attendance Policy: Although I will not be taking attendance in lecture, I do ask that you plan to attend every class. I respect that students balance many roles and responsibilities, but I also know that summer classes move extremely quickly. Consistent attendance will benefit you greatly in that you will (a) hear the lecture, (b) have the opportunity to ask questions and hear the questions that others ask, and (c) engage with in-class activities that I have selected to help support our Learning Objectives. Additionally, Pretests will only be given during class-time (with no opportunity to make up later), so missing a lecture will generally mean missing a Pretest.

Participation: Research suggests that active participation in class is an excellent way to learn (Chi & Wylie, 2014; Prince, 2004). Participation in this course can look different depending on who you are! Here are some examples of ways you might participate:

1. Read the material that has been assigned for that day.
2. Raise your hand and ask a question or share a comment in class.
 - a. I encourage you to think deeply about the course content and demonstrate that effort by asking questions or sharing insightful comments with our community of learners
3. Contribute to small-group discussions or activities.
 - a. I have designed this course in a way that asks you to learn and engage with course content together – let’s help support each other’s learning!
4. Complete the Exit Poll.
 - a. At the end of every class, I will ask you to complete an Exit Poll. This Poll works for you and me in that you can communicate to me about how well you feel you’re understanding the material from that day, and specify a particular question that you may feel stuck on. This is valuable information for me as an instructor – it can help guide future presentations and explanations, and it also lets me know if there are things that might need to be clarified.
5. Come to office hours (see above).
6. Send me an email with an article that reminds you of the course material.
 - a. I understand that some people may not feel very comfortable speaking up in class, and I want to acknowledge that we all engage with the material differently. Taking concepts that we cover in class and digging into the empirical literature on the topic can be a great way to learn. Feel free to send me a relevant article that you found exciting!

A Note about Participation: Sometimes things come up that make it difficult to participate in class – if you find yourself in this position, I encourage you to be transparent about that with me. I’d like to find a way to work with you to make sure that you are able to get as much out of this course as possible.

Requirements and Evaluation

Research Question (5% each, up to 20%):

You will submit on Canvas a research question that was inspired by the reading or lecture. **There will be 5 opportunities to do this (every Thursday), and the lowest score will be dropped (so if you miss 1 Research Question, no problem!).** These will be **due before lecture on the day they are due.** This Research Question should be around 1.5 double-spaced page in length. This does not need to be particularly formal, but it should convey your point clearly and concisely. I want to know:

What is the question that you are trying to answer?

Why is that question interesting or important?

What was it *specifically* from reading or lecture that interested you in this question?

*You can miss 1 Research Question assignment with no penalty to your grade.

The Research Question is designed to support Learning Objectives #1 – 4.

Pretests (0.71% each, up to 5%):

Research suggests that pretesting can be an effective way to help learn (Little & Bjork, 2016), especially when it is used with feedback (Butler & Roediger, 2008) and in a low-stakes way (see Dobson, 2008). In **8 out of 10 classes** (the first 8 classes) you will complete a short (~ 4 - 8 question, multiple-choice) pretest covering content from the *next* lecture. I am setting aside time during class to complete these pretests, so they will be due at that time (with no opportunity to make them up later). **The lowest score will be dropped (so if you miss 1 pretest, no problem!).** The pretests will be **scored for completion** rather than based on the number of correct answers. I've made this decision specifically to encourage you to use them as pretests – missing answers isn't harmful to your grade in any way. These are designed to be learning experiences in and of themselves (and I'll give you the correct answers before we leave for the day), and the pretests will only be helpful to you in the long term.

Pretests are designed to support Learning Objective #1.

Exams (55%):

There will be 2 non-cumulative mid-term exams (15% of the final grade, each), and 1 cumulative final exam (25% of the final grade). Exams will be multiple-choice (Scantron) and cover information from **both lectures and readings**. The final exam is cumulative to provide one last learning experience for you all – testing is a valuable learning tool, and the more you practice retrieving this information from memory the better! See the Course Schedule below for exact dates.

Exams are designed to support Learning Objective #1.

Project Proposal (20%):

The project proposal is **due by 11:59pm on the last day of class, 8/31/23**. You will select one study (from a sample of papers that I have uploaded to Canvas) to read and design a follow-up study for. The project proposal (20%) will include **two core pieces**.

The first is a description of a study (What was the research question? What were the methods? What were the results?). There's no such thing as a perfect study, so there will be some lingering questions from that study – what is one question that you would be interested in following up on?

Project Proposal (continued):

The **second** part of the project, the proposal, is in direct response to those lingering questions. Building upon the original study, what question might you ask that would provide more knowledge for our field? You will describe the question, the methods that you would recommend to answer the question, and possible results that you might see if you actually ran the study. You will also explain what those findings might mean and consider what it would mean if the results turned out differently. **More information can be found on Canvas.**

We will have some designated time in class to work on these proposals (Work Group time). During Work Group time, you will have the opportunity to work with and discuss projects with others who are following up on the same paper. While this is not a “group project” – everyone will submit their own proposal for their own study idea – I want you to benefit from being able to brainstorm with others. Although we will have some amount of time in class to work on these Proposals, you will almost certainly want to commit time outside of class to this project.

The Project Proposal is designed to support Learning Objectives #1 – 6.

Extra Credit (up to 3%):

You can earn up to 3% extra credit by participating psychology research studies through Sona. This can be a really fun and informative experience for you as a participant, and it also helps our researchers out a lot. As undergraduate students here at UCSC, your participation in our research studies contributes to the broader psychological literature and helps us learn more about the mind! Some studies are quite short and others are rather long – every hour of research participation that you complete will result in 1% of extra credit. Note that this must be completed by 5pm on Friday the last week of classes (9/1/23).



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 credit 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. Please 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 **three (3) papers (1% each)**. If you are doing the alternative written assignments, they must be emailed directly to me 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). You should select one topic that we have covered in class, summarize it, and describe how the concept has applied to you in your own life. I want to hear how you can apply theoretical knowledge to daily life!

Grading Scale:

A	92.50+
A-	90.00-92.49
B+	87.50-89.99
B	82.50-87.49
B-	80.00-82.49
C+	77.50-79.99
C	70.00-77.49
D	60.00-69.99
F	Below 60.00



Late Work and Extensions:

I certainly understand that sometimes things come up in life. I have built the system in a way that gives you some amount of flexibility in that you'll pick which 4 out of 5 Research Questions and which 7 out of 8 Pretests you'll complete. So don't worry if you miss the deadline for any of those, that missed assignment will just count as one of your "skips"! There will be no opportunity to make up Research Questions or Pretests, outside of the one "skip".

Academic Support Resources:

Summer courses move quickly, and it is very important to me that you feel supported in this quick pace. Please consider if you would benefit from any of the following resources:














1. [Academic Excellence Program \(ACE\)](#)

2. [Modified Supplement Instruction \(MSI\)](#)
3. [Learning Support Services \(LSS\)](#)
4. [Writing Center](#)

Academic Integrity:

This class is a community of learners. You are asked to honor, respect, and facilitate the learning of all students, which includes participating in constructive discussion and inquiry, and cooperating and collaborating with others. It is assumed that all students are familiar with UCSC's policy on academic honesty and integrity (available at: http://www.ucsc.edu/academics/academic_integrity/undergraduate_students/). This is a policy the class will strictly adhere to. Cheating on exams will result in failure and dismissal from the class.

Schedule

<u>Week</u>	<u>Class</u>	<u>Date</u>	<u>Topic (Reading)</u>		<u>Written Work Due Today (Before Class)</u>
1	1	Tu, 8/1/23	Intro. To the Course Foundations of Cognitive Psychology (Ch. 1)		
	2	Th, 8/3/23	Your Brain and Psychology (Ch. 2) Perception (Ch. 3)	 	RQ #1
2	3	Tu, 8/8/23	Perception (Ch. 3) Mental Imagery (Ch. 10)		
	4	Th, 8/10/23	EXAM #1 Attention (Ch. 4)	 	RQ #2
3	5	Tu, 8/15/23	Short-term & Working Memory (Ch. 5) Long Term Memory (Ch. 6, 7)		
	6	Th, 8/17/23	Memory Failures (Ch. 8) Language (Ch. 11)	 	RQ #3
4	7	Tu, 8/22/23	EXAM #2 Knowledge & Semantics (Ch. 9)		
	8	Th, 8/24/23	Decision-Making (Ch. 13) Reasoning (Ch. 12)	 	RQ #4
5	9	Tu, 8/29/23	Creativity & Problem-Solving (Ch. 12) Course Review		
	10	Th, 8/31/23	OPTIONAL Work/ Study Time (1:30 – 2:15pm) FINAL EXAM (2:30pm)		RQ #5 (before class); Proposal (11:59pm)

RQ #1 Topic: Looking through the syllabus, what kinds of questions are you curious about?
RQ #2 Topic: Lectures 1-3 or Chapters 1-3, or 10 **RQ #3 Topic:** Lectures 4-5 or Chapters 4-7
RQ #4 Topic: Lectures 6-7 or Chapters 8-9, or 11 **RQ #5 Topic:** Lectures 8-9 or Chapters 12-13

References

- Butler, A. C., & Roediger, H. L. (2008). Feedback enhances the positive effects and reduces the negative effects of multiple-choice testing. *Memory & cognition*, 36(3), 604-616.
- Chi, M. T., & Wylie, R. (2014). The ICAP framework: Linking cognitive engagement to active learning outcomes. *Educational psychologist*, 49(4), 219-243.
- Dobson, J. L. (2008). The use of formative online quizzes to enhance class preparation and scores on summative exams. *Advances in Physiology Education*, 32(4), 297-302.
- Little, J. L., & Bjork, E. L. (2016). Multiple-choice pretesting potentiates learning of related information. *Memory & Cognition*, 44, 1085-1101.
- Marcell, M. (2008). Effectiveness of regular online quizzing in increasing class participation and preparation. *International Journal for the Scholarship of Teaching and Learning*, 2(1), n1.
- Prince, M. (2004). Does active learning work? A review of the research. *Journal of engineering education*, 93(3), 223-231.