

PSY 610: Advanced Cognitive Neuroscience

Spring 2017, 35207

Mon & Wed 10-11:50am, LISB 317 (5/22 & 5/24 LISB 217)

Instructors:

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Dasa's office hours: Tu 4-5pm, Th 12:45-1:45pm

Ulrich's by appointment



Content: Welcome to PSY 610 Advanced Cognitive Neuroscience. The goal of this class is explore how the brain gives rise to human cognition. As we cannot cover the whole area, we opted for a broad survey of the field, with a mixture of foundational and hot topics. By the end of the term, you should become familiar current methods and topics so you can become an educated “consumer” of cognitive neuroscience research in your and other domains.

Format: This class will consist of a combination of assigned readings, student presentations, class discussions, and lectures. All students will read assigned articles before each class, prepare questions, and participate in class discussions. Each student will present one or two articles in class during the term. Lectures are designed to clarify and complement readings rather than being comprehensive. As the background knowledge of students entering the class varies widely, please do not hesitate to ask questions of any level throughout the class.

Grade: The grade will consist of Exams (40%), Participation (30%) and Final paper (30%).

Exams (40%): Two in-class midterm exams, each worth 20% of your grade. Short/medium answer format.

Participation (30%): While background knowledge will vary widely in the class, everyone is expected to come to class ready to learn something new and contribute their perspective. To prepare for each class, read the assigned readings, post at least two questions or comments about the readings (or answer other students' comments) to Canvas by midnight the night before the class. In the classroom, you are expected to actively participate in class discussions. In addition, each student will present and lead a discussion of an assigned reading in the class (about 15 minutes), once or twice per term. When you present, you are expected to do some background reading to help you explain the context and methods/results to your classmates. Participation—consisting of reading, online discussion, in class discussion, and presentation(s)—is collectively worth 30% of your grade.

Final project (30%): We would like you to ponder how cognitive neuroscience tools can help us answer novel questions. We would also like to give you an opportunity to practice cognitive neuroscience reasoning and concise formulation of ideas. To this end, you will write a short grant proposal for a follow-up study of one of the readings, or cognitive neuroscience project of your choice. You should venture a little from your immediate area. However, tying the class material to your own research is encouraged. A 1-1.5 page draft (worth 5% of your grade) with a brief motivation and research design will be due in Week 7 (5/17). If you are proposing something close to your lab's research, please specify in the Draft how the current proposal differs. On the Monday of Week 10, everyone will briefly introduce his or her project to the class (3-5 minutes, no powerpoint, whiteboard ok, 5% of your grade). The final paper (worth 20%) will be due by Monday midnight of the Finals week (6/12), and should consist of motivation, detailed design, analysis strategy, expected outcomes, and possible pitfalls/alternative strategies. The length of the proposal should be 4-5 single-spaced pages (0.5—1 inch margins, 11-12pt Helvetica or Arial font). You have to be convincing, we should get excited and want to fund your proposed research!

Workload: The UO specifies that for a 4-credit graduate class, your workload should be about 160 hours throughout term. You are expected to be highly active in the class. Please take your time reading and thinking about the assigned papers each week. Think about how you can relate what you learned in the class to your own research or to your life. Or just nurture your curiosity about the mind and brain. Savor one of your last formal learning experiences.

Tentative class schedule, subject to change. (last revised 03/22/2017)

Dates of the exams and due dates will not change unless absolutely necessary.

Week 1	4/3/17	No class
	4/5/17	History of Cog Neuro and Primer on Brain Anatomy
Week 2	4/10/17	Neural code and how to access it (Matt Smear)
	4/12/17	Perceptual awareness
Week 3	4/17/17	Context effects in perception (Paul Dassonville)
	4/19/17	Shape & space perception (Margaret Sereno)
Week 4	4/24/17	Attention
	4/26/17	Mara Mather (prep for Attneave lecture)
Week 5	5/1/17	Awareness/Consciousness
	5/3/17	Midterm I (in class exam)
Week 6	5/8/17	Working memory
	5/10/17	Long-term memory
Week 7	5/15/17	Interference & forgetting (Brice Kuhl)
	5/17/17	Concept formation Project draft due
Week 8	5/22/17	Cognitive control <i>LISB 217</i>
	5/24/17	Neuroeconomics <i>LISB 217</i>
Week 9	5/29/17	No class (Memorial day)
	5/31/17	Default network/Resting state
Week 10	6/5/17	Large scale models of cognition Project elevator speech
	6/7/17	Midterm II (in class exam)
Final	6/12/17	Final project due