PSY 610: Advanced Cognitive Neuroscience

Spring 2018, 35122
Mon & Wed 10-11:50am, LISB 317
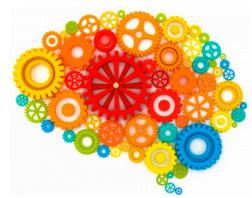
Instructors:
Ulrich Mayr, mayr@uoregon.edu, LISB 328
Dasa Zeithamova Demircan, dasa@uoregon.edu, LISB 325
    Dasa's office hours: Tu/Th 2-3pm & by appointment
    Ulrich's by appointment

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 UO research, foundational topics 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 Quizzes (40%), Participation (20%) and Final paper (40%).

Exams (40%): Four online quizzes, each worth 10% of your grade. Short/medium answer format.

Participation (20%): 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 20% of your grade.

Final project (40%): 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 research proposal for a 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. You need to pick a topic by the end of Week 4. In Week 6, you will submit 1-page draft with a brief motivation and research design, and in class in Week 7 you will present an elevator speech (3 minutes, no powerpoint, whiteboard ok) about what you plan to write. If you are proposing something close to your lab's research, please specify in the Draft how the current proposal differs. Semi-ultimate draft will be due by the end of Week 8, 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). By the end of Week 9, you will comment on two other proposals assigned to you, using rubrics that will be used for the final project evaluations. Week 10 will be spent on presentations and discussion of the proposals. The final paper will be due by Tuesday midnight of the Finals week (6/12). 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. Nurture your curiosity about the mind and brain.

Tentative class schedule, subject to change. (last revised 04/02/2018)
Dates of the quizzes and due dates will not change unless absolutely necessary.

Week 1	4/2	Overview & History	
	4/4	Neural code (Matt Smear)	
Week 2	4/9	Methods	
	4/11	More methods/ Human Neuroanatomy	
Week 3	4/16	Context effects in perception (Paul Dassonville)	**Quiz 1**
	4/18	Shape & space perception (Margaret Sereno)	
Week 4	4/23	Attention	**Project topic due**
	4/25	Working memory	
Week 5	4/30	Consciousness/Awareness	**Quiz 2**
	5/2	Sabine Kastner (prep for Attneave lecture)	
Week 6	5/7	Long-term memory	**1 page draft due**
	5/9	Memory updating/Memory integration	
Week 7	5/14	Interference & forgetting (Brice Kuhl)	**Quiz 3**
	5/16	*Project proposals elevator speech*	
Week 8	5/21	Cognitive control	**Semi-final draft due**
	5/23	Neuroeconomics	
Week 9	**5/28**	**No class (Memorial day)**	**Peer comments due** **Quiz 4**
	5/30	Resting state OR Large scale models	
Week 10	6/4	*Project proposal presentations*	
	6/6	*Project proposal presentations*	
Final	**6/12/17**		**Final project due**