September 16, 2015

Lecture Instructor: Prof. Jordan Taylor  
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Laboratory Instructor: Prof. Justin Jungé  
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AI: Nick Rohrbaugh  
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Lecture meeting time: Monday and Wednesday 3:30-4:20pm  
Lecture meeting location: Princeton Neuroscience Institute A32

Laboratory meeting times: Wednesdays 7:30-10:20pm (B02), Thursdays 1:30-4:20pm (B03), Thursdays 7:30-10:20pm (B04), Fridays 1:30-4:20pm (B05)  
Laboratory meeting location: Princeton Neuroscience Institute A03

Course website: https://blackboard.princeton.edu/pucourse/PSY255_F2015

Registrar description: The course will survey the major themes and experimental findings of Cognitive Psychology. We will address the question of how scientists probe the nature and underlying structure of human thought. Topics covered include attention, perception, memory, language, thinking, and decision-making. The laboratory component of the course will provide hands-on experience in conducting experimental research in the field of Cognitive Psychology

Format: Each week we'll tackle a different research field in Cognitive Psychology. Lectures will focus on fundamental principles garnered through classic experiments in Cognitive Psychology. Labs will develop research skills using demos and hands-on experience.
Readings: You will be responsible for 1-2 readings per week, which provide a review of the weekly topic. Use these readings as a supplement to the lecture.

Evaluation:

Midterm (25%) and Final Exam (25%): The midterm and final exam will cover all lectures, readings, and laboratories. It will feature multiple choice questions, short answer questions, and a longer format question(s). The longer format questions will focus on experiment design. The midterm will occur during class on October 28, 2015. The final will occur during finals “week,” sometime between January 13-23, 2016.

Laboratory Homework & Projects (20%): Every lab will have homework, often multiple assignments. Each student has 7 days to complete homework, which is assigned in lab and due by the start of your next lab meeting. Plan to spend 10-12 hours/week on lab homework. Assignments will receive grades of 0-10 points, typically returned 2 weeks after submission, or sooner. No late homework is accepted. 1 minute after lab begins, unsubmitted assignments from the previous week will receive 0 points. Plan to submit assignments 24 hours before relevant deadlines. Many labs will build on the previous week’s homework and some answers will be reviewed, so late work can not be accepted.

Participation (5%): Labs involve lots of discussion and participation, and your contributions are an important part of every lab. Simply showing up avoids penalties but does not earn participation points. Be actively engaged in discussions and projects.

Final Project (25%): Labs successively build up a set of skills that enable you to conduct research. For your final project you will work in groups to conduct an original research study, including experimental design, implementation, data collection, data analysis, and writing a research report. Detailed requirements are provided in Week 6.

Missed class policy: Attendance in lecture is recommended, while laboratory is mandatory. Missing a single lab will result in -5% from your final course grade. If you miss a lab because of an excused absence (e.g., medical emergency), then contact your lab instructor to arrange to attend another lab section. You will also need to provide official substantiation for the absence.

Research Participation: Students in this course must complete a research participation assignment. There are two options: students may participate in psychology experiments for course credit, or may opt to complete the alternative research writing assignment.

Four hours of experimental participation are assigned to any student in this course who has not already completed 8 hours of participation for other psychology courses in the past.
Students will have access to sign up for experiments beginning on September 16, 2015 and must complete the required number of sessions by the last day of Reading Period in order to pass the course. To be clear: experimental participation must be completed satisfactorily by January 12, 2016 (Dean’s date).

As an alternative to research participation, students may complete the research writing assignment. Each paper is worth .5hrs of credit. Eight papers would be required if you choose not to participate in any experiments. Please see the Research Assignment document posted on Blackboard for further details.

All questions pertaining to this assignment should be directed to RoseMarie Stevenson (rosemari@princeton.edu).
Weekly Schedule:

Week 1
Lecture: Historical Foundations  
Nativism, Empiricism, Structuralism, Behaviorism, Information Processing  
Lab: No Lab  
September 16

Week 2
Lecture: Learning  
Classical and Operant Conditioning, Unsupervised and Supervised Learning  
Lab: Introduction to Experimental Psychology  
September 21, 23

Week 3
Lecture: Perception  
Direct perception, Constructivism, Bayesian Combination  
Lab: Face Perception  
September 28, 30

Week 4
Lecture: Attention  
Orienting, Search, Selective Attention, Bottom-up vs. Top-down Attention  
Lab: Attention  
October 5, 7

Week 5
Lecture: Working Memory and Intelligence  
Capacity Limitations, Primacy and Recency Effects, Memory Models  
Lab: Working Memory  
October 12, 14

Week 6
Lecture: Long-term Memory  
Levels of Processing, Forgetting, Savings in Relearning, Context Dependency  
Lab: First Project Presentations  
October 19, 21

Week 7
Lecture: Exam Week  
Monday (Oct. 26) will be review and Wednesday (Oct. 28) will be an in class exam.  
Lab: No Lab  
October 26, 28

Week 8
Lecture: Cognitive Control  
Planning, Task Management, Attention and Selection, Monitoring  
November 9, 11
Lab: Cognitive Control  

Week 9  
Lecture: Knowledge, Concepts, and Categories  November 16, 18  
Feature-based, Prototypes, Exemplars, Category Learning, Representations  
Lab: Final Project Proposal Presentations  November 19, 20, 21

Week 10  
Lecture: Consciousness  November 23  
Lab: No Lab  November 25, 26, 27

Week 11  
Lecture: Judgment and Decision-Making  November 30, December 2  
*Expected Utility, Biases and Heuristics, Prospect Theory, Temporal Discounting*  
Lab: Project  December 2, 3, 4

Week 12  
Language  December 7, 9  
*Phonology, Semantics, Transformational Grammar, Constructions, Evolution*  
Lab: Project  December 9, 10, 11

Week 13  
Lecture: Embodied Cognition  December 14, 16  
*Motor Systems, Grounded Cognition, Action Perception*  
Lab: Final Project Presentations