

Psychology S1480D
Experimental Psychology: Perception and Attention
Columbia University
Summer Session I, 2005

Course Description: This course combines lectures and practical lab experience aimed at explaining the basics of perception, attention, and the relation between the two. Perception refers to the mental processing of the information that we gain from our senses. Attention is a broad term that includes such things as the influence of our expectations and how we allocate our limited mental resources. However, these two aspects of mental processing are inter-dependent. For example, perception can influence attention, such as when we turn our heads towards a loud noise, and attention can affect perception, such as when we search for a familiar face among a crowd of people. The lectures and reading will cover a broad range of topics, while in the lab sections students will design, run, analyze and report several core experiments in the field.

Lecture: M,W - 10:45 - 12:50, 200B

Lab: T,Th - 10:45 - 12:50, 200B

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Texts:

Coran, S, Ward, L M., & Enns, J. (2003). *Sensation and Perception (6th edition)*. Publisher: Jossey-Bass, an Imprint of Wiley
Pashler, H. (1998). *The Psychology of Attention*. MIT Press

Evaluation: There will be two exams, each worth thirty percent of the grade. Exams will cover material from lectures, labs, and assigned readings, from either the first or second half of the course. Exams will consist primarily of multiple choice and short answer questions (sentence or short paragraph). Lab assignments will constitute the remaining forty percent of the grade. This will include written project reports, attendance, and evaluations of your contributions in the lab sessions.

Absence & Make-up Exams:

An unexcused absence from any of the exams will result in a grade of F on that exam. To be excused from an exam you must personally notify one of the instructors before the exam and must present some evidence certifying the

legitimacy of your absence (e.g., doctor's note). Makeup exams will typically, but not necessarily involve longer, integrative essay questions. Late lab reports will be assigned a penalty of 5 points (out of 100) for every day the report is handed in past the due date, unless you present a legitimate excuse to one of the instructors before the report is due.

Class Schedule and Required Readings

Week 1

- May 23 Lecture 1: Introduction, Definitions, & Discussion
Instructor: Brian Rakitin
Reading: Chapter 1 Coran, et al., Pashler.
- May 24 Lab 1: Elementary Statistics
Instructor: Anja Soldan
- May 25 Lecture 2: Psychophysics & Signal Detection
Instructor: Anja Soldan
Reading: Chapter 2 Coran, et al.
- May 26 Lab 2: Elementary Statistics (Cont.) & Scientific Writing
Instructor: Brian Rakitin

Week 2

- May 30 Memorial Day (class rescheduled to June 3)
- May 31 Lab 3: Magnitude Estimation 1
Instructor: Brian Rakitin
- June 1 Lecture 3: Basic Visual Perception
Instructor: Anja Soldan
Reading: Coren, et al., Chapters 3 & 7
- June 2 Lab 4: Magnitude Estimation 2 & Analysis
Instructor: Brian Rakitin
- June 3 Lecture 4: Other Perceptual Modalities
Instructor: Brian Rakitin
Reading: Coren, et al., Chapters 4, 5, 6

Week 3

- June 6 Lecture 5: Objects & Scenes
Instructor: Brian Rakitin
Reading: Coren, et al., Chapter 9
Deadline: Magnitude Estimation Lab Report Due
- June 7 Lab 5: Experimental Design 1
Instructor: Brian Rakitin
- June 8 Lecture 6: Space & Time
Instructor: Brian Rakitin
Reading: Coren, et al., Chapters 8 & 10
- June 9 **Exam 1**

Instructor: Brian Rakitin

Week 4

- June 13 Lecture 7: Attention, Memory & Action
Instructor: Brian Rakitin
Reading: Coren, et al., Chapter 12, Pashler, Chapter 2
- June 14 Lab 6: Mental Rotation 1
Instructor: Anja Soldan
- June 15 Lecture 8: Visual Attention & Eye Movements
Instructor: Anja Soldan
Reading: Pashler, Chapter 3
- June 16 Lab 7: Mental Rotation 2 – Data Analysis
Instructor: Anja Soldan

Week 5

- June 20 Lecture 9: Control of Visual Attention
Instructor: Anja Soldan
Reading: Pashler, Chapter 6
Deadline: Mental Rotation Lab Report Due
- June 21 Lab 8: : Visual Search 1
Instructor: Anja Soldan
- June 22 Lecture 10: Neuroanatomy & Neuropsychology of Perception
Instructor: Anja Soldan
Reading: TBA
- June 23 Lab 9: Visual Search 2: Data Analysis

Week 6

- June 27 Lecture 11: Neuropsychology of Attention & Consciousness
Instructor: Anja Soldan
Reading: Coren, et al., Chapter 13, Pashler, Chapter 8
Deadline: Visual Search Lab Report Due
- June 28 Lab 10: Experimental Design 2 & Hypothesis Testing
Instructor: Brian Rakitin
- June 29 Lecture 12: Processing Limits & Expectation
Instructor: Brian Rakitin
Reading: Pashler Chapter 4 & 5
- June 30 **Exam 2**