

Psychology 64

Laboratory Studies of Sensory Processes

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Synopsis: All information about the world around is acquired through our senses. This course is concerned with how are senses operate, and how perceptual scientists study the operation and accuracy of our senses using objective, scientific methods. General principles of sensory processing will be revealed in a series of laboratory experiments that the students will perform. The results and their interpretations will be considered in lecture/discussion sessions.

Class Meetings: This course meets on Tuesdays and Thursdays from 10 AM to 12 Noon. In general, we will have a lecture presentation each Tuesday and a laboratory experiment on Thursdays.

Readings: There is no textbook for this course. Rather, a series of articles will be provided in electronic format.

Evaluation: Student's progress and mastery of the course material will be based upon two measures of performance. The first is a series of laboratory research reports based on the experiments we perform. The second measure will be a midterm and a (non-cumulative) final exam. Half of the course grade will be determined by the laboratory reports, 25% will be determined by the midterm, and the remaining 25 % will be determined by the final examination.

Tentative Weekly Schedule of Topics

Week 1: The evolution and anatomy of the eye

Laboratory: Dissection of a cow's eye

Week 2: The retinal image and the optical quality of the human eye

Laboratory: Entopic images (images of objects inside your eye) & "Retina prints"

Week 3: Spatio-Temporal properties of vision

Laboratory: Temporal resolution of chromatic and achromatic mechanisms revealed by birefringent cellophane

Week 4: The Detection of Visual Change

Laboratory: Change Blindness and Change Detection

Week 5: Review for Mid-term examination & submit first 4 laboratory reports

NO LAB THIS WEEK

Week 6: The Perceptual Constancies

Laboratory: The Moon Illusion and Emmert's Law of Afterimages

Week 7: Visuo-motor Coordination

Laboratory: Adaptation to Optical Distortions (Prism adaptation)

Week 8: Vestibular-Visual interactions

Laboratory: Post-rotary and Caloric nystagmus

Week 9: Prepare last 3 laboratory reports

Week 10: Review of Final Examination