Spring 2019  
Lecture: MWF 9-10a, Leidy Labs 10

Prerequisites: PSCY 1, BIBB 109, VLST 101, or COGS 001

Synopsis:  
An introduction to the scientific study of vision, with an emphasis on the biological substrate and its relation to behavior. Topics will typically include physiological optics, transduction of light, visual thresholds, color vision, anatomy and physiology of the visual pathways, and the cognitive neuroscience of vision.

Instructor:
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Course Website (CANVAS):
The course has a dedicated CANVAS site. Lecture slides, homework assignments, and reading assignments/material will be posted there. Also, check the site frequently for posted announcements and Q & As on the discussion board. In general, this is the place to go first if you have any question or are in need of any information regarding the course.

Requirements:
Homework 1-3 posted on canvas  
Midterm Exam 1 February 15 (in class)  
Midterm Exam 2 March 29 (in class)  
Midterm Exam 3 April 26 (in class)  
Final Exam (cumulative) May 13, 12-2p

Policy on homework assignments:
Homework assignments are essential for a proper understanding of the material. There will be three homework assignments, meant in part as preparation for each midterm exam. Assignments and due dates will be posted on CANVAS. You must turn in your solutions latest on the due date at the end of the lecture (hardcopies ONLY!). The assignments will be graded and the solution will be posted on CANVAS the weekend after the due date. Homework grade contribute to your final grade (see below).
Late turn-ins will be penalized. Hand-written solutions will not be accepted (graphs can be hand-drawn though).

Policy on exams:
Each of the three midterms will be designed to be completed in 50 minutes. However, you will have the option of arriving as early as 8.30a to start your exam if you wish to have extra time. To prevent the “passing along” of answers, you must arrive at the exam by 9:15a and you are required to stay until at least 9:15a.

Exams are closed book. No tools etc. allowed.

Computation of the final grade:
Your final grade will be computed as a weighted average of the average-score of the best two (out of the three) midterms (1/2), the score of the final exam (1/3), and the homework assignments (1/6).

There will be no makeup midterm exams as only the two best midterm scores count. In the unlikely case that a student has two or more qualified reasons of absence, only one, respectively none of the midterm scores count toward the final grade, and the grade weighing (above) is changed accordingly. Qualified reasons of absences are a) a medical problem that does not permit taking the exam (note from dean’s office or doctor required), b) a family emergency that takes you out of town (note from parents required), or c) an out of town trip connected with a UPenn sponsored activity (e.g. team sports, note from coach/activity sponsor required.)

Tentative Topic List:
Design of the human eye.
Light, image formation, optics.
Clinical issues in visual neuroscience.
Visual adaptation.
Spatial resolution and the contrast sensitivity function.
Overview of retinal anatomy, phototransduction, absolute threshold.
Color vision and trichromacy.
Eye movements, depth perception and binocularity.
Motion perception.
Object recognition and face processing.
Visual cognition, visual attention, and visual memory.
Computational processes underlying visual perception and cognition.