

Sensation and Perception
Psychology 233
Spring 2015
8:30 a.m. – 9:50 a.m. Tuesday and Thursday
Olin 203

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Office hours: Tuesday 10:00 – 11:00 a.m., Wednesday 9:00 a.m. – 10:00 p.m., or by appointment

COURSE DESCRIPTION

As we read a line of text our eyes make a series of short, rapid movements (saccades) followed by brief pauses (fixations). Yet, we experience reading as a continuous flow of information. Reading reflects a fundamental question for the study of sensation and perception: how does our brain construct a stable representation of the world when provided with ever changing sensory information? This course will begin to address this, and related questions, by studying the anatomy and physiology of sensory structures that receive stimulus information, with a particular emphasis on the visual and auditory systems. Next, we will move to the mental processes that turn this raw sensory information into our perception of the world. Finally, we will discuss how the same sensory information can often lead to very different perceptions across individuals and cultures. Readings will consist of a combination of textbook chapters and empirical articles.

REQUIRED READING MATERIAL

+++Yantis, S. (2014). *Sensation and Perception*. New York: Worth. ISBN# 978-0-7167-5754-2.
 +++All non-textbook reading assignments are available through the course's Moodle website (access code: S&P). You should print or download these readings and bring them to class on the appropriate day.

COMPONENTS OF THE COURSE

Attendance: It is important to attend lectures in this course, as lectures will involve demonstrations, classroom activities, films, and discussion of material not covered in the textbook or assigned readings. Students are expected to attend class regularly and participate in discussion, as this will contribute to a better overall understanding of the course material.

Quizzes: There will be 6 unannounced quizzes over the course of the semester. These quizzes will be taken at the start of the class period and will cover material that was presented during the previous two class meetings as well as material from assigned readings. Quizzes are worth 10 points each. The lowest quiz grade will be dropped. There will be no make-ups.

Exams: For this class there will be 3 exams. Exam dates are firm but the material covered may vary slightly from the syllabus depending on how the course progresses. Any deviations from the syllabus will be made clear prior to each exam. Exams will contain short-answer, multiple-choice, and short essay questions from the material covered in class, the textbook, and all assigned readings. Exams are worth 100 points each. The third exam will be cumulative but the majority of the material will be from topics

presented after the second exam. Students are expected to take all exams on the schedule dates. In an extreme circumstance, the student should contact me at least 24 hours prior to the test and I will decide on what will be done.

Writing Assignments: Over the course of the semester you will complete 2 writing assignments. Details on these assignments are provided at the end of the syllabus.

Graphing Assignment: For this assignment you will be asked to create and interpret graphs. The purpose of this assignment is to give you a basic comfort level in working with Excel as a graphing program and interpreting graphs that you will encounter in readings for this course. This assignment will be handed out during the second week of class and is worth 40 points.

Data Visualization: Over the course of the semester, you will be responsible for submitting a figure based on one aspect of the data reported in the assigned reading for that date. Figures should be uploaded to Moodle prior to the start of class and include a minimum of one paragraph explaining your rationale for representing the data in this way. Each data visualization assignment is worth a total of 10 points. Assignments uploaded after the start of class will be considered one day late. Each day late will incur a loss of 2 additional points.

GRADING BREAKDOWN

POINT ALLOCATION

Quizzes (5 X 10 points)	50
Exam 1	100
Exam 2	100
Exam 3	100
Writing Assignment 1	75
Writing Assignment 2 - Proposal	20
Writing Assignment 2 – Final draft	100
Graphing Assignment	40
Data Visualization (5 X 10 points)	50
Total Points	635

Final Grade = (Total Points Earned/635) *100

GRADING SCALE

A = 100.0000% – 93.0000%
A- = 92.9999% – 90.0000%
B+ = 89.999% – 87.0000%
B = 86.9999% – 83.0000%
B- = 82.9999% – 80.0000%
C+ = 79.9999% – 77.0000%
C = 76.9999% - 73.0000%
C- = 72.9999% – 70.0000%
D = 66.9999% – 60.0000%
F = 59.9999% or less

STUDENTS WITH DISABILITIES

Students with a documented disability who need reasonable academic accommodations should contact me as soon as possible to discuss your needs. As stated in the college handbook, “Students who claim physical, learning, or psychological disabilities should register with the Disability Support Coordinator at the start of the semester or as soon as the diagnosis is made.” Additional information can be found on the Bard College Learning Commons website (<http://inside.bard.edu/learningcommons/>).

ACADEMIC INTEGRITY

All students are assumed to have read the Bard College Handbook and to be familiar with the school’s policies regarding Plagiarism and Academic Dishonesty. Violations of these policies are taken extremely seriously and will result in a failing grade for the course and a referral to the Dean of Students for further action. Specific violations include (but are not limited to):

- Use or provision of prohibited assistance during quizzes or exams
- Sharing of writing assignments
- Plagiarism (which includes both the use of **words** and **ideas** without attribution)

Sensation and Perception Schedule

(All readings, assignments, and lecture topics dates are subject to change. Exam dates are final. Any revisions to this syllabus will be announced during class time).

Date	Topic	To Read Before Class	Due Before Start of Class
Tues. January 27	What is Sensation and Perception?		
Thurs. January 29	How does the brain process information?	Y: Chapter 1 (pp 1-20)	
Tues. February 3	How can we measure perceptual experience?	Y: Chapter 1 (pp 21-32); Sacks (1985) Chapter 1	
Thurs. February 5	How do we make decisions based on noisy information?	Y: Chapter 1 (pp 32-43)	
Tues. February 10	How is light detected by the eye?	Y: Chapter 2 (pp 45-59)	Graphing Assignment
Thurs. February 12	How is light transformed into neural signals?	Y: Chapter 2 (pp 59-79); Kanwisher et al (1997)	Data Visualization #1
Tues. February 17	What is the role of the brain in vision	Y: Chapter 3 (pp 85-102); Wiesel & Hubel (1963)	Writing Assignment #2 Proposal
Thurs. February 19	What is the role of the brain in vision	Y: Chapter 3 (pp 102-113); Goodale et al (1991)	
Tues. February 24	EXAM 1		
Thurs. February 26	How do we recognize visual objects?	Y: Chapter 4 (pp 117-136); Fang et al (2009)	
Tues. March 3	How do we recognize visual objects?	Y: Chapter 4 (pp 137-149); Gauthier et al (1999)	Data Visualization #2
Thurs. March 5	How do we perceive color?	Y: Chapter 5 (pp 153-185)	
Tues. March 10	How do we perceive depth?	Y: Chapter 6 (pp 189-219)	Writing Assignment #1
Thurs. March 12	How do we perceive motion?	Chapter 7 (pp. 225-253)	
Tues. March 17	NO CLASS (Spring Recess)		
Thurs. March 19	NO CLASS (Spring Recess)		
Tues. March 24	How does our attention change what we perceive?	Y: Chapter 8 (pp 257-273); Desimone & Duncan (1995)	
Thurs. March 26	How does our attention change what we perceive?	Y: Chapter 8 (pp 273-283); Strayer & Drews (2007)	Data Visualization #3
Tues. March 31	How is sound coded by ears	Y: Chapter 9 (pp 287-307)	
Thurs. April 2	How is sound coded by ears	Y: Chapter 9 (pp 307 - 320)	
Tues. April 7	EXAM 2		
Thurs. April 9	What is the role of the brain in hearing?	Y: Chapter 10 (pp 323 - 340)	
Tues. April 14	How do we perceive music and speech?	Y: Chapter 11 (pp 355 - 372); Mas-Herrero et al. (2014)	Data Visualization #4
Thurs. April 16	How do we perceive music and speech?	Y: Chapter 11 (pp 372 - 384);	
Tues. April 21	How do we perceive odors and tastes	Y: Chapter 13 (pp 427 -450); Martins et al (2012)	Data Visualization #5
Thurs. April 23	How do we perceive odors and tastes?	Y: Chapter 13 (pp 450 - 461)	
Tues. April 28	NO CLASS (Advising Days)		
Thurs., April 30	What are our other senses?	Y: Chapter 12 (pp 387 -402) ; Sacks (1985) Chapter 3	
Tues. May 5	What are our other senses?	Y: Chapter 12 (pp 403-418)	Writing Assignment #2
Thurs. May 7	NO CLASS (Board week)		
Tues. May 12	NO CLASS (Board week)		
Thurs. May 14	Review		
Tues. May 19	Final Exam		

WRITING ASSIGNMENTS

Guidelines

+++Stapled paper copies will be collected at the start of class on the scheduled due date.

+++You must work independently on all writing assignments.

+++Grading rubrics will be handed out at least one week prior to the due date

WRITING ASSIGNMENT #1 **Due Tuesday, March 10th**

Modularity refers to the assumption that the human brain consists of specific modules, each of which carries out one or more functions. This assumption is often accompanied by an assumption of anatomical modularity – specific modules reside in specific regions of the brain. As we will read in class, there is debate over the function supported by a region in the right fusiform gyrus (commonly referred to as the fusiform face area). Describe the nature of this debate. Your description should include a review of both Kanwisher et al (1997) and Gauthier et al (1999). How do the results of these papers differ? In addition, you will need to read the following more recent paper that weighs in on this issue:

Bilalić, M., Langner, R., Ulrich, R., & Grodd, W. (2011). Many faces of expertise: Fusiform face areas in chess experts and novices. *The Journal of Neuroscience*, *31*, 10206-10214.

Describe the findings in the paper by Bilalić et al, including the experimental design and results that they found. What perspective does this support? Finally, briefly propose an experiment that could further our understanding of the role of the fusiform face area. This assignment should be between 3-5 pages.

WRITING ASSIGNMENT #2 **Proposal Due Tuesday, February 17th** **Final Draft Due Tuesday, May 5th**

In your final paper you will perform a literature review and propose an experiment on a topic in sensation and perception that interests you. This may be a topic that we have covered in class, a topic from the textbook, or a topic you have encountered outside of class. Your review must include a minimum of five empirical articles.

Proposal. Your proposal should consist of 1-2 paragraphs describing the topic you are interested in learning more about, explaining why you are interested in this topic, and briefly describing the results of one related empirical article. Proposals are due in class on Tuesday, February 17th.

Final Paper: Papers should be between 8-12 pages double-spaced (not including reference list).

Further details on the structure of the proposal and the paper will be provided in class.