

# PSY 233: Sensation and Perception, Spring 2023

10:10 a.m. – 11:30 p.m. Mondays and Wednesdays in Olin 201

## Instructor

Tom Hutcheon, Ph.D.

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Office hours: Monday 9:00 a.m. – 10:00 a.m., Wednesday 11:30 a.m. – 12:30 p.m., or by appointment

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## **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 particularly 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 lead to very different perceptions across individuals and cultures.

## **REQUIRED READING MATERIAL**

Wolfe, J., Kluender, K., Levi, D., Bartoshuk, L., Herz, R., Klatzky, R., & Merfield, D. (2021). *Sensation and Perception* (6<sup>th</sup> ed.). Oxford University Press.

Note 1: Either the physical textbook or ebook works and the 5<sup>th</sup> edition is also fine.

Note 2: Students for whom purchasing this textbook represents a financial burden should see information about the Scale Project and accessing resources through the SMC division on pages 4 and 5 of this document.

All non-textbook readings are available through the course google drive: [PSY 233 - Spring 2023 Google Drive](#).

## **COMPONENTS OF THE COURSE GRADE**

### **Exams (200 points)**

There will be two in-class exams, each worth 100 points. Exam 1 will take place on **Monday, March 6<sup>th</sup>** and Exam 2 will take place on **Monday, April 24<sup>th</sup>**. Exam dates are firm but the material covered may vary slightly from the syllabus depending on how the course progresses. Exams will contain fill-in-the-blank and short essay questions encompassing material covered in class and the assigned readings. I will provide you with a study guide one week prior to each exam. Students are expected to take all exams on the schedule dates. Make up exams will only be scheduled with a written excuse from the Dean of Students or medical professional.

### **Multiple Choice Mondays (40 points)**

At the start of class every Monday, you will complete a 3-question (5-point) multiple choice quiz on material from readings assigned for that class and topics covered during the previous week. The quizzes are not meant to be overly challenging but create an expectation that you should be keeping up with the material. There are no make ups. Your lowest two scores will be dropped in the calculation of the final grade.

### **Article Review (25 points)**

A critical skill for psychologists is the interpretation and evaluation of empirical research. In this assignment, you play the role of journal reviewer. In this role, you will select and read one of the three articles posted under the folder “Article Review” in our class google drive. Next, you will write a brief (5 – 10 sentences) summary of the paper: what was this research question, how did they try to answer this question, what did they find, and what do they think it all means? This summary should be no longer than one page double spaced. Obviously, this summary will parallel what the authors write in the abstract, but your summary must be written in your own words. In addition, you will write a minimum of 5 comments to the authors on ways in which you think the paper can be improved. Note: “researchers should have included more participants” is not sufficient for a comment. This would need to be expanded to describe why they need more participants and if they acquired said participants, how would you expect this to change (or not change) the results. Completed reviews must be emailed to Tom ([thutcheo@bard.edu](mailto:thutcheo@bard.edu)) by the start of class on Monday, February 8<sup>th</sup>.

### **Article Presentation (25 points)**

During class on **Monday, February, 20<sup>th</sup>** you and one or two partners will present an empirical article to the class. Tom will assign an article for each group by **Monday, February 13<sup>th</sup>**. Presentations will be approximately 10 minutes and additional information will be provided later in the semester.

### **Experiment Proposal (10 points), Data Collection (15 points), Poster (25 points), and final paper (50 points)**

You will propose a perceptual experiment for which you will collect and analyze data. You will submit an initial proposal for your experiment (**Wednesday, March 29<sup>th</sup>**) and will meet with Tom to discuss. You will then collect data from 10 – 20 participants and submit your completed data dataset (**Monday, April 17<sup>th</sup>**). Next, you will create a poster (due for printing on **Wednesday, May 3<sup>rd</sup>**) for a poster presentation on **Monday, May 8<sup>th</sup>**. Finally, you will submit a final paper which includes an introduction, methods section, results section, and discussion (**Monday, May 22<sup>nd</sup>**). The proposal, data collection, and poster will be completed as part of a group. The final paper will be completed independently. Additional information about this project will be provided over the course of the semester.

### **Class Participation (10 points)**

You should come to class each day prepared to engage with the material. Class participation consists of active contributions to interactive experiences, group work, and thoughtful speaking and listening. If you tend to be uncomfortable speaking up in classes, please speak to me early in the semester to discuss ways to help you succeed. In addition to your performance in the classroom, frequent absences will have a negative impact on your class participation grade.

### **Extra Credit Opportunities**

Over the course of the semester there will be two or three psychology-sponsored colloquia. These occur on Thursdays from 4:00 p.m – 5:00 p.m. in the Preston Theater. See the psychology program website <http://psychology.bard.edu/newsroom> for dates. You can earn a maximum of **5 points** towards your final grade through attending ONE of these talks. To receive credit, attend a talk and submit one question you would have for the speaker to me via email at [thutcheo@bard.edu](mailto:thutcheo@bard.edu) within 48 hours after the talk. If you have a conflict with this time, but would still like an opportunity to earn extra credit, please speak with me early in the semester.

### **Grading Breakdown**

Point Allocation	Grading Scale
Exam 1	A = 93% and above
Exam 2	A- = 92.9% to 90%
Multiple Choice Mondays	B+ = 89.9% to 87 %
Article Review	B = 86.9% to 83%
Article Presentation	B- = 82.9% to 80%
Experiment Proposal	C+ = 79.9% to 77%
Data Collection	C = 76.9% to 73%
Poster Presentation	C- = 72.9% to 70%
Final Paper	D = 69.9% to 60%
<u>Class Participation</u>	F = less than 60%
Total Points	400

$$\text{Final Grade} = ((\text{Total Points Earned} + \text{Extra Credit})/400) *100$$

## **ADDITIONAL INFORMATION**

### **Late Assignments**

An assignment will be considered late if it is not submitted prior to the start of class on the day it is due. All late assignments will be subject to 50% reduction in maximum possible score on that assignment.

### **Academic Integrity**

All students are assumed to have read the Bard College Handbook and are familiar with the school's policies regarding Plagiarism and Academic Dishonesty. Violations of these policies are taken extremely seriously and one violation will result in a failing grade for the course and a referral to the Dean of Students for further action.

### **Academic Accommodations**

Your experience in this class is important to me. I am committed to meeting the needs of all students in this course and will work with you to ensure your accommodations are adequately met. If you have already established accommodations, I will receive a letter from the Learning Commons Disability Support Services with additional information. If you have not yet established services through the Learning Commons, but have a temporary health condition or permanent disability that requires accommodations (conditions include but are not limited to: mental health, attention-related, learning, vision, hearing, physical or health impacts), please review the Student Accessibility Resources website:

<https://www.bard.edu/accessibility/students/>

### **Respect for Diversity**

It is my intent that students from diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions on ways that I can improve the course and incorporate more diversity are encouraged and appreciated.

### **The Scale Project Bookstore Rental Program**

Who can use this resource?

Anyone can use this resource, but The Scale Project asks that you do not use the rental program if purchasing course materials is not a financial burden for you.

How can it be accessed?

1. Fill out [this Google form](#). Note: Currently you can only request a rental for 3 books that are at the bookstore.
2. Your books should be ready within 2-3 days. When at the bookstore, ask for Merry and let her know you are picking up from The Scale Project Book Rental Program. Please note that

when picking up your books, you will have to put a credit/debit card on file in case of a late return fee. They will remind you to return your books at the end of the semester, but be mindful of late fees, This is a Barnes & Noble policy, not a Scale Project policy.

### **Accessing resources through the SMC division**

Any student enrolled in a class in the Science, Mathematics, and Computing or a department or a SCI class who needs financial support for class materials can request assistance for obtaining course materials. These courses can be in Biology, Chemistry, Computer Science, Math, Physics, and Psychology, as well as SCI-designated courses. Funds are limited so we ask that students who can access materials through their own means do not make requests through this mechanism.

How can it be accessed? Complete [this Google form](#) and Megan Karcher will work with you to buy or rent the material you need or loan you a copy of the textbook that the department has on hand. Faculty will not know which students make such requests.

### **Important College-wide Dates**

Wednesday, February 8<sup>th</sup> – Drop/Add Period Ends

Wednesday, March 1<sup>st</sup> – Late Drop Period Ends, Pass/Fail Grading Deadline

Wednesday, May 3<sup>rd</sup> – Last Day to Withdraw from Class

### **BARD LAND ACKNOWLEDGMENT**

In the spirit of truth and equity, it is with gratitude and humility that we acknowledge that we are gathered on the sacred homelands of the Munsee and Muhheaconneok people, who are the original stewards of this land. Today, due to forced removal, the community resides in Northeast Wisconsin and is known as the Stockbridge-Munsee Community. We honor and pay respect to their ancestors past and present, as well as to Future generations and we recognize their continuing presence in their homelands. We understand that our acknowledgment requires those of us who are settlers to recognize our own place in and responsibilities toward addressing inequity, and that this ongoing and challenging work requires that we commit to real engagement with the Munsee and Mohican communities to build an inclusive and equitable space for all.

**Sensation and Perception Schedule – Spring 2023**

All readings, assignments, and lecture topics dates are subject to change. Exam dates are final.

**Monday, January 30<sup>th</sup>: Welcome to Sensation and Perception!****Wednesday, February 1<sup>st</sup>: Neurons and the Action Potential**

To Read for Class: Wolfe (pp 16 – 31); Sapolsky (2017). *Neuroscience 101*.

**Monday, February 6<sup>th</sup>: Light and the Eye**

To Read for Class: Wolfe (pp 33 – 39). *Ramachandran (1992). Blind spots.*

**Wednesday, February 8<sup>th</sup>: The Retina and Visual Pathways**

To Read for Class: Wolfe (pp 39 - 50).

Due: Article Review

**Monday, February 13<sup>th</sup>: Receptive Fields**

To Read for Class: Wolfe (pp 50 - 53; 67 - 74)

**Wednesday, February 15<sup>th</sup>: The Primary Visual Cortex and Beyond**

To Read for Class: Wolfe (pp 75 – 81); Desimone et al (1984). *Stimulus selective features of inferior temporal neurons in the macaque.*

**Monday, February 20<sup>th</sup>: Group Presentations****Wednesday, February 22<sup>nd</sup>: Color Vision**

To Read for Class: Wolfe (pp 131 – 162)

**Monday, February 27<sup>th</sup>: Seeing in 3 Dimensions**

To Read for Class: Wolfe (pp 167 - 204).

**Wednesday, March 1<sup>st</sup>: Visual Attention**

To Read for Class: Wolfe (pp 211 – 234). Memmert (2006). *Eye movements and inattentional blindness.*

**Monday, March 6<sup>th</sup>: Exam 1****Wednesday, March 8<sup>th</sup>: How does Vision Develop?**

To Read for Class: Snowden et al (2011). The development of vision

**Monday, March 13<sup>th</sup>: Face Perception**

To Read for Class: Kawakami et al (2018). *Visual attention to members of own and other groups.*

**Wednesday, March 15<sup>th</sup>: Sound and the Ear**

To Read for Class: Wolfe (pp 273 - 302).

**Monday, March 20<sup>th</sup> and Wednesday, March 22<sup>nd</sup>: No Class, Spring Break****Monday, March 27<sup>th</sup>: Hearing in the Environment**

To Read for Class: Wolfe (pp 305 - 318); *Hofman et al. (1998). Relearning sound localization with new ears.*

**Wednesday, March 29<sup>th</sup>: Group Meetings**

Due: Experiment Proposal

**Monday, April 3<sup>rd</sup>: No Class, Tom out of Town****Wednesday, April 5<sup>th</sup>: Experimental Design and Implementation****Monday, April 10<sup>th</sup>: Music and Speech Perception**

To Read for Class: Wolfe (pp 335 – 362). *Mas-Herrero et al (2014). Dissociation between musical and monetary award in musical anhedonia.*

**Wednesday, April 12<sup>th</sup>: Touch**

To Read for Class: Wolfe (pp 407 – 435).

**Monday, April 17<sup>th</sup>: Olfaction and Gustation**

To Read for Class: Wolfe (pp 451 – 563; 483 - 514).

Due: Data Collection Submission

**Wednesday, April 19<sup>th</sup>: The impact of social categories on perception**

To Read for Class: *Ito & Urland (2003). Race and Gender on the Brain.*

**Monday, April 24<sup>th</sup>: Exam 2****Wednesday, April 26<sup>th</sup>: Perception and Emotion**

To Read for Class: *Phelps et al. (2006). Emotion facilitates perception.*

**Monday, May 1<sup>st</sup>: No Class, Advising Day****Wednesday, May 3<sup>rd</sup>: Sensory substitution and expansion**

To Read for Class: *Bach-y-Rita (2004). Sensory substitution.*

Due: Posters due for printing.

**Monday, May 8<sup>th</sup>: Poster Session****Wednesday, May 10<sup>th</sup> and Monday, May 15<sup>th</sup>: No Class, Board week****Wednesday, May 17<sup>th</sup> and Monday, May 22<sup>nd</sup>: No Class, Completion Week**

Due: Final Paper (May 22<sup>nd</sup>).