

# Psyc 217/ Biol 217: Behavioral Neuroscience

Fall 2016

Tuesday and Thursday, 2:30 – 4:00 PM, Sharpless Auditorium

**Professor:** Laura Been, PhD

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610-896-1017

**Office:** I'll be holding office hours in The Coop. If you'd like to meet somewhere more private, please just let me know!

**Office hours:** by appointment

**Course Description and Learning Goals:** This course will introduce students to the field of behavioral neuroscience. The first part of the course will focus on "Neuroscience Fundamentals", in which students will learn the building blocks of our nervous system, including neuroanatomy, neurophysiology and neurochemistry. Following the teaching of the neurobiological essentials, students will learn more about brain-behavior relationships through reading and lecture discussions of the textbook, as well as laboratory demonstrations, multimedia presentations, and critical evaluations of the primary literature. Topics covered will include: learning and memory, sex behavior, neuroendocrinology, disorders of the nervous system, reward and drug addiction, and neuroscience and society. To culminate the course, students will write a literature review on a topic of their choosing within the field of behavioral neuroscience.

After finishing this course, students should be able to:

- Explain the basic organization of the central nervous system and how neuronal cells communicate with each other
- Objectively assess neuroscience information that is presented to the public across various media outlets, and explain to their peers and family the potential importance of these discoveries
- Understand both long-standing and emerging technologies that are used to study the nervous system (including ethical issues related to the use of some of these technologies) and describe how technology has bolstered our view of nervous system functions and therapeutic approaches to nervous system disorders
- Critically read and understand primary neuroscience research articles

**Textbook and Readings:** Required Text: **Breedlove, S.M. & Watson, N.V. (2013).** *Biological Psychology: An Introduction to Behavioral, Cognitive, and Clinical Neuroscience*, 7<sup>th</sup> Edition, Sinauer, Sunderland, MA.

The text is available for purchase in the bookstore and online (also available as an e-book), and is on reserve at the Science Library. In addition to the textbook, journal articles and other supplementary readings will be distributed electronically.

**Journal Clubs:** Journal Clubs are an opportunity to critically evaluate primary research articles that draw upon the concepts that we are learning in class. This is a great way to see current examples of behavioral neuroscience research that use cutting-edge techniques to answer questions about brain-behavior relationships. Active participation in discussion is required and will contribute substantially to your participation grade.

**Exams:** There are three midterm exams throughout the semester. Exams are not cumulative, although it will be helpful to draw upon your knowledge of the organization/function of the central nervous system that we cover in the beginning of the semester. Exams will consist mainly of short essay questions, but you may be asked to demonstrate your mastery of the course material in other ways (e.g., complete a flow chart, draw a diagram, label a picture). All exams will be given during class time and you will have the full class period to complete the exam. Students are expected to take each exam on the scheduled date and time. If you have a conflict during a scheduled exam, or are too ill to attend an exam, please let me know as soon as possible. Make-up exams will be given at my discretion. Every effort will be made to return graded exams in a timely manner. There is no final exam.

**Grade disputes:** If you believe that a mistake was made in the grading of your exam, or if you wish to dispute the way that a question was graded, please submit a written explanation of your dispute to me via email. You have one week following the return of your exam to submit a grade dispute. After one week, grades will not be changed for any reason.

**Literature Review Paper:** As a capstone to this course, you will use the knowledge and skills you have gained to write a literature review paper that critically evaluates a topic of choosing within the field of Behavioral Neuroscience. More information about the paper will be given during class.

**Grading:** There are 400 possible points in this course:

Exam I	100 pts
Exam II	100 pts
Exam III	100 pts
Literature Review Paper	75 pts
Attendance and Participation	25 pts
Total Possible Points	400 pts

**Grading Scale:**

376-400 pts = 4.0	308-319 pts = 2.3
359-375 pts = 3.7	292-307 pts = 2.0
347-358 pts = 3.3	280-291 pts = 1.7
329-346 pts = 3.0	268-279 pts = 1.3
320-328 pts = 2.7	252-267 pts = 1.0

At the end of the semester, I will calculate your grade and determine if I believe it correctly reflects your achievement in this course. Final grades will be assigned at my discretion.

**Classroom policies:** Please silence your phones and put them away during class. Students may use laptop computers or tablets to take notes, but please refrain from using your devices for non-class-related activities during class. I typically do not post my lecture slides before class, as I feel that it discourages active learning, but I may make some available after class if I feel they will be a useful study aid. Please do not audio-record any portion of my lectures without explicit permission to do so. Questions and discussions are welcome and encouraged. Please be respectful of your classmates at all times.

**Academic Integrity:** You are expected to abide by Haverford's Honor Code.

**Disability Statement:** Haverford College is committed to supporting the learning process for all students. Please contact me as soon as possible if you are having difficulties in the course. There are also many resources on campus available to you as a student, including the Office of Academic Resources (<https://www.haverford.edu/oar/>) and the Office of Access and Disabilities Services (<https://www.haverford.edu/ads/>). If you think you may need accommodations because of a disability, please contact Sherrie Borowsky, Coordinator of Accommodations, Office of Access and Disability Services at [hc-ads@haverford.edu](mailto:hc-ads@haverford.edu). If you have already been approved to receive academic accommodations and would like to request accommodations in this course because of a disability, please meet with me privately at the beginning of the semester (*within the first two weeks if possible*) with your verification letter.

<b>Date</b>	<b>Topic</b>	<b>Reading</b>	<b>Notes</b>
T 8/30	Course Overview	None	
Th 9/1	Studying Brain and Behavior	Ch. 1	
T 9/6	Neuroanatomy	Ch. 2	<i>More info given in class!</i>
Th 9/8	Sheep Brain Dissection		
T 9/13	Neurophysiology	Ch. 3	
Th 9/15	Neurochemistry	Ch. 4	Journal Club Paper Distributed
T 9/20	Neurochemistry		
Th 9/22	JOURNAL CLUB I		
<b>T 9/27</b>	<b>EXAM I</b>		
Th 9/29	Brain Evolution	Ch. 6	
T 10/4	Hormones and the Brain	Ch. 5	Paper Topics Approved by Today
Th 10/6	Hormones and the Brain		
T 10/11 Th 10/13	<i>*No Class Fall Break*</i>		
T 10/18	Researching your paper topic		Librarian Visit
Th 10/20	Sex: Evolutionary, Hormonal, and Neural Bases	Ch. 12	Journal Club Paper Distributed
T 10/25	Sex: Evolutionary, Hormonal, and Neural Bases		
Th 10/27	Emotions, Aggression, and Stress	Ch. 15	
T 11/1	JOURNAL CLUB II		
<b>Th 11/3</b>	<b>EXAM II</b>		
T 11/8	Learning and Memory	Ch. 17	
Th 11/10	Learning and Memory		
T 11/15	Psychopathology: Biological Basis of Behavior Disorders	Ch. 16	In-Class Peer Review of Paper Draft
Th 11/17	Psychopathology: Biological Basis of Behavior Disorders		
T 11/22	Drug Addiction and Reward	TBD	
Th 11/24	<i>*No Class Thanksgiving Break*</i>		
T 11/29	Neuroscience and Society	None	Journal Club Paper Distributed

Th 12/1	Neuroscience and Society	None	
T 12/6	JOURNAL CLUB III		
<b>Th 12/8</b>	<b>EXAM III</b>		
F 12/16	<i>Final Paper Due by 12 PM</i>		