

**BIBB 235 NEUROBIOLOGY OF BEHAVIOR**  
**FALL 2014; Monday & Wednesday 2-3:20pm; GLAB101**  
**SYLLABUS**

**Course Personnel and Contact Information:**

**Faculty: Hayley Nelson, Ph.D.**

Biological Basis of Behavior Program  
Office: B-28, Solomon Psychology Lab Building  
Email: hayleyn@sas.upenn.edu; Phone: 215-746-0408  
Office Hours: Wednesdays 11AM-12PM

**Teaching Assistant: David Reiner**

Email: dareiner@mail.med.upenn.edu  
Office Hours: Mondays 3:30-4:30pm in Solomon D-23

**Course Description:**

The goal of this course is to provide a comprehensive introduction to the interdisciplinary field of behavioral neuroscience, taking a research-based approach through interpretation, analysis and application of experimental discoveries. It is intended to provide students with the knowledge of the fundamental principles in the field, and prepare students for upper-level coursework in the neurobiology of behavior. The introduction to this course will include a brief review of physiology and neuronal communication, and will continue with discussions of evolution and behavioral neuroscience methodology using comparative and translational approaches. The remainder of the course will involve a more detailed analysis of specific behaviors and an evaluation of empirical research in each topic (historically through present day) with a focus on the underlying neural circuitry involved in the control of these behaviors. Included in these discussions will be considerations of ethical issues where appropriate.

BIBB 109 / PSYC 109 / BIOL 109: Introduction to Brain and Behavior is a **pre-requisite** for the course. With this in mind, we will only *briefly* review fundamental neuroscience material that is essential to understanding the behavioral neuroscience research that is the primary focus of the present course. The course will assume that students have a basic background in neuroscience.

**Text:**

There is no formal textbook for the course. Readings will be posted to the CANVAS website and it is expected that you have read them prior to class.

**Optional Supplementary Textbook:**

M.F. Bear, B.W. Connors, MA Paradiso. (2006). Neuroscience: Exploring the Brain. 3<sup>rd</sup> ed. (ISBN 978-0781760034). This book includes an excellent description of neurophysiology and neuroanatomy that you are expected to know from BIBB 109. Further, it provides a short and very clear summary of many of the major topics of this course.

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**Course Web Page:**

Lectures, discussions, readings, and other important course information will be posted routinely on **CANVAS**. Please monitor this website regularly.

**Lectures:** This course will be taught in a lecture-based format. If you have any questions or if there is something that you do not understand in class, speak up! It is likely that many of your classmates do not understand it either.

If you want to do well in the class, it is best to attend the lectures. Lecture slides will be posted online before the lecture. However, be forewarned that the slides are only part of the lecture and may not convey information that was presented orally. Neither the posted slides nor the readings provide an adequate substitute for note-taking in class.

**Readings:** You should read the assigned readings prior to class. At certain points in the course, the lectures will coincide closely to the readings, while at other points the lecture will diverge from the readings. In case of divergence, you should consider the lecture as primary material and the readings as supporting material. Although you may be tested on *details* that were in the readings but not the lecture, you will only be tested on *topics* covered in the lecture. If there is an exception to this rule, it will be pointed out explicitly in class. Readings will be posted on the Canvas website.

**Literature Review:** You are required to write an APA Style Literature Review. It is to be no more than 10 pages in length, following APA style formatting. You must cite at least 3 original research articles. Details on how to write this paper will be discussed in class and posted on Canvas. The deadline to upload your review on Canvas is **11/24**. There will be checkpoints of your progress throughout the semester. ***DO NOT wait until the last minute to work on this!***

**Class Assignments:** There will be two graded in-class assignments for your literature review where you will work in teams of 4-5 students. The dates of the assignments are indicated on the syllabus and you are required to participate on these days. Be sure to bring your class notes on these days. At least one person in the group needs to bring a laptop with access to the internet. One document per group will be turned in at the end of class and all participating members will receive the same grade.

Prior to each midterm, there will be an in-class assignment that will serve as a review for the upcoming exam. The questions for these assignments may be based on questions and responses you are required to submit on Canvas by the dates indicated on the schedule. **The questions and responses you submit will be graded.**

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**Exams:** Your grade will be a product of your performance on three exams. All exams consist of multiple choice, matching, true/false, and/or short essay questions. The exams are rolling cumulative, so that concepts presented in each block are fair game for questions asked in succeeding exams. **There is one make-up exam at the end of the course** – it will cover everything taught in the course and will substitute for one absence for any exam. Your total exam grade will be based on the average of your three highest exam scores, each being 20% of your final grade. If you take all three midterms, you do not need to take the make-up exam, however you may choose to take it if you would like to try to adjust your final grade by dropping the lowest score.

**Make-Up Policy:** The only make-up exam offered is the cumulative exam during Finals. If you miss one midterm, your exam grade for the course will be based on the average score of the other midterms and the make-up exam. **You will not be given a make-up exam other than the scheduled make-up exam.** Please look at the dates for the exams now. If any exam conflicts with a religious holiday that you observe, you must let the instructor know by e-mail by the end of the second week of the course.

**Re-grading Policy:** If you have a question or concern that there was an error in grading an exam, assignment, or report, you must submit your request to the teaching assistant *in writing* to have your work re-graded, no more than one week after the work was returned in class. **No re-grade requests will be considered beyond this date.** Your request must explain the specific error that you think was made. If you submit a request, your work will be re-graded in its entirety, and the final grade could be higher or lower than your original grade. Please only submit a re-grade request if you genuinely believe that an error has been made--a judgment call that could have gone either way is not an error.

**Office Hours/Email Policy:** The instructor and the teaching assistant will have office hours every week, which you are encouraged to attend if you have any questions about the content or structure of the course. Please only e-mail the instructor if you have a question that can be answered in a few sentences or less. If you have a question that requires a longer response, please come to one of our office hours.

**Academic Integrity:** Please note that Penn has strict rules on academic integrity (see [www.upenn.edu/academicintegrity](http://www.upenn.edu/academicintegrity)). Violations of the rules will be reported to the Office of Student Conduct and will likely result in automatic failure of the course.

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**Course Absence Report:** The Course Absence Report (CAR) system has been designed to provide a consistent way for students to notify course instructors of short-term absences for one or more courses. It also provides a method for advising offices to track absences and coordinate support for students who miss classes. The submission of a CAR does not excuse you from your course obligations; students are still responsible for following up with each instructor directly and adhering to course policies and procedures as outlined in the course syllabus. All students enrolled in a class can submit a CAR during the current term using Penn InTouch. All notifications of class absences must be sent to the instructor through the CAR only. If you will be absent for more than five days as a result of an University-approved excuse, please contact a CaseNet advisor with the College Office, who will notify your instructors directly. Please review all policies here: <https://www.college.upenn.edu/node/2584>

**Classroom Etiquette:** Although you are encouraged to come to lectures, you are not required to do so, however this will likely be reflected in your grades. Cell phones/Smartphones should be turned off during class. Laptop computers should be used only for taking notes and completing in class assignments, not for sending instant messages, surfing the web, monitoring status updates on Facebook, or any other purpose. Violation of this policy will result in penalization by lowering of your final class grade.

**Final Grade:**

Your final grade will be based on the exams, literature review, and class assignments as follows:

Exams	60%
Literature Review	25%
Assignments	15%

(Lit Review assignments and midterm questions)

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<b>Date</b>	<b>Topic</b>	<b>Readings</b>	<b>Assign. Due</b>
8/27	Course introduction and overview	<i>Wilson</i>	
<b>9/1</b>	<b>LABOR DAY – NO CLASS</b>		
9/3	Research Methods, pt. 1		
9/8	Research Methods, pt. 2		
9/10	Behavioral Ecology, Ethology, and Evolution	<i>Marler</i>	
9/15	Neuroethology of Learning	<i>Holland &amp; Ball</i>	
9/17	Dopamine, Learning, Motivation & Reward	<i>Wise</i>	<b>questions</b>
9/22	APA Style Literature Reviews	<i>Gopen &amp; Swan</i>	
9/24	In-Class Midterm 1 Assignment		
<b>9/29</b>	<b>Midterm 1</b>		
<b>10/1</b>	<b>Lit Review Assignment 1</b>		
10/6	Behavioral Neuroendocrinology	<i>Nelson</i>	
10/8	Reproduction and Mating Behaviors	<i>Numan</i>	
10/13	Female Sexual Behavior		
10/15	Sexual Differentiation		<b>Topic</b>
10/20	Male Sexual Behavior, pt. 1	<i>Hull &amp; Dominguez</i>	
10/22	Male Sexual Behavior, pt. 2	<i>K-N, Pfaus</i>	
10/27	Human Reproductive Behavior	<i>Alcock, Pfaus</i>	<b>questions</b>
10/29	TBA		
11/3	In-Class Midterm 2 Assignment		
<b>11/5</b>	<b>Midterm 2</b>		
<b>11/10</b>	<b>Lit Review Assignment 2</b>		<b>Thesis</b>
11/12	<i>FEW Grant Lecture – Dr. Michela Gallagher</i>	<i>TBA</i>	
11/17	Mental Health		
11/19	Drug Abuse and Addiction	<i>Kalivas &amp; Volkow</i>	
11/24	Feeding Behavior	<i>Gao &amp; Horvath</i>	<b>Lit Review</b>
<b>11/26</b>	<b>THANKSGIVING BREAK – NO CLASS</b>		<b>questions</b>
12/1	Decision-making and self-control	<i>Bechara</i>	
12/3	In-Class Midterm 3 Assignment		
<b>12/8</b>	<b>Midterm 3</b>		
<b>12/16: 6-8pm</b>	<b>Cumulative Final Exam</b>		

**Dates to note:**

**Sept. 1** – Labor Day – No Class

**Nov. 26** – Thanksgiving Break - No Class

**Oct. 3** – Drop period ends

**Oct. 31** – Withdrawal deadline