

Psychology 360: Physiology of Behavior

Fall Semester, 2017

Mondays & Wednesdays 2:30 - 3:50. Maxey 304

Lab: Tuesdays 1:00 – 4:00 pm. Meet in Maxey 337

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Office hours: Monday and Wednesday, 1:00-2:00; and by appointment

Course Materials:

Required text: Pinel, J.P.J. & Barnes, S. (2018). Biopsychology (10th ed.). Needham Heights, MA: Allyn and Bacon.

Optional book: Sacks, O. (1970). The Man Who Mistook His Wife for a Hat (and Other Clinical Tales). New York: Harper & Row.

Biopsychology. Readings from this book are required and should ideally be completed in advance of the class period for which they are assigned. The content is central to class meeting and will be vital for exams.

The Man Who Mistook His Wife for a Hat. Readings from this book tend to be short, and were written for a general audience, so they will probably go a bit faster than textbook chapters. They are assigned less for their specific content (though their content is certainly relevant) than to provoke thought and make the course material lively and interesting. Relax and enjoy them, and as a mental exercise, try to make connections with the text and lectures as much as possible. I haven't assigned the entire book, but if you're a big geek like I am and enjoy the selections I've assigned, you'll probably like the remaining chapters as well. You can find these readings on Cleo.

Course overview: This course is intended to introduce students to modern physiological approaches to the study of psychology. Naturally this will include the basics of contemporary laboratory neuroscience and perhaps more importantly, will focus on physiological approaches to areas of psychology with which you may already be familiar (i.e., perception, communication, emotion, psychopathology, etc.). Considering the relevance of physiological psychology to a broad range of academic disciplines such as anatomy, chemistry, genetics, engineering and ecology (to name but a few) as well as these other areas of psychology itself, it is my hope that students will gain a new and valuable perspective on one or more of your own areas of interest, whether or not that lies within the traditional boundaries of psychology (or any other academic field!)

I personally find that it can be helpful to familiarize oneself with the global organization of a project before undertaking it. Thus, if you are interested, the logic I have used to plan the outline of this class is as follows: Generally, the course will flow from the simple toward the increasingly complex. We will begin the course on a relatively molecular level learning about the physical architecture and basic functioning of the nervous system and its components. This not only familiarizes you with information that psychologists, regardless of their specialty, are increasingly expected to understand and utilize, but also provides the building blocks needed to understand subsequent material in this course. From there we will learn how these components combine to produce simple behaviors and allow humans and animals to interact with their environment. The remainder of the course will then be concerned with physiological approaches to popular areas of psychological science and outlining modern applications of neuroscience to real world issues. If you have any particular areas of interest that you want to be sure get covered, let me know and I will try my best to fit them in.

Weekly lab sessions. Previous students have commented that Physiology of Behavior can be difficult because they've never seen a brain or a neuron, and consequently there's often little for the classroom material to "stick to". As a result, I've added a laboratory component of the class, refining some activities that have worked in the past, and adding some new ones for which I've never had the time or resources to include. These now take the form of weekly lab sessions, in which we will take a more applied approach to the course – poking brains, gazing at neurons, and conducting small (non-invasive) experiments on ourselves. I've tried to schedule these so that the lab fits in logically with the current class topics (though in some cases the timing is arbitrary, since they will be relevant at multiple times throughout the semester). While there will be occasional lab assignments to be turned in, the point of these isn't so much assessment as it is to help you learn, and hopefully, to allow us all to have a little bit of fun with neuroscience. Lab sessions will usually be in Maxey 337 (though depending on the particular lab topic and the required equipment they may be conducted elsewhere, so listen for location changes in class). Note: Given that labs require specialized equipment and time to set up, they cannot be made up (sorry I can't be more flexible, but I'm taking a lead from Biology and other science departments here). If you have an excused absence, make sure to take care of the proper documentation and all will be well.

Class Web Page: <http://www.whitman.edu/~herbrawt/classes/360/psych360.html>

I've constructed a thoroughly unimpressive course web page that I'm hoping will remain up-to-date over the semester, and with some luck, perhaps even expand into something less unimpressive. I will also maintain a course web page on Cleo. I'll post announcements relating to the class and to psychology in general in both locations (for instance, locations and titles of invited speakers and reminders about upcoming assignments). I'll also try to post handouts and assignments (in adobe acrobat format) for students to download. Thus, if you miss class, the web page might be a good first place to check in.

Grading and Assignments

Your grade in Psychology 360 will be based on the following assignments:

2 Midterm exams – 40% total (20% each)

Final Exam 20%

Various Lab Reports 15% total

1 Paper – 20%

Attendance and participation – 5%

Exams. There will be four exams during the semester. These exams are incredibly hard and will consist of several short answer and one or two essay items. Most short answer questions can be answered well in a medium size paragraph (about 1/3 of a page, given average handwriting).

Answers to essay items will be about a page in length. Exams will be closed-book and should be completed during the class period. I'll distribute a list of practice questions before exams to help you prepare. Exams will primarily cover material since the previous exam ("non-cumulative"). However, this does not indicate that it is wise to forget material immediately after it is tested.

Exception: The final exam will consist mostly of non-cumulative items, but may include some global, integrative questions relating to recurring issues from throughout the semester. Makeup exams are available for legitimate, documented conflicts. Please see me about such conflicts in advance.

Lab Reports. Most lab exercise will have a short associated assignment to be turned in at the next lab meeting. Most of these will not require a significant amount of time to complete, and some may not even require any time outside of lab. They are intended to provide focus and make sure that the point of doing the lab is clear. I've also tried to make them as interesting and thought-provoking as possible.

Paper. There will be one paper assigned toward the end of the semester. It should be typed and double-spaced, and about 5 pages in length (perhaps a bit more or a bit less, depending on your individual writing style). The topic will relate to information from both class and laboratory meetings. Specific details will be distributed as the due date approaches.

Grading Scale: Grades will be assigned based on the percentage of all possible points earned (see above for the relative contributions of each assignment). Below are the overall performance ranges that result in various letter grades.

A	93-100%	C	73-76%
A-	90-92%	C-	70-72%
B+	87-89%	D+	67-69%
B	83-86%	D	63-66%
B-	80-82%	D-	60-62%
C+	77-79%	F	Below 60%

Some important class policies you'll want to know about:

Late Assignments:

I like to think I'm a reasonable fellow, so I'm not against granting deadline extensions from time to time. Here are my guidelines:

1. Extension requests made 1 week (or more) before the due date are almost certain to be granted, without penalty, provided that
 - a) the conflict is a reasonable and legitimate one, and
 - b) you haven't requested an extension for every assignment all semester long. After all, Wally didn't just fall off the conveyor belt yesterday. The conveyor belt thing happened years ago.

In short, make your requests as early as possible, but don't abuse my generosity.

2. Within one week (7 calendar days) of the deadline, extensions may still be granted, subject to the following (no exceptions).
 - a) If supported by the Dean of Students, there will be no late penalty.
 - b) If not, there will be a penalty of 5% per day (e.g., a score of 96% would become a 91%, then an 86% and so on for each day late).

In other words, plan your semester early. Identify your busy weeks early on and get the "free" version of the extension, rather than losing 5% or more. If you're unexpectedly abducted by howler monkeys, the Dean and I will understand. If you simply forgot you had three papers due tomorrow, we're less forgiving.

Attendance:

If you have to miss class because of some commitment that can't be missed, that's fine. Check with me to make sure you didn't miss any important announcements, and collect any handouts. Re-read the assigned chapters, and ask me about any questions you might have. I also recommend borrowing class notes from that attractive classmate you've been dying to meet. Here's your opener: "Herbranson doesn't give out his lecture notes (I know, right?). Can I borrow yours?". From there you're on your own. Good luck.

Tentative schedule of topics and reading assignments:*

<u>Date</u>	<u>Topic</u>	<u>Reading Assignments</u>
Lab W, 8-30	No lab Introduction, The Physiological Approach	
M, 9-4 Lab W, 9-6	A Brief Intellectual History of Physiological Psychology Measuring Physiological Variables (Galvanic Skin Response) Functional Neuroanatomy	Pinel, Ch. 1 Pinel, Ch. 3
M, 9-11 Lab W, 9-13	Electrophysiology Brain Lateralization Neurochemistry and Drug Actions	Pinel, Ch. 4 (77-87) Pinel, Ch. 4 (87-97)
M, 9-18 Lab W, 9-20	Behavioral Genetics and Evolution Neuroanatomy Physiological Research Methods I: Non-invasive Methods	Pinel, Ch. 2 Pinel, Ch. 5 (102-112)
M, 9-25 Lab W, 9-27	Physiological Research Methods II: Lesions and Injuries Bug Brain Catch-up / Bonus Topic	Pinel, Ch. 5 (112-120)
M, 10-2 Lab W, 10-4	Exam 1 Electrophysiology: NEURON Software General Principles of Sensory Physiology	 Pinel, Ch. 7 (165-76; 184-93)
M, 10-9 Lab W, 10-11	Vision: From Eye to Brain Swimmy the Virtual Fish Visual Disorders	Pinel, Ch. 6 Sacks, Ch. 1, 8
M, 10-16 Lab W, 10-18	Somatosensation and Pain Swimmy the Fish, Part 2 Movement	Pinel, Ch. 7 (176-84), Sacks, Ch. 3, 4 Pinel, Ch. 8, Sacks, Ch. 6, 7
M, 10-23 Lab W, 10-25	Reinforcement, Reward and Addiction Clay Brains Physiological Bases of Learning and Neuroplasticity	Pinel, Ch. 15 Pinel, Ch. 11
M, 10-30 Lab W, 11-1	Disorders of Learning and Memory Awakenings Film Catch-up / Bonus Topic	Sacks, Ch. 2, 12, 15
M, 11-6	Exam 2	

Lab W, 11-8	Pain (MwaaaHaaaHaaaHaaaaa.....!) Psychiatric Disorders	Pinel, Ch. 18
M, 11-13 Lab	Language and Reading Brain Dissection	Pinel, Ch. 16; Sacks, Ch. 9
W, 11-15	Brain Development	Pinel, Ch. 9; Sacks, Ch. 21

11-18 to 11-26 Turkey-Centered Gluttony Break

M, 11-27 Lab	Aging and Dementia Neurological Assessment	Pinel, Ch. 10
W, 11-29	Physiology of Emotion and Stress	Pinel, Ch. 17
M, 12-4 Lab	Sleep Cycles and Biological Rhythms No Lab (Paper Due at 4:00)	Pinel, Ch. 14
W, 12-6	Catch up and prepare for final exam	

Tuesday, 12-12 Final Exam, 2:00-4:00

* Note! This is only a tentative schedule and is almost certain to undergo subtle to radical changes. If we fall behind, topics scheduled toward the end of the semester may be ruthlessly deleted.

Some not so commonly asked questions...**Q: I hate this! How do I withdraw?**

A: Students may drop without record until October 11th. If you plan to do this, please do so as quickly as possible so that others may register. After that, students may withdraw until November 3rd, and doing so will leave a nifty “W” on your transcript (I think it’s for “Wally”, to help you remember me).

Q: Is attendance required?

A: No, but it is highly recommended. My official policy is that you are the one paying to go to class, so you may attend whenever you deem necessary. Keep in mind though, that you are responsible for any material presented in class. If you will be absent from class, it’s a good idea to borrow notes from somebody to ensure you don’t miss anything important. See the attendance policy on page 6.

Q: I think I’m going to have smallpox on several critical exam dates this semester. Can I schedule makeup exams?

A: Notify me as soon as you realize there will be a serious conflict. Makeup exams can be arranged only for *legitimate* and *properly documented* excuses (i.e., serious illnesses, natural disasters and the like, with a corresponding doctor’s note, CNN footage, subpoena, etc.) Note: The big wedding on Days of our Lives is not a legitimate excuse. If it’s that important I’d be happy to help you obtain a copy and I promise not to spoil the surprise ending. Also see the late assignment policy on page 6.

Q: Dude, I bombed that first exam... What can I do?

A: I don’t offer extra credit for this class, but keep in mind that the remaining assignments (over 80% of your grade) should provide a good opportunity to correct a rough start.

Q: I have no idea what you were talking about last week...

A: Please feel free to ask questions during lectures, and let me know if I’m moving too quickly or am not explaining something clearly - It’s difficult for me to always know what you’re experiencing in class. I’m also glad to take some time at the beginning of class to clarify points from previous lectures or from the text.

Q: Do I really need to be here for the final during finals week?

A: Only if you want points for it.