
Introduction to Behavioral and Clinical Neuroscience with Laboratory (PSY 252)

Professor Heide Island, Office: Carnegie 305
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Office Hrs: T/Th., 9:30–11:15 am and by appointment



Course Information

Lecture Class: Tues/Thurs., 7:55 – 9:30, Carnegie 205

Laboratory Class: Wed., 7:30 – 9:05, Carnegie 205

Teaching Assistants: Dakota Stewart

Emma Ferns

TA Emails: stew5054@g.pacificu.edu

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Course Description

The study of behavioral neuroscience (i.e., *biopsychology* or *physiological psychology*) investigates the biological foundations of behavior. This includes cellular, neurochemical, genetic and epigenetic influences on our cognitive, emotional, and social behavior. This class will address biological psychology and questions therein with a heavy evolutionary and comparative animal behavior emphasis. **Pre-requisite:** Successful completion of PSY 150: Introductory Psychology with a C or better or permission by the instructor. Introductory Biology is recommended.

Required Materials

Required Books

Bear, M. F., Connors, B. W., & Paradiso, M. A. (2015). Neuroscience: Exploring the Brain, Fourth Edition. Philadelphia, PA: Lippincott, Williams, & Wilkins. ISBN: 0-7817-6003-8 (Earlier editions are fine)

American Psychological Association (2009). Publication Manual of the American Psychological Association, 6th Edition, Spiral Binding. Washington, D.C.: APA. ISBN: 1557988102

Required Materials

Standard Dissection Kit (see Pacific University Bookstore).

Required Software

Microsoft Word is installed on all public-use computers at Pacific, this is considered standard professional software. Word (not Pages) is required for all of your reports whether on your personal computer or through those available to you through Pacific. *Because Google Drive and Pages often reformats documents and uses a different reviewer mode than Word, reports drafted on this software will be returned ungraded.*

Student Learning Outcomes

If you put in the time to attend class and the laboratory, you complete the readings, study a minimum of 5 hours/week outside of class and apply yourself in the laboratory reports, you will:

- assess research and methodology involving the structure and function of the central nervous system and their electrochemical communicatory systems
- evaluate become proficient in basic dissection, electroencephalography, neuropsychological assessment, and galvanic skin response methodology
- critically evaluate neural injury through case examples.
- develop a competency in evaluating TBI/ABI
- improve your evidence-based writing skills
- write papers using the American Psychological Association's manuscript style
- develop more efficient study skills (i.e., less memorization and more time in conceptual mapping, case evaluation, and drawing the neuroanatomy)

Lecture Section Structure

Behavioral neuroscience is considered challenging; expect to work hard in this course. Physiological psychology is the platform upon which all other psychology courses will build. This class will move fast; therefore, falling behind on attendance or the reading is ill advised. You can expect to read *roughly* 40+ pages each week for successful completion of this course. It is also important to note that I may not discuss everything from the text during lecture; but you will still be responsible for that material. Further, I may provide supplementary reading for labs; this will not be included with the syllabus. You will need to download the articles from Moodle or be in class to receive the hard copies.

Exams

There are three semester exams as well as a pre-assessment and a post-assessment (i.e., cumulative final exam). Your exam grade is based on your **HIGHEST** three exam scores. There are 77 points possible on each exam but your score is based on 75 points; this provides a point cushion in the event that you misinterpret a question (this is the **ONLY** bonus point opportunity I provide). The typical exam covers 4-5 chapters of material. **NOTE:** You must take both the pre-assessment and the cumulative post-assessment exams, as I use this as an assessment of your learning and in part, my teaching efficacy. **Failure to attend either examination will result in an incomplete for the course; even though the pre-assessment is not graded and the post-assessment will only count toward your final grade if it is HIGHER than your lowest exam score.**

Brain Drain Competition

This is essentially like Neuroscience Jeopardy, there are 10 rounds of neuroscience questions, each worth differing levels of points, and with different categories (e.g., Neurochemistry, Neuroanatomy, Clinical conditions, History, etc.). Each competitor will pick a category for points, they have one minute to answer the question (yes, it is timed), if they cannot answer the question they earn no points for that turn.

When is It? The competition is in Carnegie Commons, of the Psychology Building from 10:00 am until it ends. In a typical year, the competition overlaps with the Psychology Holiday Party so be prepared for an audience.

Why Participate? If a participant correctly answers each turn of the 10 turns, they automatically earn an A in the course (this rarely happens, but it has transpired twice in the 10 years of the competition). The name of the highest point winner will have their name added to a plate on the Brain Drain perpetual trophy displayed in the Neuroscience lab.

What's the Catch? There's no catch. Enrolling in the competition costs you nothing, but you could WIN BIG, an A for the course, or at the very least an opportunity to practice for the final.

Scholarly Activity Points

Your education does not start and stop in the classroom. Therefore, you are expected to participate in one hour (2 points total) of intellectual investigation outside of the class (1 point/half hour). These are referred to as "scholarly activity points." Examples of scholarly activity points include: research participation; outside lecture or speaking events related to the course; lecture panels, or professional workshops. Failure to complete the two-points worth of scholarly activity outside of class will result in an incomplete (I) for the course. If points are not made-up within the year, you will receive a letter grade demotion on your transcript. Please use the Scholarly Activity Tracking Sheet on page 6 of this syllabus and submit it for credit the last day of the semester.

Laboratory Section Structure

This is a laboratory-based course, thus there is a laboratory session every Wednesday. **You are expected to ATTEND all laboratory sessions.** If you miss two labs over the course of the semester it will result in a grade reduction by one letter. More than two and you will receive an F for the course and must retake both the lecture and laboratory section another semester. You will have a laboratory partner for each activity you work in lab, this belies the strict lab attendance policy. If you don't come to lab, it costs your laboratory partner data, you will be reporting on both your data and experience as well as that of your laboratory partner.

Further, you will at times, meet outside of class to complete the laboratory exercises, again if you are absent during the lab, you miss the instructions and opportunities to reserve classrooms, materials, and equipment.

Teaching Assistants

The teaching assistants, Dakota Stewart and Emma Ferns are psychology majors, who excelled in the Behavioral Neuroscience course. You will submit all laboratory reports first to the TAs prior to submitting them for a grade to me. Emma and Dakota will help you conceptualize the material, APA Style (for your lab write-up), answer questions, and facilitate study sessions. Should you choose to attend their study sessions or office hours, please be prepared, ask questions and take advantage of their knowledge and expertise.

Laboratory Reports

There are seven 25-point laboratory write-ups over the course of the semester. All laboratory write-ups must be **typed** with **grammatically correct** sentences and in manuscript style, as outlined by the American Psychological Association Style Guide (i.e., APA **format**). Do not simply guess at APA format, it is a highly specific, definitive manuscript format; you will need to follow the formatting examples from your style manual (see pages 41-60 for examples). I have also included an example on Moodle and will provide an introduction to APA and laboratory writing during the first laboratory session of the semester.

Submitting Your Laboratory Report

- 1.) save your write-up as a Word document and name it "YOUR LAST NAME-LAB #.doc" (e.g., ISLAND-LAB 1)
- 2.) email the laboratory report as an attachment to your assigned TA, no later than 5pm on the Wednesday prior to the due date (Friday by 5 pm).
- 3.) you receive a return email from your TA that next day (Thursday) with the following feedback:
 - a.) the report was written in correct APA style and will be sent on to me to grade, or
 - b.) that it was not in correct APA style, it must be revised before it can be submitted to me
- 4.) if you receive an email indicating that the report needs APA corrections, then you **must revise the report to comply with APA formatting**.
- 5.) you will have a turn around of one-day for your "second chance," to resubmit the corrected report to your TA. The deadline for all revisions is Friday by 5 pm.

The revision option is a courtesy to you in place of simply earning a failing mark for a poor initial laboratory report. Please use some introspection, if you receive an email suggestion to get help, you **NEED IT**. Do not waste your TAs or instructor's time by persisting in making the same mistakes when simply coming in for clarification could resolve the confusion. APA is highly specific but easy to learn, half of the effort for any writing is in the editing!

Grading Rubric

Assessment Material	Poss. Pts	Your Pts	Rubric
3 Exams (75 pts ea) + Pre/Post Exams	225		A/- = 400 - 358
7 Labs (25 pts ea)	175		B +/- = 357 - 318
2 Scholarship Activities (1 hr), Complete/Incomplete	C/I		C +/- = 317 - 278
TOTAL POINTS	400		D +/- = 277 - 238
			F = 237 - 0

Exam and Laboratory Deadlines

Exam Dates	Draft I Due to TA (Wednesdays)	Draft II Due to TA (Friday at 5 pm)
Thurs., 15 – Sept., Exam 1	Sept. 14: Write-up 1 – Reflex Arc	September 16
Thurs., 20 – Oct., Exam 2	Sept. 28: Write-up 2 – Brain Dissection	September 30
Tues., 06 – Dec., Exam 3	Oct. 12: Write-up 3 – Case Reports	October 14
Wed., 07 – Dec., Brain Drain	Oct. 26: Write-up 4 – Sleep Journal	October 28
Wed., 14 – Dec., Final Exam	Nov. 9: Write-up 5 – EEG	November 11
	Nov. 16: Write-up 6 – Neuropsych. Assessment I	November 18
	Nov. 23: Write-up 7 – Neuropsych. Assessment II	November 25

University Policies

Classroom Behavior

From the Pacific University Faculty Handbook (Section 4.1.3)

Students should be free to take reasoned exception to the data or views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they enroll. Students should have protection through orderly procedures against prejudiced or capricious academic evaluation. At the same time, students are responsible for maintaining standards of academic performance established for each course in which they enroll. Students must also recognize that, as members of a community of learners, they have an obligation to be responsible members of that community, and that the exercise of their freedom of expression does not impinge upon the rights of others in their quest for learning.

Accommodated Learners

If you have documented challenges that will impede your learning in any way, please contact EDNA GEHRING the Director of LSS at ext.2107 or gehringe@pacificu.edu. The Director will meet with students, review the documentation of their disabilities, and discuss the services that Pacific offers and any ADA accommodations for specific courses.

Tutoring and Learning Center (TLC)

If you need more writing assistance in addition to the help provided by your professor and the teaching assistants, please take advantage of the TLC in Scott Hall 127. The center focuses on delivering one-on-one and group tutoring services for math and science courses and writing skills in all subjects.

Useful Neuro Weblinks

Writing essays and in APA format

<http://depts.washington.edu/psywc/handouts.shtml>

Cranial Quiz

<http://www.gwc.maricopa.edu/class/bio201/cn/cranial.htm>

Internet Medical Reference

<http://www.webmd.com/>

The Brain from the Bottom Up

http://thebrain.mcgill.ca/flash/index_a.html

The Whole Brain Atlas

<http://www.med.harvard.edu/AANLIB/home.html>

FLEXIBLE COURSE CALENDAR

WEEK	LECTURE – Tuesdays/Thursdays	LABORATORY - Wednesdays	WEEKLY READING
WEEK 1 Aug. 30–Sept. 01	Syllabus, Pre-test, Neural Communication	APA Style Film: <i>Amazing Brain</i>	Ch.1, pp. 3-21 Ch. 2, pp. 24-54
WEEK 2 Sept. 06–08	Neural Communication	Lab 1: Nerve Battery	Ch. 3, pp. 55-79 Ch. 4, pp. 81-108
WEEK 3 Sept. 13–15	Synaptic Transmission ●* EXAM 1 (Ch. 1 - 6) ●*	Finish: Neurochemistry DUE: Write-Up 1 - Reflex Arc	Ch. 5, pp. 108-142 Ch. 6, pp. 144-178
WEEK 4 Sept. 20–22	Neuroanatomy	Lab 2: Brain Dissection	Ch. 7, pp. 179-249
WEEK 5 Sept. 27–Sept. 29	Brain Injury	Film: <i>Billy Broke his Head</i> DUE: Write-Up 2 - Dissection	Ch. 13, pp. 453-482
WEEK 6 Oct. 04–06	Brain Injury	Lab 3: Case Study Distribute: Sleep Materials	Ch. 13, pp. 453-482
WEEK 7 Oct. 11–13	Movement	Film: <i>Twitch and Shout</i> DUE: Write-Up 3 - Case Report	Ch. 14, pp. 483-519
WEEK 8 Oct. 18–20	Movement ●* EXAM 2 (Ch. 7, 23, 13, 14, 19) ●*	Lab 5: Electrophysiology (EEG) Film: <i>God and the Brain</i>	Ch. 19, pp. 645-683
WEEK 9 Oct. 25–27	Sleep Return: Sleep Materials	Due: Write-Up 4 - Sleep Journal Lab 6 & 7: Neuropsych Assessment I & II	Ch. 19, pp. 645-683
WEEK 10 Nov. 01–03	Sleep/Seizure D/O TLE and Religious Experience	Film: <i>How to Sleep Better (Early Lab)</i>	Ch. 20, pp. 618-642
WEEK 11 Nov. 08–10	Lateralization	Film: <i>William's Syndrome</i> DUE: Write-Up 5 – EEG	Ch. 21, pp. 719-750
WEEK 12 Nov. 15–17	<u>Cognition:</u> Attention, Learning, Memory	Film: <i>The Forgetting (Early Lab)</i> DUE: Write-Up 6-Neuropsych Assessment I Due: Write-Up 7-Neuropsych Assessment II	Ch. 24, pp. 823-864 Ch. 25, pp. 762-793
WEEK 13 Tues., Nov. 22	ADHD and Affective D/Os	Film: <i>Secret Life of the Manic Depressive (Early Lab)</i>	Ch. 22, pp. 751-780
Thurs., Nov. 23–24	Thanksgiving Break	No Class	
WEEK 14 Nov. 29–Dec. 01	Schizophrenia	Film:	Ch. 22, pp. 751-780
WEEK 15 Tues., Dec. 06	●* EXAM 3 ●*(Ch. 18, 20, 22, 24, 25)		
Wed., Dec. 07	Reading Day	Reading Day *OPTIONAL*: THE BRAIN DRAIN Neuroscience Competition	Carnegie Commons at 12:00 – 2:00
Wed., Dec. 14th	●* FINAL EXAM - Cumulative ●*	Time 12:00 – 2:30 p.m., Carnegie 205	

Introduction to Behavioral and Clinical Neuroscience Scholarly Activity Tracking Sheet



Name of Participant:

This scholarly activity sheet is due on the same day as the final exam, but you may submit it as soon as you complete your full hour of activity. There are two ways you can complete this requirement:

- 1.) Participate in scholarly research as a research participant (Preferred), for each 15 minutes in research participation, you earn 0.5 points. The typical online survey will take 15 minutes, so you may need to participate in several research studies. Attach the debriefing sheet or a copy of the informed consent form with this sheet.
- 2.) Attend a scholarly lecture (OHSU Brain Lectures, Campus Guest Speakers, Workshops, etc.). For each half hour you attend, it is worth 1 point. **Note:** Senior Projects Day or the Fall Undergraduate Research conference do not count, nor do projects or lectures that are required for other classes. Please remit the ticket or signage for each presentation, lecture, or workshop to the tracking sheet.

Title (Research/Presentation)	Name (Investigator/Speaker)	Date	Minutes	Brief Summary (Research or presentation)

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COURSE CONTACT OF UNDERSTANDING

I, _____ (PRINT YOUR NAME) hereby acknowledge that I have received a copy of the Introduction to Neuroscience course (PSY 252) syllabus for fall 2015. I have read the syllabus and I understand the course policies and requirements. I recognize that it is my responsibility to seek clarification regarding any aspect of the syllabus, the course requirements, the lab submission policy, attendance, or any other element of the grading policies if they are unclear to me.

SIGN YOUR NAME

DATE

PRINT YOUR NAME

Meaningful Information for the Course

What's your major? _____

Minor? _____

What is your end game plan (i.e., what career goals do you hope to achieve when you complete college)?

What area(s) of biopsychology/neuroscience do you find most interesting?

Why?

What do you expect from this course?

What are your concerns regarding this course?

How can I help you overcome these?

Have you recently experienced an injury?

If yes, does the injury affect your attention, learning, comfort? If so, how?

How many hours outside of class and lab do you believe it will take to succeed in this course?

What grade do you expect to earn from this course? A/A- B+/B/B- C+/C/C-

What is your behavioral plan to achieve this grade (if you don't have one, please consider visiting with me during office hours)?