

PSY 377 Physiological Psychology  
Monday and Wednesday 4:20 - 5:50

**Instructor contact information**

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Prerequisites: PSY 240 or BIO 206 or ENV 260 or MAT 137 or MAT 242 or SOC 279

**Textbook**

Pinel, J.P. (2018) Biopsychology 10th edition. Boston, MA. Pearson Education, Inc

**Course objectives:**

Summarize the anatomy and physiology of the nervous system

Critique the methods by which we learn about the brain and behavior

Examine how our environment or behavior affects our nervous system on a molecular, cellular, and systems level

Examine how molecular, cellular, or system level activity affects our behavior

Improve literacy of scientific publications, figures, and data

**Evaluation**

2 exams (A midterm and a cumulative final exam)

5 highest open-note quiz scores

Research project (Written component, oral presentation, and communication assignment)

**Research Assignment:**

The research assignment is the major communication component of the course. The objective is to promote the literacy of academic publications, integrate concepts across different fields of study, develop your skills in the presentation of scientific results, and give you the chance to explore a topic or question that appeals to your individual curiosities.

This assignment is threefold. First, you will be writing an original research paper. In this paper, you will describe a phenomenon or research question of your interest in the field of physiological psychology / biopsychology / behavioral neuroscience. For example, you may choose to learn more about what ways a person might be different from a neurotypical individual. Your target audience will be an expert in the field of interest, but make sure you define highly specialized terms that are unique to the topic. Keep your paper between 4 and 6 double-spaced pages with font size 12. Works cited page does not count towards the page limit.

Please include the following in your written report:

1. A description of the topic (an individual case study or an explanation)
2. The significance of the topic. How will understanding the topic improve the world?
3. A biological mechanism that explains the observed phenotype at a molecular, cellular, **OR** systems level.
4. A possible next step towards understanding the topic more completely.
5. At least 3 citations in APA style (see <https://owl.english.purdue.edu/owl/resource/560/03/> for details)

To get your brain started, here are some potential topics:

- How does our body chemistry change when we work multiple late-night shifts?
- Describe one neurological risk that is elevated in boxers, soccer, or football players.
- What is CLARITY and how could it revolutionize our understanding of the brain?
- What accounts for the remarkable talents of people with Asperger's syndrome?
- What are the evidence for and against adult neurogenesis?
- Discuss the neurobiological changes in opioid abuse and what can be done to slow the epidemic.
- What is the basis of compulsive gambling?
- Why is weight loss so difficult?
- Describe a behavioral test paradigm, including in depth explanations of how they are conducted. Explain how the results could be interpreted in several ways.
- How would akinesia impact someone's life?
- Choose a part of the brain. What would happen if this area were to be suddenly injured by a stroke?

Feel free to come with your own topics!

Need a hand with research? Check out the library research guide, or contact Ashley McMullin (amcmulli@depaul.edu)

Need a hand with writing? Check out the University Center for Writing-based Learning at <http://condor.depaul.edu/writing/>

### **Research Presentation:**

For the second part of this assignment, you will be describing the **most interesting results** (not a broad overview) of your research in an 8 to 10-minute presentation. It is not necessary, but it may help to create PowerPoint slides to guide you through your presentation. Provide background information on your topic and walk the class through one specific aspect of your research topic. Since your

presentation time is limited, please focus your talk on the most important and interesting findings!

### **Science Communication Assignment:**

The Science Communication Assignment is the third part of the assignment and is closely related to the main research paper that you will complete for this course. The main objective for this assignment is to help you become more fluent in communicating scientific concepts to a non-scientific audience.

You will be writing a short form online article (500-700 words) focusing on one easily relatable aspect of your research paper. However, for this assignment, your target audience will be a person without any formal education or training in the field of biology or psychology – but with an interest in the discipline, nonetheless. You may use technical jargon, but make sure to define the terms clearly in simple terms. Try to limit the technical language to 3 terms or fewer. Including analogies will help the reader draw comparisons between scientific concepts and our everyday lives, which will solidify their understanding of the concept. You will be using a professional tone but speak to the level of the ordinary person. Avoid writing clickbait or list articles.

Extra credit assignment: We are in the process of setting up the Department of Psychology blog which will feature content written by students and faculty members. At the end of this assignment, you will be given the opportunity to publish your content through the official departmental website. Should you be interested in pursuing science writing as a career option, this could be the first entry in your portfolio!

To obtain extra credit, your post will undergo an additional round of copy editing in conjunction with me, your editor. When your post goes live on the website, it becomes a chance for you to share with your friends and family some of the information you researched in this course.

### **Success in PSY377**

- Read the assignment before class. The material gets difficult quickly.
- Don't be afraid to ask questions in class (most preferred), at office hours, or by email. If you are confused about a topic, odds are good that others may be confused as well.
- Start thinking about your research question on day one. There are a lot of possible curiosities about the brain to explore.
- Be curious. Ask yourself "what if..." These types of test questions challenge your recollection of course material and push you to think on a higher level.

## Syllabus

(Subject to change)

Week	Date	Lecture Topic	Assignment
1	9/5	What is "Physiological Psychology?"	
2	9/10	Anatomy of the Nervous System	Ch 3
	9/12	Biology of the Nervous System	Ch 4
3	9/17	Methods of Biopsychology	<b>Ch 5 Research topic due</b>
	9/19	Neuropsychopharmacology	Ch 15
4	9/24	Neuropsychopharmacology	
	9/26	Sleep and the Circadian Rhythm	Ch 14
5	10/1	Sleep and the Circadian Rhythm	
	10/3	<b>Midterm Exam</b>	
6	10/8	Sensation and Perception	Ch 6
	10/10	Sensation and Perception	Ch 7
7	10/15	Lateralization and Language	Ch 16
	10/17	Learning and Memory	Ch 11
8	10/22	Learning and Memory	<b>Research paper due</b>
	10/24	Emotion	Ch 17
9	10/29	Pathological Biopsychology	Ch 18
	10/31	Pathological Biopsychology	
10	11/5	Research Presentations	<b>Science communication due</b>
	11/7	Research Presentations, cont.	
11	10/12	Research Presentations, cont.	<b>(Extra Credit) Sci comm. edits</b>
		<b>Final Exam</b>	

## Grading

Assignment	Points
Midterm (1/4 <sup>th</sup> of grade)	100
Final exam (1/4 <sup>th</sup> of grade)	100
5 of the best scores on open-note quizzes	50
Research project	
Research topic	20
Written assignment	50
Research presentation	40
Science communication assignment	40

## Grading scale

A	372 - 400	C	292 - 307
A-	360 - 371	C-	280 - 291
B+	348 - 359	D+	268 - 279
B	332 - 347	D	240 - 267
B-	320 - 331	F	239 or below
C+	308 - 319		

### **Assignments, lateness policy, make-up exams**

The research paper must be submitted online through D2L. Late assignments will be docked 10 points per day. Make up quizzes will not be given. In the event of serious personal illness or a family emergency, an alternate time schedule can be arranged. Send an email with appropriate documentation, and we will work it out.

### **Students with disabilities**

Please meet with me to discuss how accommodations can be made. You are not required to register with the Center for Students with Disabilities (CSD), but if accommodations need to be made, you will have to register. They will provide the services that will assist your success. The CSD can be found at DePaul's Lincoln Park Campus Student Center Room 370 (773 – 325 – 1677).

### **Sexual and relationship violence reporting**

Students may reach out to faculty as a source of help and support. Faculty are required to report information reported to them about experiences with sexual or relationship violence to DePaul's Title IX Coordinator. Students should also know that disclosing experiences with sexual or relationship violence in course assignments or discussion does not constitute a formal report to the University and will not begin the process of DePaul providing a response. Students seeking to report an incident of

sexual or relationship violence to DePaul should contact Public Safety (Lincoln Park: 773-325-7777; Loop: 312-362-8400) or the Dean of Students and Title IX Coordinator (Lincoln Park: 773-325-7290; Loop: 312-362-8066; TitleIXCoordinator@depaul.edu).

### **Statement on academic dishonesty**

DePaul University has a zero tolerance policy on academic dishonesty. All written assignments will be checked for originality. Academic dishonesty on an assignment or exams will result in receiving a zero for said assignment, and the student in question will be reported for appropriate disciplinary measures.