

San José State University  
Department of Psychology  
PSYC 030, Psychobiology, Sec. 01  
Spring 2024

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Office Hours: Tue. 1:15 - 2:30PM (and by appointment)  
Class Days/Time: Tue./Thurs. 10:30 – 11:45 AM  
Classroom: [DMH 355](#)  
Prerequisites: Bio 021 or Bio 065

**Description:** Biopsychologists try to understand the biological basis for behavior and mental processes. They try to determine why people do what they do, and in some cases, help them change what they are doing. This discipline involves examining many aspects of human functioning--overt actions, mental processes, and emotional and physiological responses. Biopsychologists deal with the smallest of units, such as a single molecule or individual nerve cell, and they also investigate large brain regions and interconnections between nervous, endocrine and immune systems. In this course, we will be covering a variety of topics, and the pace may be rather fast at times. Therefore, it is advised that you come to class!

**Course Goals and Learning Outcomes:** The goal of this course is to facilitate a basic understanding of neural mechanisms underlying behavior. By the end of the course, you should be able to describe activities of nerve cells as well as that of specific brain structures. You should also be able to describe and discuss complexities associated with specific sensory and motivational systems. A broad understanding of the biological basis of psychopathology is also an outcome of this course.

Finally, it is my goal that you gain a greater understanding of yourself and others, and that you become fascinated with biopsychology, even if you think you hate biology!

### **Learning Outcomes**

More specific course outcomes have been outlined in the *Summary of Events* following each quiz and exam (see below). Course and program learning objectives are as follows.

#### Course Learning Outcomes (CLOs)

Upon successful completion of this course, Psych 30 students will be able to:

CLO1 – *Students will be able to* –identify, describe, and communicate the major concepts related to basic neuroanatomy, neurophysiology and psychopharmacology. Assessment for this will be in quiz 1, midterm I and in an in-class activity

CLO2 – *Students will be able to* –describe, and communicate the major transduction mechanisms, neuroanatomical pathways and theoretical perspectives associated with vision and nonvisual sensory systems, motivational systems and learning processes. Assessment for this CLO will be conducted in quizzes 2 and 3, and midterms I and II.

CLO3 – *Students will be able to* –identify, describe, and communicate experimental approaches and associated empirical findings for various methodological approaches in biopsychology. Assessment for this CLO will be conducted primarily in Midterm I, but also in quizzes 1 - 3, and midterm II.

CLO4 – *Students will be able to* – think critically and creatively about biopsychological approaches to address issues related to behavioral and mental health processes. This CLO will be assessed in essay-type questions on midterm II and the final exam.

CLO5 – *Students will be able to* – apply biopsychological principles to individual, interpersonal and group behavioral and mental health issues. This will be assessed on the final exam.

Program Learning Outcomes (PLO) Upon successful completion of the psychology major....

PLO1 – Knowledge Base of Psychology – Students will be able to identify, describe, and communicate the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.

PLO2 – Research Methods in Psychology – Students will be able to design, implement, and communicate basic research methods in psychology, including research design, data analysis, and interpretations.

PLO3 – Critical Thinking Skills in Psychology – Students will be able to use critical and creative thinking, skeptical inquiry, and a scientific approach to address issues related to behavior and mental processes.

PLO4 – Application of Psychology – Students will be able to apply psychological principles to individual, interpersonal, group, and societal issues.

PLO5 – Values in Psychology – Students will value empirical evidence, tolerate ambiguity, act ethically, and recognize their role and responsibility as a member of society.

**Text :**

Freberg, L.A. (2019). *Discovering Behavioral Neuroscience: An Introduction to Biological Psychology* (4<sup>th</sup> Ed). Belmont, CA, Cengage Learning.

ISBN-10: 1305088700

ISBN: 9781337570930

Suggested Resource: Neuroscience on the Internet: <http://www.neuroguide.com>

**Requirements:** The requirements for this class include four quizzes and four examinations (three midterms and a final). Each quiz is worth about 9% of your grade, and the midterm examinations each count 15% toward the final grade. The final exam will be worth 19%. It is strongly recommended that students take every advantage to earn bonus points (see **Extra Credit Points** below). They will be offered throughout the semester.

The format for quizzes and midterms is objective (multiple choice, true/false, identify, match) and short answer. Quizzes are to be completed at home, which means that you will be on your honor when you take them. You may use your text, or notes but you may NOT use Google, ChatGPT, or consult with other persons. Quizzes and other course materials will be available [Canvas Learning Management System course login website](#) at <http://sjsu.instructure.com>. All answers are to be submitted in Canvas. Midterm exams are scheduled on Thursdays. The final exam date is scheduled for Thursday 5/16 @9:45 AM.

**Extra Credit Points:** a maximum of 8 extra credit points may be earned by attending research presentations and for completion of activities listed on the “Bonus Point” handout. To receive credit, you must write a brief summary (1 page maximum) of each presentation, except noted elsewhere (Due 5/9). All summaries are to be typed (double-spaced) referencing the presentation. There may also be extra credit opportunities in class, and these are in addition to the 8 points.

**Grading:** Due to the fast-paced nature of this course, there will be no early, late, or make-up exams or quizzes. Please check your schedule to ensure that you have no conflicts with the test dates. However, if you have a written medical excuse for missing an exam, a makeup exam will be given within a week of the missed exam, or at the discretion of the instructor. Please note, it is the student’s responsibility to make arrangements for any needed make-up assignments.

### **Classroom Protocol**

To succeed in this course, attendance is critical. You should come prepared for class discussions with a completion of course readings. Students are responsible for keeping current on changes that may occur on the tentative schedule of events in the syllabus. Students are expected to maintain a level of professional and courteous behavior at all times. If we meet online for review sessions, please be aware whether your mic is muted and when your camera is on.

### Cell phones and other electronic devices

You are to turn off cell phones and other electronic devices before the beginning of class. For in-class (“live”) instruction: Laptops are permitted for note-taking purposes only. If you use your laptop to take notes you should sit at the front of the class. Laptop use for purposes other than taking notes for 30 will not be permitted. Students not abiding by this policy will be asked to leave the class and will not be permitted to use their laptop for the remaining semester.

### Communication with instructor

Use email, office hours, or class time. I will respond to emails M-F 9:00 – 5:00. Please allow 1-2 business days for a response. Please note, email is not a mechanism to get extensive help with course content. Please come to my office hours for these other issues that require more discussion. Lecture notes will not be emailed to students. When lectures are missed, it is your responsibility to get

lecture notes from a classmate. When sending an email to the instructor, please be certain to be specific about the topic. For example, the subject line should include the course (“Psych 30”) and brief topic (e.g., “Appointment”).

**Consent for Recording of Class and Public Sharing of Instructor Material University Policy s12-7, <http://www.sjsu.edu/senate/docs/S12-7.pdf>, requires students to obtain instructor’s permission to record the course.**

- “Common courtesy and professional behavior dictates that you notify someone when you are recording him/her. You must obtain the instructor’s permission to make audio or video recordings in this class. This permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”
- “If you would like to record course lectures, please obtain permission from your instructor in writing (via email is ok) or orally and indicate whether you will record for the whole semester or on a class by class basis.”
- “Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor-generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent”.

**Faculty Web Page and MYSJSU Messaging:** Copies of the course materials such as the syllabus, major assignment handouts, etc. may be found [Canvas Learning Management System course login website](#) at <http://sjsu.instructure.com>. You are responsible for regularly checking with the messaging system through [MySJSU](#) at <http://my.sjsu.edu> (or other communication system as indicated by the instructor) to learn of any updates.

### **Dropping and Adding**

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester’s [Catalog Policies](#) section at <http://info.sjsu.edu/static/catalog/policies.html>. Add/drop deadlines can be found on the [current academic calendar](#) web page located at [http://www.sjsu.edu/academic\\_programs/calendars/academic\\_calendar/](http://www.sjsu.edu/academic_programs/calendars/academic_calendar/). The [Late Drop Policy](#) is available at <http://www.sjsu.edu/aars/policies/latedrops/policy/>. Students should be aware of the current deadlines and penalties for dropping classes.

Information about the latest changes and news is available at the [Advising Hub](#) at <http://www.sjsu.edu/advising/>. Procedures about add/drops, academic

renewal, fee payment, withdrawal and so forth. These are listed under:  
<http://info.sjsu.edu/home/schedules.html>

### **University Policies**

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>

### **Student Technology Resources:**

Computer labs for student use are available in the Academic Success Center located on the 1<sup>st</sup> floor of Clark Hall and on the 2<sup>nd</sup> floor of the Student Union. Additional computer labs may be available in your department/college. Computers are also available in the Martin Luther King Library.

A wide variety of audio-visual equipment is available for student checkout from Media Services located in IRC 112. These items include digital and VHS camcorders, VHS and Beta video players, 16 mm, slide, overhead, DVD, CD, and audiotape players, sound systems, wireless microphones, projection screens and monitors.

Learning Assistance Resource Center: The Learning Assistance Resource Center (LARC) is located in Room 600 in the Student Services Center. It is designed to assist students in the development of their full academic potential and to motivate them to become self-directed learners. The [LARC website](http://www.sjsu.edu/larc/) is located at <http://www.sjsu.edu/larc/>. The Peer Mentor Center is located on the 1st floor of Clark Hall in the Academic Success Center. The Peer Mentor Center is staffed with Peer Mentors who excel in helping students manage university life as well as tutoring. Peer Connections can be found here:  
<https://www.sjsu.edu/peerconnections/index.php>

**The following provides a quick summary of important course events. I have also included a brief description of the learning outcomes for each section. You may find this, along with the study guides, useful when preparing for exams.** A detailed schedule of events is also provided, but this may be modified as instructor deems necessary.

You are responsible for noting any changes that may occur during the semester.

## **Summary of Events**

### **Quiz 1**

Date: Thursday 2/8 (Due 2/13)  
Lectures: January 25 – February 8

Outcomes: Describe the mind/body issue and key historical events.  
Demonstrate a clear understanding of structure and function of neurons and of the CNS.  
Understand invasive and noninvasive methods for investigating brain function.

### **Midterm I**

Date: Thursday, February 22<sup>nd</sup>  
Lectures: January 25 – February 20  
Chapters: Chapters 1-4 (select pages from chapter 4)  
Outcomes: Demonstrate a complete understanding of the functioning of the neuron: electrophysiological and chemical properties; interneuronal communication; basic principles of drug effects on neuronal.  
Be able to identify major structures and function of the brain.  
Understand some general methods for investigating brain and behavior.

### **Quiz 2**

Date: Thursday 3/7 (Due Tuesday 3/12)  
Lectures: 2/ 27 – 3/7  
Outcomes: Demonstrate an understanding of how the CNS develops.  
Be able to identify components of the visual system, and describe how vision occurs.  
Be able to describe how somatosensation is processed.

### **Midterm II**

Date: Thursday, March 21<sup>st</sup>  
Lectures: February 22 – March 19  
Chapters: Chapters 4 (select pp.), 5 – 6 (select sections)  
Outcomes: Complete understanding of psychopharmacology and a basic understanding of vision. Basic understanding of brain development and brain plasticity.

### **Quiz 3**

Date: Thursday 4/4 (Due 4/9)  
Lectures: 3/26 – 3/28  
Outcomes: Demonstrate a basic understanding of motivational systems.  
What makes you eat and sleep?

### **Midterm III**

Date: Tues, April 18<sup>th</sup>  
Lectures: March 26 – April 16  
Chapters: Chapters 6, 7, 9, 11

Outcomes: Visual and nonvisual sensation and perception (e.g., how the physical energy is translated in to neural energy and then goes to brain)  
 An understanding of underlying mechanisms driving specific motivations. An understanding of the set-point model works.  
 Describe sleep and its proposed purposes.  
 Describe mechanism involved with learning and proposed purpose.

**Quiz 4**

Date: Tuesday 4/30 (Due 5/2)  
 Lectures: 4/23 – 4/30  
 Outcomes: An understanding of the biological basis and specific brain regions associated with stress, aggression and reward. For this one you might have to read ahead a bit.

**Final Exam**

Date: Thursday May16<sup>th</sup>, **9:45 AM - 12:00 PM.**  
 Lectures: All  
 Chapters: All reading with particular focus on chapters 14 and 16, as well as any material covered following Midterm III.

*Please note: Quizzes will be take-home tests. This means you are on your honor when taking these quizzes. Your time is unlimited; however, you may not discuss the questions or responses with other individuals. Collaborative work will result in a zero for all. All quizzes are to be submitted in CANVAS; short answers are to be turned in to the instructor within the first 10 minutes of lecture.*

**Performance Outcomes and Associated Points**

<b>Assignment</b>	<b>Approximate percent</b>	<b>Points</b>
Quizzes (4)	9% each	27 each (108 total)
Midterms (3)	15% each	45 each (135 total)
Final Exam	19%	57
<b>Total</b>	<b>100%</b>	<b>300</b>



### Grading Scale (300 points)

<i>Total Points</i>	<i>Percentage</i>	<i>Grade</i>
269 – 300	90 – 100	A- to A+
239 – 268	80 – 89	B- to B+
194 – 238	65 – 75	C- to C+
150 – 193	50 – 64	D- to D+
149	less than 50	F

*Tentative Schedule of Events (subject to change with fair notice):*

Week	Date	Reading/Lecture Topic	Daily Events
1	1/25	Chapter 1: Introduction and Course Expectations	See "Online Learning" in the Modules, Bonus Points, Scheduled Events, Biopsych Lecture 1
2	1/30	Chapter 2: Anatomy of the Nervous System	
	2/1	Chapter 2: Nervous System cont.	
3	2/6	Chapter 3: Cells of the Nervous System	
	2/8	Chapter 3: Membrane and Action Potentials and Synapses	Quiz 1 (Chapters 1-3)
4	2/13	<b>Action Potentials and Synapses</b>	Quiz 1 Due
	2/15	Postsynaptic Potentials	
5	2/20	Postsynaptic Potentials	
	2/22	<b>Midterm I</b>	<i>Chapters 1- 3 (TBD: select pages from chapter 4)</i>
6	2/27	Chapter 4: Psychopharmacology	
	2/29	Chapter 4: Psychopharmacology	
7	3/5	Chapter 5: Development of the Human Brain	
	3/7	Chapter 5: Development of the Human Brain	Quiz 2
8	3/12	<b>Chapter 6: Vision</b>	Quiz 2 Due
	3/14	Chapter 6: Vision	
9	3/19	Chapter 6: Vision	
	3/21	<b>Midterm II</b>	Chapters 4 (select pp.), 5-6
10	3/26	Chapter 7: Nonvisual Sensation-Chemical Receptors	
	3/28	Chapter 7: Nonvisual Chemical Sensory Systems	
11	4/2	<i>Spring Break</i>	
	4/4	<i>Spring Break</i>	Quiz 3

12	4/9	<i>Chapter 9: Motivation--Thirst, and Hunger</i>	Quiz 3 due
	4/11	Chapter 11: Sleep/Waking	
13	4/16	<b>Chapter 11: Sleep/Waking</b>	
	4/18	Midterm III	<b>Chapters 6, 7, 9, 11 (12 TBD)</b>
14	4/23	Chapter 12: Learning and Memory	
	4/25	Conference No Class	
15	4/30	Chapter 12: Learning and Memory	Quiz 4
	5/2	Chapter 14: Emotion, Aggression. Reward	<b>Quiz 4 due</b>
16	5/7	Chapter 16: Psychological Disorders	
	5/9	<b>Chapter 16: Psychological Disorders</b>	EXTRA CREDIT DUE
Final Date	Thursday 5/16	<b>FINAL EXAM 9:45 - 12:00PM</b>	<b>ALL</b>