



**San José State University**  
**Department of Psychology**  
**PSYC/BIO 129-01,**  
**Neuroscience (48620/50117), Fall 2023**

<b>Instructor:</b>	Jill Citron, PhD
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<b>Drop-in Hours:</b>	Monday & Tuesday, 12:20 pm – 1:20 pm, and by appointment.
<b>Office Location:</b>	DMH 352 & Zoom link is available on Canvas
<b>Class Days/Time:</b>	Monday & Wednesday, 3:00 pm – 4:15 pm
<b>Classroom Location:</b>	DMH 356
<b>Prerequisites:</b>	Either: (a) PSYC 30 and 3 units of BIO, or 9 units of BIO You must <u>complete</u> the prerequisites before taking this course.

### **CANVAS and MYSJSU Messaging**

Copies of some course materials such as the syllabus, major assignment handouts, etc. may be found on Canvas. Messages to the class may be sent through Canvas or MYSJSU.

### **Course Description**

Neuroscience is defined as the study of the nervous system. This field comprises several related disciplines including: Neuroanatomy, neurochemistry, neuropharmacology, neurophysiology, neuroimmunology, and neuropathology. The united efforts of such disciplines have produced a better understanding of the function of the nervous system and its relationship to behavior. This course will examine each of these sub-disciplines in detail, with a focus on both the healthy nervous system and disorders of the nervous system including depression, Alzheimer's disease, and schizophrenia. We will examine specific topics and research methods in depth.

### **Communication with instructor**

Use email, office hours, or class time to ask questions. I respond to email M-F 9:00-5:00. Please allow 1-2 days for a response. When emailing, include a relevant title and our course number (129). If you have extensive questions about an assignment or class work, please come to office hours. Do not hesitate to reach out to me during office hours, after class, or via email. I welcome your questions.

## Course Goals and Student Learning Outcomes (CLOs)

Upon successful completion of this course, Psych/Bio 129 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 an Infographic #1, and Section Test #1

**CLO2:** *Students will be able to* -describe and communicate the major transduction mechanisms, neuroanatomical pathways and theoretical perspectives associated with visual and nonvisual sensory systems, motivational systems and learning processes. Assessment for this CLO will be conducted in Class Activities, Infographic #2, Hypothes.is and Section Test #2.

**CLO3:** *Students will be able to* -identify, describe, and communicate experimental approaches and associated empirical finding for various methodological approaches in neuroscience. Assessment for CLO will be conducted primarily in Hypothes.is and Section Test #2.

**CLO4:** *Students will be able to* -think critically and creatively about neuroscience to address issues related to behavioral and mental health processes. This CLO will be assessed in Hypothes.is, Section Rest #3, and Policy Statement.

**CLO5:** *Students will be able to*- apply neuroscience principles to individual, interpersonal and group behavior and mental health issues. This CLO will be assessed in Lab #2, Section Test #3, Case Study Presentations, and Policy Statements.

**CLO6:** Review empirical findings from the scientific literature concerning a topic relevant to the course allowing them to communicate complex topics relating to the nervous system and behavior. This CLO will be assessed in Hypothes.is activities, Lab #2, Section Test #3, Case Study Presentations, and Policy Statements.

## Program Learning Outcomes (PLOs)

Upon successful completion of the psychology major requirements, students will be able to:

**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- 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.

The goals for this course fall into three categories. In the first portion of our course, we will focus on developing a general understanding of the philosophical issues driving much of contemporary neuroscience research, learning the mechanisms that drive early brain development and deepening our knowledge of the physiology of

the central nervous systems. The second section will explore the mechanisms underlying the different sensory systems. In the course's final section, we will apply our understanding of biological mechanisms to various complex behaviors ranging from motivation and circadian rhythms to learning and language.

Our class meets on campus. We will use Canvas for discussions, assignment submissions, and as a repository for articles we will use during the semester. Be sure to sign up for Canvas notifications as I send out announcements during the semester. Canvas is an important component of our class but it does NOT replace class.

**It is strongly recommended** that students use the Chrome Web Browser when using Canvas. Using Chrome will decrease the number of glitches and errors you experience, as Canvas was developed using the Chrome platform.

In addition, update your Canvas setting to receive messages from this course, as announcements are sent out on a regular basis.

**Note:** clearing your cache may help if you have trouble logging into the site.

### Accessing Course Canvas site

To access the Canvas site go to <http://www.sjsu.edu/at/ec/canvas/> and click on “Log in to Canvas”

**Username** = *SJSU 9-digit ID*

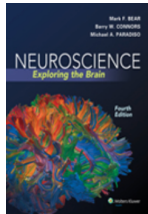
**Password** = *your current SJSUOne password*

For additional information or help with logging in:

**Canvas Student Tutorial:** <http://www.sjsu.edu/at/ec/canvas/>

### Required Textbook

Bear, Mark., Barry, W. Connors, Michael A. Paradiso. (2016). Neuroscience: Exploring the Brain (Enhanced 4th edition). Jones & Bartlett Learning.



The Enhanced 4<sup>th</sup> edition includes an access code to the Navigate system. The enhanced edition is not required but will provide you with additional resources to support your learning during the semester. The PDF version is available for free. The textbook is available for purchase at several web locations for \$20 or less. Additional readings will be posted on Canvas in PDF format.

### Library Liaison

The SJSU library has a librarian who specializes in psychology (and other social sciences), and this librarian can serve as a very valuable resource for helping you to develop research ideas and locating appropriate research materials. The library also has an abundance of resources for doing psychology research: Christa Bailey, 408-808-2422, [christa.bailey@sjsu.edu](mailto:christa.bailey@sjsu.edu), <http://libguides.sjsu.edu/psychology>

### Classroom Protocol

As a member of this class, you are part of a community. Students are expected to maintain a level of professional and courteous behavior. You are required to put your cell phone and other distractors away before the beginning of class. We will be respectful of our class members and expect the same respect in return. Do not have side conversations, make unrelated comments in class, or look for deals on eBay during class. You may not realize that your actions are distracting for those around you. Students that do not abide by these policies (after

being alerted to their behavior) will be asked to leave the class.

## Diversity Statement

This class strives to be an inclusive community, learning from the many perspectives that come from having differing backgrounds and beliefs. As a community, we aim to be respectful of all. We reject all forms of prejudice and discrimination, including but not limited to those based on age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, and sexual orientation. Together we can create an environment that supports inquiry and self-expression, and respect for diverse viewpoints.

## 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, <https://catalog.sjsu.edu/>, policy section. The Late Drop Policy is available at <https://www.sjsu.edu/aars/policies/latedrops/policy/>. It is the student's responsibility to make sure classes are dropped <https://www.sjsu.edu/senate/docs/S20-9.pdf>. Visit the Advising Hub at <https://www.sjsu.edu/advising/> with addition questions. This semester the last day to add a class or drop a class without a "W" is September 15<sup>th</sup>.

## Attendance

Students are expected to attend all meetings for the courses in which they are enrolled as they are responsible for material discussed therein, and active participation is frequently essential to ensure maximum benefit to all class members. Life happens. If you are going to miss class, please let me know as soon as you are able.

*According to University Policy F15-12, "Students are expected to attend all meetings for the courses in which they are enrolled as they are responsible for material discussed therein and active participation is frequently essential to ensure maximum benefit to all class members. In some cases, attendance is fundamental to course objectives; for example, students may be required to interact with others in the class. Attendance is the responsibility of the student. Participation may be used as a criterion for grading when the parameters and their evaluation are clearly defined in the course syllabus and the percentage of the overall grade is stated."*

## Assignments and Grading Policy

During this course, we will participate in class activities and discussions. There will be two lab that correspond directly to material being covered in class. 2 laboratory exercises, three examinations (two midterms and a final exam), a paper topic, and one research paper.

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at <http://www.sjsu.edu/senate/docs/S12-3.pdf>.

*Anticipate that your grades in Canvas will continue to change throughout the semester. Do not contact me at the end of the semester asking if I will round up your grade. I want all my students to succeed and will always round grades up (not down) when possible.*

## Definition of a Credit Hour

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of forty-five hours over the length of the course. As an example, the expectation of work for a 3-credit course is 150 minutes of direct faculty instruction and six-hours of out-of-class student work each week.

Please review the following sources and policies, as well:

- University Syllabus Policy S16-9 at <http://www.sjsu.edu/senate/docs/S16-9.pdf>
- Office of Graduate and Undergraduate Programs' Syllabus Information web page at <http://www.sjsu.edu/gup/syllabusinfo/>

## Make-up Exams and Late Assignments

Please check your schedule to ensure that you have no conflicts with due dates. Let me know if you need an extension. Contact me as early in the semester as possible so that we can create an alternative plan.

### Academic integrity

Academic integrity is essential to the mission of San Jose State University. Familiarize yourself with the SJSU Academic Integrity Policy <https://www.sjsu.edu/senate/docs/F15-7.pdf>. When practiced, academic integrity ensures that students are fairly graded. Violations undermine the educational process and will not be tolerated. It demonstrates a lack of respect for oneself, fellow students, the course instructor, devalues your degree, and can end your academic career. The Student Conduct and Ethical Development is available at <https://www.sjsu.edu/studentconduct/>. All students must use Turn-It-In to ensure the academic integrity of your writing.

### GRADING INFORMATION AND MAJOR ASSIGNMENTS:

Your final grade will be based on the number of points that you earn during the semester. The following table provides a breakdown of the points that you can earn during the semester.

Assignment	How Many?	Points Per Assignment	Total Points	<small>Approximate</small> % Final Grade
Hypothes.is	3	10	30	20%
Lab Exercise	1	10	10	6%
Policy Statement & Presentation	1	20	20	13%
Discussion	1	20	20	13%
Section Tests	3	25	75	45%
Name Coach	1	5	5	3%
<b>Total:</b>			<b>160</b>	<b>100%</b>

### Grading Scale:

Percent	Grade
100 – 94	A
93-90	A-
89 – 87	B+
86-84	B
83-80	B-
79 – 77	C+
76-74	C
73-70	C-
69-67	D+
66 – 64	D
63 -60	D-
59 or below	F

**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 Resources**

### **Student Computer Resources –**

Computer labs and other technological resources for students can be found in various places on campus:

- For information regarding the loan of laptops, tablets, and other computer materials; <https://library.sjsu.edu/student-computing-services/student-computing-services>
- For IT Support visit - <https://www.sjsu.edu/it/support/service-desk/index.php>
- For a list of software available to all SJSU students visit - <https://library.sjsu.edu/student-computing-services/software-available>

### **ACCESS Success Center**

The Academic Counseling Center for Excellence in Social Sciences (ACCESS) Success Center “provides general education advising for undergraduate students majoring or intending to major in any of the departments in The College of Social Sciences.” Visit their webpage for more information and to schedule an online appointment, <https://www.sjsu.edu/education/studentsuccesscenter/advising-and-tutoring.php>.

### **Accessible Education Center (AEC)**

Ability Redefined - Please reach out to me as soon as possible in the beginning of the semester, for any support. “If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities requesting accommodations must register with AEC to establish a record of their disability.” [Academic Senate Policy F06-2 \[pdf\]](#)

### **SJSU Peer Connections**

Peer Connections website “offers free mentoring, tutoring, and supplemental instruction services for students at SJSU. Peer Educators are students just like you; they understand the triumphs and challenges of being a student at San José State University.” If you have questions about services, contact the Peer Connections at 408-924-2587 or email at [peerconnections@sjsu.edu](mailto:peerconnections@sjsu.edu), or visit their webpage for more information, <https://peerconnections.sjsu.edu/programs/tutoring/index.html>

**SJSU Writing Center**– Check for different ways to access these services.

The SJSU Writing Center “offers a variety of resources to help students become better writers, and all of our services are free for SJSU students.” If you have questions about services, call the Writing Center at 408.924.2308 or email us at [writingcenter@sjsu.edu](mailto:writingcenter@sjsu.edu), or visit their webpage to make an online appointment <https://www.sjsu.edu/writingcenter/>

### **SJSU Counseling and Psychological Services (CAPS)**

SJSU Counseling and Psychological Services invites “all students to come into Counseling and Psychological Services, located at the Student Wellness Center, room 300B, for any support.

*If you have questions about services, contact CAPS at (408) 924-5910 or email at [counseling.services@sjsu.edu](mailto:counseling.services@sjsu.edu)* or visit their webpage, <https://www.sjsu.edu/counseling/>

### **Student Support Services-**

Housing Assistance for students that lack stable and adequate housing <https://www.sjsu.edu/sjsucares/get-assistance/housing.php>

**Spartan Food Pantry** is a walk-in full-service food assistance program for qualifying students.

<https://www.sjsu.edu/sjsucares/get-assistance/spartan-food-pantry/index.html>

**CalFresh Foods** offers monthly cash assistance to pay for groceries. CalFresh has supported many students who are experiencing budget restraints. <https://www.sjsu.edu/sjsucares/get-assistance/calfresh.php>

### **Academic Integrity and Artificial Intelligence**

A reminder about academic integrity and Chat GPT: All cases of academic misconduct will be referred to the Office of Student Conduct. Academic Misconduct includes (but is not necessarily limited to) using ideas, words, images, or content in any other media that you did not create and presenting that content as if you were the creator.

Copying content that you have not created—either directly or in a modified form—without properly acknowledging the creator qualifies as academic misconduct, as does utilizing unauthorized digital tools such as artificial intelligence to create content. An assignment that is found to have been plagiarized or to have used unauthorized tools will automatically receive a zero and you will not be given an opportunity to repeat the assignment for a passing grade. Depending on the severity of the case, academic misconduct may result in a failing grade in the course.

A simple guide to follow is, if more than four words are taken from another source, it must be cited.

### **Major Assignments**

**Hypothes.is Assignment:** The assignment is a collaborative annotation activity aimed at developing critical analytic skills when reading scientific literature. You will identify one statement in the article that you agree with. This is done by highlighting the portion of text and writing a concise statement explaining what you agree with and why. Finally, identify a question that you have about the content. Again, Highlight this portion of the text. In the annotation note, state your question. Alternately, you might decide to respond to a query from one of your peers instead. If you decide to answer a question, you may do so by responding directly in the question thread. Directions on using the Hypothes.is App are included in the assignment instructions.

**Policy Statements & Presentation:** With a collaborative team, you will research your assigned athlete, who is either intersex or transgender. Based on your research and understanding, you will create a position statement concerning the evaluation of the hormone profile of the athlete. To support your stance, you will use three peer-reviewed academic articles.

**Name Coach:** Name Coach functions as a recording and playback platform, allowing students and instructors within a course to effortlessly record and share the correct pronunciation of their names. This feature enables all members of the course to listen and learn the accurate way to pronounce each other's names. Details instructions are provided in Canvas.

**Naegleria fowleri amoeba Discussion:** This discussion will require you to do background reading and analysis before engaging in discussion with your peers. Together we will explore the intersection of the Naegleria fowleri amoeba, mammalian evolution, and climate change!

## **Major Assignments Due Dates**

Note: This schedule is subject to modification (with fair warning, no surprises, promise) as necessary to accommodate flexibility in our class schedule.

<b><u>Assignment</u></b>	<b><u>Location</u></b>
<b><u>Hypothes.is #1</u></b> Date: Monday, September 19 <sup>th</sup>	Canvas
<b><u>Section #1 Test</u></b> Date: Wednesday, September 27 <sup>th</sup>	In-Class
<b><u>Naegleria fowleri Discussion</u></b> Date: Wednesday, October 8 <sup>th</sup>	Canvas Discussion
<b><u>Hypothes.is #2</u></b> Date: Monday, October 18 <sup>th</sup>	Canvas
<b><u>Section #2 Test</u></b> Date: Monday, October 23 <sup>rd</sup>	In-Class
<b><u>Lab</u></b> Date: Monday, November 6 <sup>th</sup>	Canvas
<b><u>Hypothes.is #3</u></b> Date: Wednesday, November 8 <sup>th</sup>	Canvas
<b><u>Case Study Presentations</u></b> Date: 11/27, 11/29, 12/04, 12/06	In-Class
<b><u>Section #3 Test</u></b> Date: Friday, December 8 <sup>th</sup> 12:15 pm – 2:30 pm	In-Class



# COURSE SCHEDULE

Note: This schedule is subject to modification (with fair warning, no surprises, promise) as necessary to accommodate flexibility in our class schedule.

Week	Date	Topics	Reading Due for Class	Assignment
1	M- 8/21	<ul style="list-style-type: none"> <li>• Course Introduction</li> <li>• Review of Syllabus</li> <li>• Course Requirements</li> <li>• Study Skills</li> <li>• Review of Covid-19 Safety Protocols</li> </ul>	Always complete chapter reading before class.	<u>Due:</u> <i>Name Coach -due Sunday 9/3</i>
<b>** PART ONE - FOUNDATIONS **</b>				
	W- 8/23	Foundations	Chapter 1	
2	M- 8/28	Neurons & Glia	Chapter 2	
	W- 8/30	Neuronal Membrane at Rest	Chapter 3	
3	M- 9/04	No Class- Labor Day		
	W- 9/06	The Action Potential	Chapter 4	
4	M- 9/11	Synaptic Transmission	Chapter 5	
	W- 9/13	Neurotransmitter Systems	Chapter 6	Hypothes.is #1Due
5	M- 9/18	The Structure of the Nervous System	Chapter 7	
	W- 9/20	The Structure of the Nervous System	Chapter 7	
6	M- 9/25	NO CLASS		
	W- 9/27	Section #1 Test		Chapters 1-7
<b>** PART TWO– SENSORY AND MOTOR **</b>				
7	M- 10/02	The Chemical Senses	Chapter 8	
	W- 10/04	The Eye	Chapter 9	
8	M- 10/09	No Class – Discussion Assignment		Naegleria fowleri. discussion
	W- 10/11	The Central Visual System	Chapter 10	
9	M- 10/16	The Auditory and Vestibular System	Chapter 11	
	W- 10/18	The Somatic Sensory System	Chapters 12	Hypothes.is #2
10	M- 10/23	Spinal Control of Movement	Chapters 13	
	W- 10/25	Brain Control of Movement	Chapter 14	

11	M-10/30	<b>Section #2 Test</b>	Chapters 8-14	<b>Case Study Team Formation</b>
	W- 11/01	Scary Science		
**		<b>PART THREE– Behavior</b>		**
12	M- 11/06	Chemical Control of the Brain & Behavior	Chapter 15	
	W- 11/08	Motivation	Chapter 16	<b>Hypothesis #3</b>
13	M- 11/13	Sex and the Brain	Chapter 17	
	W- 11/15	Sex and the Brain	Chapter 17	
14	M- 11/20	Brain Mechanisms of Emotion	Chapter 18	
	W- 11/22	No Class- Thanksgiving Break		
15	M- 11/27	Brain Rhythms and Sleep	Chapter 19	
	W- 11/29	<b>Case Studies &amp; Presentation of Policy Statement</b>		<b>Team #1, A, B, &amp; C</b>
16	M- 12/04	<b>Case Studies &amp; Presentation of Policy Statement</b>		<b>Team #2 A, B, &amp; C</b>
	W- 12/06	<b>Case Studies &amp; Presentation of Policy Statement</b>		<b>Team #3, A, B, &amp; C</b>
<b>Final</b>		<b>Section #3 Test</b> Friday, December 8 <sup>th</sup> 12:15 pm – 2:30 pm		