Instructor: Valerie Carr
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Office Hours: Tues/Thurs, 4:30-5:30pm, and by appointment
Class Days/Time: Tues/Thurs, 9:00-10:15am
Classroom: DMH 347
Prerequisites: PSYC 30 equivalent

Course Description
The goal of this course is to help you build a strong theoretical and methodological foundation for understanding the nervous system. The field of neuroscience is incredibly extensive and interdisciplinary, and as such we will explore the nervous system through a variety of approaches—neuroanatomy, neuropharmacology, neurophysiology, and neuropsychology. Basic research will be discussed in lectures and in student-led discussions of recent scientific findings. Given that the function of the nervous system is never as conspicuous and astonishing as when it fails us, we will also focus on dysfunction of the nervous system and advances in treating disorders of the nervous system.

Course Format
This is a graduate seminar, and as such, student presentations and group discussions will comprise the majority of the course. That said, several lectures will be provided, particularly early in the course, to ensure basic understanding of assigned topics prior to discussion. Participation is essential for optimal performance in the course. Keeping pace with the reading schedule and being proactive about seeking help are similarly important in achieving a successful outcome. Please ask questions when you don’t understand information in lecture, in the readings, or during discussions -- asking questions and offering ideas is welcomed and encouraged!

Canvas
Course materials such as the syllabus, lectures slides, assignment instructions, readings, etc, can be found on the Canvas learning management system course website at http://sjsu.instructure.com. You are responsible for regularly checking Canvas to learn of any updates.
Course Learning Outcomes (CLO)
Upon successful completion of this course, students will be able to:

• **Content goals**
  o CLO1: Describe the major concepts related to basic neuroanatomy, neurophysiology and psychopharmacology.
  o CLO2: Describe the major transduction mechanisms, neuroanatomical pathways and theoretical perspectives associated with sensory systems, motor systems, emotional systems, language, and learning processes.
  o CLO3: Describe methodological approaches and associated findings used in neuroscience.
  o CLO4: Describe dysfunction of the nervous system and its association with various mental health issues.
  o Content goals will be assessed via three quizzes.

• **Critical thinking goals**
  o CLO5: Discuss how knowledge of neuroscience can be used to interpret a wide range of behavioral phenomena, including your own.
  o Critical thinking goals will be assessed with quizzes, reaction papers, and a final project.

• **Communication goals**
  o CLO6: Present and discuss empirical findings from the scientific literature concerning topics relevant to the course.
  o CLO7: Given a topic of your choosing related to neuroscience, review the relevant literature and propose a series of experiments that will further our knowledge of said topic.
  o Communication goals will be assessed via student-led discussions of empirical work and a final project with both oral and written components.

Program Learning Outcomes (PLO)
Upon successful completion of the psychology major requirements, students will be able to:

• **Knowledge Base**
  o Students completing the MA in Psychology program will understand the major theoretical perspectives and research methods across areas of experimental psychology, i.e., Developmental, Social, Cognitive, and Physiological.
    ▪ PLO1: Understand the major theoretical perspectives and research methods across areas of experimental psychology, i.e., Developmental, Social, Cognitive, and Physiological.

• **Research Methods and Scholarship**
  o Graduates of our program will possess an advanced level of competence in research methods, statistical techniques, and technical writing skills. Students completing the MA in Psychology program are required to complete a thesis. The thesis will:
    ▪ PLO2.1: Demonstrate creative problem-solving in the design, implementation of empirical research.
    ▪ PLO2.2: Demonstrate project management skills in the implementation of empirical research.
    ▪ PLO2.3: Demonstrate advanced competency in the statistical analysis and interpretation of empirical research findings.
    ▪ PLO2.4: Be able to communicate (oral and written) their research findings at a professional level.

• **Career Enhancement**
- Graduates of our program will experience career enhancement through placement in a doctoral program or acceptance of a position requiring a master’s in psychology in the public or private sector. Students completing the MA in Psychology program will:
- PLO3: achieve career enhancement through placement in a doctoral program or acceptance of a position requiring a master’s in psychology in the public or private sector.

**Required Texts/Readings**

There is no required textbook for this course. Instead, required readings will include a number of scientific journal articles pertaining to Neuroscience, each of which will be available on Canvas as PDFs.

For those wishing to consult a reference textbook throughout the course, your undergraduate BioPsych textbook should work well, but additional suggestions include:


**Course Requirements and Assignments**

During this course, you will be required to participate in class and to complete the following: weekly reaction papers, 1-2 presentations of journal articles, three quizzes, and a final project (see details below in “Grading Policy” and due dates at the end of the syllabus under “Schedule”).

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](http://www.sjsu.edu/senate/docs/S12-3.pdf).

[University policy F69-24](http://www.sjsu.edu/senate/docs/F69-24.pdf) states, “Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading.”

**Grading Policy**

Grades will be based on three quizzes (30%), in-class participation (30%), and a final project (40%), and in-class participation (10%). Students in the top or bottom 2.5% of each grade range will receive a plus or minus, respectively:

A (90 - 100%), B (80 - 89%), C (70 - 79%), D (60 - 69%), F (0 - 60%)

**Quizzes**

Each of three quizzes will be completed at home and will involve short answer and/or essay questions that cover
lecture content as well as the assigned readings. Quizzes will be turned in via Canvas by the beginning of class on the dates noted in the schedule below, and will each be worth 10%.

In-class participation
Participation will be divided into two categories: reaction papers to the assigned readings (15%), and student-led discussion of the readings (15%). Starting with the second unit of the course, we will be alternating one day of lecture with one day of student-led discussion regarding the assigned readings.

Reaction papers will be short (1 page, single spaced) responses to the assigned readings and will be turned in via Canvas the night before each discussion by 11:59pm. Reaction papers will briefly summarize each article and include discussion points or questions to be covered the following day.

For each assigned reading, one student will create a PowerPoint/Keynote presentation highlighting the aims, methods, results, and conclusions of the relevant journal article and will lead a discussion of that article. In total, there are 17 assigned readings, meaning each student will present an article 1-2 times throughout the semester.

Final project
If you decide to pursue a PhD in Psychology or Neuroscience, it is very likely that you will apply for a graduate fellowship from a governmental agency such as the NIH or NSF. To prepare you for such applications, your final project will involve choosing a neuroscience-related topic that interests you, and writing a research proposal formatted as an NIH graduate fellowship application (proposal: 30%). Prior to submitting your proposal, you will also present your ideas to the class as a 15 minute PowerPoint/Keynote presentation in order to receive critical feedback that will in turn improve your proposal (presentation: 10%). This project will be discussed in greater detail as the semester progresses.

Viewing grades
Note that “All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades.” See University Policy F13-1 at http://www.sjsu.edu/senate/docs/F13-1.pdf for more details.

Classroom Protocol
Students are expected to maintain a level of professional and courteous behavior at all times. You are required to silence your cell phones and other electronic devices before the beginning of class. Note that although laptops are permitted, they are to be used for note-taking purposes only. Students not abiding by these policies will be asked to leave the class and will not be permitted to use their devices for the remainder of the semester.

University Policies
General Expectations, Rights and Responsibilities of the Student
As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU’s policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. To learn important campus information, view University Policy S90–5 at http://www.sjsu.edu/senate/docs/S90-5.pdf and SJSU current semester’s Policies and Procedures, at http://info.sjsu.edu/static/catalog/policies.html. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If
such conversation is not possible, or if it does not address the issue, it is recommended that the student contact the Department Chair as the next step.

**Dropping and Adding**

Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Add/drop deadlines can be found on the current academic year calendars document on the [Academic Calendars webpage](http://www.sjsu.edu/provost/services/academic_calendars/). The [Late Drop Policy](http://www.sjsu.edu/aars/policies/latedrops/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](http://www.sjsu.edu/advising/).

**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 and the following items to be included in the syllabus:

- “Common courtesy and professional behavior dictate 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. Such 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.”
  - It is suggested that the greensheet include the instructor’s process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
  - In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
- “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.”

**Academic integrity**

Your commitment, as a student, to learning is evidenced by your enrollment at San Jose State University. The [University Academic Integrity Policy S07-2](http://www.sjsu.edu/senate/docs/S07-2.pdf) requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The [Student Conduct and Ethical Development website](http://www.sjsu.edu/studentconduct/) is available at http://www.sjsu.edu/studentconduct/.

**Campus Policy in Compliance with the American Disabilities Act**

If you need course adaptations or accommodations because of a disability, or if you need to make 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](http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf) requires that students with disabilities requesting accommodations must register with the [Accessible Education Center (AEC)](http://www.sjsu.edu/aec) to establish a record of their disability.

**Accommodation to Students' Religious Holidays**

San José State University shall provide accommodation on any graded class work or activities for students wishing to observe religious holidays when such observances require students to be absent from class. It is the
responsibility of the student to inform the instructor, in writing, about such holidays before the add deadline at the start of each semester. If such holidays occur before the add deadline, the student must notify the instructor, in writing, at least three days before the date that he/she will be absent. It is the responsibility of the instructor to make every reasonable effort to honor the student request without penalty, and of the student to make up the work missed. See University Policy S14-7 at http://www.sjsu.edu senate/docs/S14-7.pdf.

Student Resources

Student Technology Resources

Computer labs for student use are available in the Academic Success Center at http://www.sjsu.edu/at/asc/ located on the 1st floor of Clark Hall and in the Associated Students Lab on the 2nd 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 DV and HD digital camcorders; digital still cameras; video, slide and overhead projectors; DVD, CD, and audiotape players; sound systems, wireless microphones, projection screens and monitors.

SJSU Peer Connections

Peer Connections’ free tutoring and mentoring is designed to assist students in the development of their full academic potential and to inspire them to become independent learners. Peer Connections tutors are trained to provide content-based tutoring in many lower division courses (some upper division) as well as writing and study skills assistance. Small group and individual tutoring are available. Peer Connections mentors are trained to provide support and resources in navigating the college experience. This support includes assistance in learning strategies and techniques on how to be a successful student. Peer Connections has a learning commons, desktop computers, and success workshops on a wide variety of topics. For more information on services, hours, locations, or a list of current workshops, please visit Peer Connections website at http://peerconnections.sjsu.edu for more information.

SJSU Writing Center

The SJSU Writing Center is located in Clark Hall, Suite 126. All Writing Specialists have gone through a rigorous hiring process, and they are well trained to assist all students at all levels within all disciplines to become better writers. In addition to one-on-one tutoring services, the Writing Center also offers workshops every semester on a variety of writing topics. To make an appointment or to refer to the numerous online resources offered through the Writing Center, visit the Writing Center website at http://www.sjsu.edu/writingcenter.

SJSU Counseling and Psychological Services

The SJSU Counseling and Psychological Services is located on the corner of 7th Street and San Carlos in the new Student Wellness Center, Room 300B. Professional psychologists, social workers, and counselors are available to provide confidential consultations on issues of student mental health, campus climate or psychological and academic issues on an individual, couple, or group basis. To schedule an appointment or learn more information, visit Counseling and Psychological Services website at http://www.sjsu.edu/counseling.
Schedule: PSYC 230, Seminar in Physiological Psychology, Spring 2016

Note: The schedule is subject to modification as the instructor deems necessary. You are responsible for noting any changes to the schedule announced either in class or via Canvas.

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
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<tbody>
<tr>
<td>Jan 28</td>
<td>Welcome and intro</td>
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<tr>
<td>Feb 2</td>
<td>Neurophysiology</td>
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<td>Feb 4</td>
<td>Neurotransmission</td>
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<td>Feb 9</td>
<td>Neuroanatomy I</td>
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<td>Feb 11</td>
<td>Neuroanatomy II</td>
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<td>Feb 16</td>
<td>Methods: Neuropsychology</td>
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<td>Feb 23</td>
<td>Vision; <strong>Quiz 1 due</strong></td>
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<td>Mar 1</td>
<td>Attention</td>
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<td>Mar 8</td>
<td>Somatosensation</td>
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<td>Mar 10</td>
<td>Somatosensation: Discussion</td>
<td>Veronelli et al, Cortex, 2014; DeCharms et al, PNAS 2005</td>
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<td>Mar 15</td>
<td>Movement</td>
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<td>Mar 17</td>
<td>Movement: Discussion</td>
<td>Lunn et al, Stem Cells, 2014; Interactive discussion w/ ALS guest speaker</td>
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<td>Mar 22</td>
<td>Language</td>
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<td>Mar 24</td>
<td>Language: Discussion</td>
<td>Berken et al, Neuroimage, 2015; Abutalebi et al, Neurobio of Aging, 2014</td>
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<td>Mar 29, 31</td>
<td><strong>No class, spring break</strong></td>
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<td>Apr 5</td>
<td>Memory I; <strong>Quiz 2 due</strong></td>
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<td>Apr 7</td>
<td>Memory II</td>
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<td>Apr 14</td>
<td>Emotion</td>
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<td>Apr 19</td>
<td>Emotion: Discussion</td>
<td>Wicker et al, Neuron, 2003; Mobbs et al, PNAS, 2010</td>
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<td>Apr 21</td>
<td>Stress and anxiety</td>
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<td>Apr 26</td>
<td>Depression</td>
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<td>May 3</td>
<td>Schizophrenia</td>
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<td>May 7</td>
<td><strong>Quiz 3 due</strong> (Saturday!)</td>
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<td>May 10</td>
<td><strong>Oral presentations</strong></td>
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<td>May 12</td>
<td><strong>Oral presentations</strong></td>
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<td>May 19</td>
<td><strong>Final papers due by 9:30am</strong></td>
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