San José State University
Department of Psychology
PSYC/BIO 129-01, Neuroscience, Spring 2018

BASIC COURSE INFORMATION

Instructor: Tanusree Das
Office Location: Dudley Moorhead Hall (DMH), Room 230
Telephone: (408) 924-5789
Email: tanusree.das@sjsu.edu
Office Hours: Tues, 4:30-5:30 PM
Class Days/Time: Tues/Thurs, 3:00-4:15 PM
Classroom: Dudley Moorhead Hall (DMH), Room 359
Prerequisites: Either PSYC 30 and 3 units of biology, or 9 units of biology

COURSE DESCRIPTION

Neuroscience is defined as the study of the nervous system. This field comprises several related disciplines including: neuroanatomy, neurochemistry, neuropharmacology, neurophysiology, neuroendocrinology, neuroimmunology, neuropathology, and neuropsychology. 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 dysfunction of the nervous system.

From the course catalog: “Principles of brain organization and function underlying behavior. Topics include neuroanatomy and physiology of language, vision, sexual behavior, memory and abnormal behavior.”

COURSE FORMAT

The material in this course will be presented through a combination of class lectures, in-class videos and demonstrations, and assigned readings from the textbook and scientific journals. Lectures will complement the reading material and will include additional information not covered in the readings. As such, attendance 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 or in the readings -- asking questions and offering ideas during lecture is welcomed and encouraged!

CANVAS

Course materials such as the syllabus, homework assignments, announcements, grades, 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**
  - CLO1: Describe the major concepts related to basic neuroanatomy, neurophysiology and psychopharmacology
  - CLO2: Describe the major transduction mechanisms, neuroanatomical pathways and theoretical perspectives associated with sensory systems, motor systems, emotional systems, and learning processes
  - CLO3: Describe methodological approaches and associated empirical findings used in neuroscience
  - CLO4: Describe dysfunction of the nervous system and its association with various mental health issues
  - Content goals will be assessed via midterms, quizzes, and the final exam
- **Critical thinking goals**
  - CLO5: Discuss how knowledge of neuroscience can be used to interpret a wide range of behavioral phenomena, including their own
  - Critical thinking goals will be assessed with midterms, quizzes, homework assignments, the final paper, and the final exam
- **Communication goals**
  - 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
  - Communication goals will be assessed via the final paper

PROGRAM LEARNING OUTCOMES (CLO)

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

- **Knowledge Base of Psychology**
  - PLO1: Identify, describe, and communicate the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.
- **Research Methods in Psychology**
  - PLO2: Design, implement, and communicate basic research methods in psychology, including research design, data analysis, and interpretations.
- **Critical Thinking Skills in Psychology**
  - PLO3: Use critical and creative thinking, skeptical inquiry, and a scientific approach to address issues related to behavior and mental processes.
- **Application of Psychology**
  - PLO4: Apply psychological principles to individual, interpersonal, group, and societal issues.
- **Values in Psychology**
  - PLO5: Value empirical evidence, tolerate ambiguity, act ethically, and recognize their role and responsibility as a member of society.
REQUIRED TEXTS/READINGS


COURSE REQUIREMENTS AND ASSIGNMENTS

During this course, you will be required to participate in class and to complete the following: three midterms, a cumulative final exam, and a paper (see details below in “Grading Policy” and “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 at http://www.sjsu.edu/senate/docs/S12-3.pdf.

University policy F69-24 at 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 INFORMATION

Letter grades

Grades will be based on three midterms (40%), a cumulative final exam (25%), a paper (15%), and participation (20%).

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

Students in the top or bottom 2.5% of each grade range will receive a plus or minus, respectively.

Weighting of graded assignments

Midterms (40%) and final exam (25%)
Midterms and the final exam will contain multiple-choice, fill-in-the-blank, labeling, matching, and/or short answer questions that cover the assigned reading material and information presented in class. The lowest score of the three midterms will be dropped, such that the remaining two midterms will count 20% each. The cumulative final exam is required and cannot be dropped. Please note that no makeup midterms/exams will be given except in emergency situations in which documentation is provided by an independent authority (e.g., a doctor’s note), and that makeup exams will be short-answer / essay format.

Paper (15%)
A goal in this class is for you to acquire the skills to be a critical consumer of media coverage of neuroscience. For the written assignment, you will be asked to submit a paper that (a) introduces a neuroscience-related topic of interest to you, (b) summarizes a recent empirical article relating to your topic, (c) summarizes a popular press
story's coverage of this article, and (d) critically analyzes the accuracy of the popular press story. This assignment will be discussed in greater detail later in the semester.

Participation (20%)
Your participation grade will encompass homework, quizzes (always announced in advance), and group activities. Late homework assignments will not be accepted, and make-up quizzes/activities will not be permitted. Should you miss a class, it is your responsibility to find out what material you missed—preferably by contacting one of your fellow students—and to prepare for the next class session.

Submitting assignments
All assignments are due by the **beginning** of class on the specified due date unless otherwise stated. If you know in advance that you will be traveling and unable to submit an assignment on the due date, you must submit it **in advance** of the due date. As mentioned above, no late assignments will be accepted. However, partial credit will be given for late final papers as follows: for each 24-hr period your paper is late, your score will drop 10%. I.e., if you submit your paper one hour late (within the first 24-hr period), your grade will drop by 10%; if you submit it 25 hours late (within the second 24-hr period), it will drop by 20%, and so on.

With the exception of in-class activities, all assignments will be submitted via Canvas. It **is your responsibility to ensure that submitted files are properly uploaded and complete by the due date.** As such, blank/incomplete/corrupt files will not be accepted, similar to how a blank piece of paper would never be accepted in class. I suggest beginning the submission process at least 30 mins in advance of each deadline to ensure sufficient time to correctly upload your files and address any Canvas-related difficulties.

Viewing grades
Grades will be posted on Canvas in a timely manner. 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.

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**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.

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**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/).

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**PSYC/BIO 129-01, Neuroscience, Spring 2018**
COURSE SCHEDULE

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 25</td>
<td>Welcome and intro</td>
<td>Ch 1</td>
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<td>Jan 30</td>
<td>Neurons and glia</td>
<td>Ch 2</td>
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<td>Feb 1</td>
<td>Resting membrane potential</td>
<td>Ch 3</td>
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<td>Feb 6</td>
<td>Action potential; <strong>Quiz 1</strong></td>
<td>Ch 4</td>
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<td>Feb 8</td>
<td>Synaptic transmission I</td>
<td>Ch 5 (110-132)</td>
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<td>Feb 13</td>
<td>Synaptic transmission II; Neurotransmitters I</td>
<td>Ch 5 (132-141), Ch 6 (144-153)</td>
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<td>Feb 15</td>
<td>Neurotransmitters II</td>
<td>Ch 6 (153-169)</td>
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<td>Feb 20</td>
<td><strong>Midterm 1</strong></td>
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<td>Feb 22</td>
<td>Neuropharmacology I</td>
<td>[None]</td>
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<td>Feb 27</td>
<td>Neuropharmacology II</td>
<td>[None]</td>
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<td>Mar 1</td>
<td>Neuroanatomy I; <strong>Quiz 2</strong></td>
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<td>Mar 6</td>
<td>Neuroanatomy II</td>
<td>Ch 7 (192-215)</td>
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<td>Neurodevelopment</td>
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<td>Mar 13</td>
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<td>Vision I</td>
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<td>Mar 20</td>
<td>Vision II</td>
<td>Ch 10</td>
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<td>Mar 22</td>
<td>Audition</td>
<td>Ch 11 (370-403)</td>
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<td>Mar 27</td>
<td><strong>Spring break</strong></td>
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<td>Mar 29</td>
<td><strong>Spring break</strong></td>
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<td>April 3</td>
<td>Vestibular system, chemical senses; <strong>Quiz 3</strong></td>
<td>Ch 11 (403-411), Ch 8</td>
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<td>April 5</td>
<td>Somatosensation</td>
<td>Ch 12</td>
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<td>April 10</td>
<td>Movement</td>
<td>Ch 13, Ch 14</td>
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<td>April 12</td>
<td>Movement disorders</td>
<td>Ch 14 (498-505)</td>
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<td>April 17</td>
<td><strong>Midterm 3</strong></td>
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<td>April 19</td>
<td>Emotion</td>
<td>Ch 18</td>
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<td>April 24</td>
<td>Memory I</td>
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<td>April 26</td>
<td>Memory II</td>
<td>Ch 23 (814-817), Ch 25</td>
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<td>May 1</td>
<td>Sleep I</td>
<td>Ch 19 (658-662, 666-682)</td>
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<td>May 3</td>
<td>Sleep II; Mental illness I; <strong>Quiz 4</strong></td>
<td>Ch 19 (662-666), Ch 22 (771-779)</td>
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<td>May 8</td>
<td>Mental illness II</td>
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<td>May 18</td>
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