Physiological : Cognitive and Behavioral Neuroscience

PSY 232  |  Section 03997  |  Summer 2017  |  M,T,W,Thu 1:00 – 4:30 PM 3S-111
College of Staten Island, City University of New York

General Information

Professor: Daniel J. Kerr, Ph.D.
Office: 6S-128
Office Hours: by appointment
Email: daniel.kerr@csi.cuny.edu (*please include “PSY 232” in subject line*)

Course Description and Objectives

• A study of the brain-behavior relationship with a focus on neuroanatomy, neuronal potentials, neuronal conduction, synaptic chemistry, sensory psychophysiology, learning and memory, language and lateralization, emotions, motivation and reward, and neuropsychiatric disorders. (4 hours; 4 credits)
• Prerequisites: PSY 100.
• Learning Objectives: This course will consist of lectures, discussions, and group activities based on the textbook and primary literature. By the end of the course, students should be able to:
  1) Understand basic brain anatomy.
  2) Describe the ionic basis of neuronal membrane potentials.
  3) Understand the principles of chemical synaptic transmission.
  4) Understand mechanisms underlying neural plasticity.
  5) Understand cutting edge tools in neuroscience research.
  6) Describe the processes by which physical stimuli are transformed into electrochemical signals by our senses (sensory transduction).
  7) Understand the neural mechanisms underlying learning and memory, language, movement and emotion.
  8) Understand mechanisms underlying neurodegenerative disorders and mental illness.

Course Textbook and Materials

Course Handouts
- In-class group assignments will be made available during class.
- Take-Home assignments will available on Blackboard.

Class Format
- We will spend our classroom time in lecture, discussions, demonstrations, and group activities. It is essential that you **complete assigned readings before class**, attend all lectures, and that you come to class ready to participate.
- You will be required to use Blackboard to access homework assignments, class announcements, etc. To access Blackboard you must use a CUNY email. Firefox is not a supported browser.

Course Assignments and Grading
- Your course grade will be composed of scores you obtain on your exams, in-class group assignments and participation, and take-home assignments.
- Exams (60% of your total grade). There will be three exams (see calendar for dates). Each will consist of multiple-choice and short-answer questions based on material covered in lectures and assigned readings.
  - Exam 1 – 20%
  - Exam 2 – 20%
  - Exam 3 – 20%
- Take-home assignments (25% of your total grade). There will be three take-home assignments (see calendar for due dates).
  - Assignment 1 – 5%: Build a model neuron.
  - Assignment 2 – 5%: Ionic basis of neuron function.
  - Assignment 3 – 15%: Infer and formulate in a paper the underlying biology and nervous system basis for the physical and mental talents of a superhero of your choice.
- Group assignments and participation (15% of your total grade). There will be twelve in-class group assignments over the course of the semester (see calendar for dates). The best ten will count towards your grade.
- Grading summary:
  - Exams (3) 60%
  - Take-home assignments (3) 25%
  - Group assignments (10) and participation 15%
  - TOTAL 100%
• Grading scale:
  A 92.5% and above.
  A- 90.0 ≤ %-score < 92.5  Outstanding
  B+ 87.0 ≤ %-score < 90.0
  B  83.0 ≤ %-score < 87.0  Very good
  B- 80.0 ≤ %-score < 83.0
  C+ 77.0 ≤ %-score < 80.0
  C  70.0 ≤ %-score < 77.0  Satisfactory
  D  60.0 ≤ %-score < 70.0  Marginal pass
  F Less than 60.0%  Poor - failure

Please note that all grades will be assigned on merit alone and will not be arbitrarily decreased (or increased).

Course Policies
• Complete assigned readings prior to class.
• You are expected to attend all lectures. Participation is factored into your grade.
• Be on time.
• No electronic devices except during specific class activities/demonstrations. No exceptions.
• No extra credit.
• Online correspondence about course matter should only be made using CSI email. Please include ‘PSY 232’ in the subject line, otherwise I may not read or respond to your email. Please use complete sentences and check for spelling errors. Please sign your full name so I know who you are. I will send emails regarding course information through Blackboard, which goes to your CSI email account. If you do not remember your email log-in please see The Student Technology HelpDesk 2A-306D.
• Make up exams will only be considered on the grounds of serious illness or for compassionate reasons. Considerations must be raised at least 24 hours prior to the exam, and supporting documents will be required (no exceptions). If permitted, make-up exams will be given in an oral format within one week of the scheduled exam. Missed exams will result in a grade of zero.
• Assignments are due at the beginning of class. Assignments turned in within 24 hours of the deadline will receive 75% credit. Those turned in between 24-48 hours late will receive 50% credit. No credit will be given for assignments turned in beyond 48 hours late.

Plagiarism, Dishonorable Conduct, and Cheating
• There is a zero-tolerance policy for plagiarism, dishonorable conduct, and cheating in this course, no matter how mild or severe the case may be. The current policies will be enforced to the fullest extent, including all incidents being reported to Vice President of Student Affairs, and Department chair and deputy chair. All students must familiarize themselves with CUNY policies regarding dishonorable conduct: http://web.cuny.edu/academics/info-central/policies/academic-integrity.pdf
### Important Academic Dates

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>July 2 (Sun)</td>
<td>Last day to withdraw for a 100% tuition refund.</td>
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<tr>
<td>July 3 (Monday)</td>
<td>First day of classes for second four week session</td>
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<tr>
<td>July 4 (Tuesday)</td>
<td>College closed, no classes.</td>
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<tr>
<td>July 17 (Monday)</td>
<td>Last day to withdraw from course without a grade of ‘W’.</td>
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<tr>
<td>July 17 (Wednesday)</td>
<td>Last day to withdraw with the grade of W without permission of the Instructor or Chairperson.</td>
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<tr>
<td>July 27 (Thursday)</td>
<td>Last day of second four week term.</td>
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### Important CSI Resources

- **Center for Student Accessibility**
  - Center for the Arts 1P-101
  - In accordance with federal law the College offers a number of resources for accommodating individuals with disabilities. If you need an accommodation because of a documented disability, you are required to register with the Center for Student Accessibility. Prior to granting disability accommodations in this course, the instructor must receive written verification of student’s eligibility from the Center for Student Accessibility. It is the student’s responsibility to initiate contact with the Center for Student Accessibility staff and to follow the established procedures for having the accommodation notice sent to the instructor. To learn more about the accommodations and services that are available:
  - Phone: 718-982-2510
  - Email: CSA@csi.cuny.edu

- **Counseling Center**
  - 1A-109
  - The Counseling Center provides individual and group counseling for students of the College of Staten Island. Students are given the opportunity to explore issues that can help them achieve success. Call/drop in/email to make an appointment.
  - Phone: 718-982-2391
  - Email: counseling@csi.cuny.edu

- **Center for Academic Student Assistance**
  - 1A-109
  - The Center for Academic Student Assistance offers drop-in tutoring in the following subjects: English, math, computer science, physics, psychology, chemistry, engineering, accounting, finance, geology, astronomy, philosophy, medical dosage and CORE 100. See their schedule online ([http://www.csi.cuny.edu/oas/tutoring.htm](http://www.csi.cuny.edu/oas/tutoring.htm))
# Semester Overview (subject to change)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
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<tbody>
<tr>
<td>July 3</td>
<td>Course outline, bio review Introduction to the brain and nervous system</td>
<td>Chap 1</td>
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<tr>
<td>July 4</td>
<td>No classes</td>
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<tr>
<td>July 5</td>
<td>Features of the brain and nervous system</td>
<td>Chap 2</td>
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<td>July 6</td>
<td>Neurons and synapse,</td>
<td>Chap 3</td>
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<tr>
<td>July 10</td>
<td>Neurons and synapse, Review</td>
<td>Chap 3</td>
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<tr>
<td>July 11</td>
<td>Exam 1, Neuroplasticity</td>
<td>Chap 4</td>
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<td>July 12</td>
<td>Neuroplasticity continued / Vision</td>
<td>Chap 4 and 5</td>
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<tr>
<td>July 13</td>
<td>Other senses (audition and somatosensory)</td>
<td>Chap 6</td>
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<tr>
<td>July 17</td>
<td>The motor system, Review</td>
<td>Chap 7</td>
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<tr>
<td>July 18</td>
<td>Exam 2, Memory</td>
<td>Chap 9</td>
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<tr>
<td>July 19</td>
<td>Memory</td>
<td>Chap 9</td>
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<tr>
<td>July 20</td>
<td>Language and lateralization</td>
<td>Chap 11</td>
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<td>July 24</td>
<td>Emotions</td>
<td>Chap 13</td>
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<td>July 25</td>
<td>Motivation and reward</td>
<td>Chap 14</td>
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<td>July 26</td>
<td>Neurological and psychiatric disorders, review</td>
<td>Chap 16</td>
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<tr>
<td>July 27</td>
<td>Exam 3, Assignments due</td>
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