

Brain and Behavior 314-010

Spring 2015 Syllabus

Class time: Mon/Wed/Friday, 10:10-11:00 am

Class location: Alison Hall 132

Contact Information:

Instructor: Dr. Josh Neunuebel

Office location: 107 McKinly

Office hours: Monday 2:00-4:00 pm and by appointment

Office phone: (302) 831-4811

Email: jneunuebel@psych.udel.edu

Teaching Assistant: Alicia Edsall

Office location: 128 Wolf Hall

Office hours: Wednesday 3-4 pm, please email questions prior to visiting

Office phone: (302) 831-4895

Email: aedsall@psych.udel.edu

Course description:

The Brain and Behavior course will provide a general overview of brain structure and function. Students will gain a basic understanding of how the brain controls behavior and the ability to think critically about scientific problems, as well as evaluate the primary literature in the field of behavioral neuroscience. The course will cover sensory systems, sleep and biological rhythms, psychopharmacology, reproductive behavior, emotion, learning and memory, and neurological disorders. Students will be introduced to basic concepts in lecture and delve into more detail during discussions of classic papers on selected topics. Discussion classes will focus on the previously covered lecture material.

Reading:

The main text will be Physiology of Behavior, the 11th edition by Neil R. Carlson.

In addition we will be reading articles from the primary literature. Articles are available for download on the course website.

Website:

<http://jneunuebel.psych.udel.edu/Webpage/Courses/Courses.html>

Grades:

Break down of point value

Test 1: 200 points

Test 2: 200 points

Test 3: 200 points

Final: 200 points

Paper discussions and written assignments: 200 points

Presentations: 50 points

Grading criteria

Your course grade will be based on a total of 850 points. Four tests will be given during the semester. The highest 3 scores will count towards your grade. Each test will cover material from the book, lectures, and the papers we discuss in class. The final is cumulative and will cover material from February 11th through May 15th. Each test, including the final, will include material from the textbook that was not directly covered in class. This will account for approximately 10% of the test questions. Tests will be difficult; therefore, each test will be curved. The curve is based on the number of correctly answered questions from the best three scores on that test. The total number of correct questions for the three highest scores will be averaged and rounded to the nearest whole number. This average will become the number of test questions used to determine each student's possible point total on the test. For example, the citizens of Bedrock take the first exam in Psyc 314. Willma gets 30 out of 36 questions correct, Fred gets 27 out of 36, Bamm-Bamm gets 25 out of 36, and the rest of the town of Bedrock gets fewer than 25. Averaging 30, 27, and 25 gives you 27.3; therefore, the citizens of Bedrock need to divide the total number of questions they answered correctly by 27 to determine the proportion of the total points they received on the test. Next, they multiply 200 by this proportion to determine their total number of points on the test.

The final course grades are based on the **stringent** cutoffs listed below.

<u>Grades</u>	<u>Points</u>
A	≥807.5
A-	≥765
B+	≥739.5
B	≥705.5
B-	≥680
C+	≥654.5
C	≥620.5
C-	≥595
D+	≥569.5
D	≥535.5
D-	≥510
F	<510

Exams:

Dates:

Test 1 – March 6th

Test 2 – April 8

Test 3 – Apr 29

Final – Date, time, and location to be determined

Paper discussions and written assignments:

Students are required to read the paper prior to the day of the discussion. Students will be grouped together (4 or 5 students/group) to review the assigned paper. Groups will be determined in class and each member of the group will sign a role sheet at some point during the class period while the group discusses the paper. To facilitate the discussion, a series of questions will be distributed. The questions will cover key concepts in the paper's background, material and methods, results, and conclusions. These questions constitute the written assignment for the paper. Each written assignment will need to be completed and submitted to the instructor at the end of the class period. The group will submit a single written assignment. Written assignments can be submitted by email to the TA (an electronic version saved as a Microsoft Word Document) or turned in at the end of class (hard copy). Students that do not attend class on the day of the discussion will NOT receive any credit for the written assignment.

Student presentations:

Students will present in groups (3 or 4 students/group). Members of the group will be determined by the professor and announced during the first class period after the last day to drop. Groups will pick the presentation topic. Acceptable topics include any disorder discussed in Chapters 15-17 of Physiology of Behavior, edition 11. Slide show presentations should be approximately 15 minutes and include background information about the disorder, the parts of the brain that are functioning abnormally, and the behaviors typically observed in individuals with the disorder. Presentations will be graded on quality and accuracy.

Course outline:

(L) = lecture, (D) = discuss paper

-----Week 1-----

Feb 9 Course Introduction

Feb 11 Structure and Function of Cells in the Nervous System (L)

Feb 13 Structure and Function of Cells in the Nervous System (L)

-----Week 2-----

Feb 16 Paper 1 - Cell Function - Castellucci Kandel 1970 (D)

Feb 18 Structure of the Nervous System (L)

Feb 20 Structure of the Nervous System (L)

-----Week 3-----

Feb 23 Paper 2 - Structure Nervous System - Damasio Damasio 1994 (D)

Feb 25 Psychopharmacology (L)

Feb 27 Psychopharmacology (L)

-----Week 4-----

Mar 2 Paper 3 - Psychopharmacology - Fatt Katz 1952 (D)

Mar 4 Test Review

Mar 6 Test 1

-----Week 5-----

Mar 9 Vision (L)

Mar 11 Vision (L)

Mar 13 Paper 4 - Vision - Salzman Newsome 1990 (D)

-----Week 6-----

Mar 16 Audition, Body Senses, Chemical Sense (L)

Mar 18 Audition, Body Senses, Chemical Sense (L)

Mar 20 Paper 5 - Audition - Knudsen Konishi 1978 (D)

-----Week 7-----

Mar 23 Sleep and Biological Rhythms (L)

Mar 25 Sleep and Biological Rhythms (L)

Mar 27 Paper 6 - Sleep - Wilson McNaughton 1994 (D)

-----Week 8-----

Mar 30 Spring Break

Apr 1 Spring Break

Apr 3 Spring Break

-----Week 9-----

Apr 6 Test Review

Apr 8 Test 2

Apr 10 Learning and Memory (L)

-----Week 10-----

Apr 13 Paper 7 - Memory - Wagner Buckner 1998 (D)

Apr 15 Reproductive Behavior (L)

Apr 17 Neural Circuits, Social Behavior, and Communication (L)

-----Week 11-----

Apr 20 Paper 8 - Reproductive Behavior - Kimchi Dulac 2007 (D)

Apr 22 Emotion (L)

Apr 24 Paper 9 - Emotion - Scott Johnson 1997 (D)

-----Week 12-----

Apr 27 Test Review

Apr 29 Test 3

May 1 Motor control (L)

-----Week 13-----

May 4 Paper 10 - Motor Control - Georgopoulos Massey 1982 (D)

May 6 Pick topics for in class group presentations

May 8 Independent research on presentation topic

-----Week 14-----

May 11 Student presentations

May 13 Student presentations

May 15 Student presentations

-----Week 15-----

May 18 Final Review