Brain and Behavior 314-080
Fall 2014 Syllabus

Instructor: Dr. Josh Neunuebel
Office location: 107 McKinly
Office hours: Monday & Friday 3:30-4:30 pm and by appointment
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Class time: Tues/Thurs, 9:30-10:45 am
Class location: McKinly Lab room 061

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 presentations of classic papers on selected topics. Discussion classes will focus on structure of the nervous system, vision, sleep, reproductive behavior, and autism.

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:
jneunuebel.psych.udel.edu/Courses/default.html

Grades:
Midterm: 222 points
Final: 270 points
Presentations and class participation: 162 points
Science joke: 6 points

Exams:
Midterm - October 2nd
Final – Date, time, and location to be determined

Class participation:
Students will be grouped together (3 or 4 students/group) and present the assigned paper. Presentations should include parts describing the background, material and methods, results, and conclusions. Presenters will ask audience questions related to the paper and the audience members are expected to actively engage in answering the questions. In

addition, the audience is encouraged to ask the presenters questions throughout the discussion. Presenters are encouraged to make an effort to address all questions to the best of their ability. Each presentation is worth 75 points. During a presentation, students in the audience will be awarded 3 points for correctly answering a question and 3 points for asking a question (6 points total). Points for the presentation will be awarded based the following rubric.

	Inadequate	**Needs Improvement**	**Adequate**	**Excellent**
Background material				
Provides background content and addressed study's significance	0	3	6	9
Provides a description of the question(s) addressed in experiments	0	3	6	9
Methods				
Describes participants/research groups, variables	0	3	6	9
Describes experimental design, procedures	0	3	6	9
Data/results/discussion				
Helps audience interpret each figure/table and provides accurate interpretation of each result	0	3	6	9
Relates data back to research questions of article	0	3	6	9
Quality				
Presentation is organized and prepared (audible, articulate, engaging, clear, did not continually read from notes/screen)	3	6	9	12
Overall visual quality of slides, pictures, graphs	0	3	6	9

Course outline:

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

Aug 26	Course Introduction
Aug 28	Structure and Function of Cells in the Nervous System (L)
Sep 2	Structure and Function of Cells in the Nervous System (L)
Sep 4	Structure of the Nervous System (L)
Sep 9	Structure of the Nervous System (L)
Sep 11	Paper 1 - Structure Nervous System - Damasio Damasio 1994 Science (D)
Sep 16	Psychopharmacology (L)
Sep 18	Psychopharmacology (L)
Sep 23	Vision (L)
Sep 25	Vision (L)
Sep 30	Paper 2 - Vision - Salzman Newsome 1990 Nature (D)
Oct 2	Midterm
Oct 7	Audition, Body Senses, Chemical Sense (L)
Oct 9	Audition, Body Senses, Chemical Sense (L)
Oct 14	Sleep and Biological Rhythms (L)
Oct 16	Sleep and Biological Rhythms (L)
Oct 21	Learning and Memory (L)
Oct 23	Paper 3 - Sleep - Wilson McNaughton 1994 Science (D)
Oct 28	Emotion (L)
Oct 30	Emotion (L)
Nov 4	No class – Election Day

Nov 6	Reproductive Behavior (L)
Nov 11	Reproductive Behavior (L)
Nov 13	Paper 4 - Reproductive Behavior - Kimchi Dulac 2007 Nature
Nov 18	Reading day
Nov 20	Anxiety, Autistic, Attention-Deficit/Hyperactivity, and Stress Disorders (L)
Nov 25	Anxiety, Autistic, Attention-Deficit/Hyperactivity, and Stress Disorders (L)
Nov 27	No class - Thanksgiving break
Dec 2	Paper 5 - Autism - Yizhar Deisseroth 2011 Nature (D)