

PSY 330: FOUNDATIONS OF BEHAVIORAL NEUROSCIENCE, Spring 2019
8:30-11:50 AM, TTh, 1113 Kindschi Hall of Sciences

Instructor: Glenn R. Valdez, Ph.D.
Office: 1313 AuSable Hall
Office hours: TTh, 12:30-1:30 **and by appointment**
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Office Hours:

If you cannot make it to my regular office hours, please feel free to schedule an appointment at another time. I also keep an open-door policy so feel free to stop in anytime my door is open.

Text: Carlson, N.R. (2014) Foundations of Behavioral Neuroscience (9th edition). Needham Heights, MA: Allyn & Bacon.

Readings (will be posted on Blackboard):

Koenigs M, Young L, Adolphs R, Tranel D, Cushman F, Hauser M, Damasio A. (2007) Damage to the prefrontal cortex increases utilitarian moral judgments. *Nature*. 446: 908-11.

LeVay, S. (1991) A difference in hypothalamic structure between heterosexual and homosexual men. *Science*. 253:1034-7.

White HK, Levin ED. (1999) Four-week nicotine skin patch treatment effects on cognitive performance in Alzheimer's disease. *Psychopharmacology*. 143:158-65.

Kraehenmann R, Preller KH, Scheidegger M, Pokorny T, Bosch OG, Seifritz E, Vollenweider FX. (2014) Psilocybin-Induced Decrease in Amygdala Reactivity Correlates with Enhanced Positive Mood in Healthy Volunteers. *Biol Psychiatry*. 2014 Apr 26. pii: S0006-3223(14)00275-3. doi: 10.1016/j.biopsych.2014.04.010 [Epub ahead of print]

Course Homepage on Blackboard: <http://bb.gvsu.edu>. Pertinent information (e.g., announcements, syllabi, etc.) will be available on Blackboard.

Course Description:

This course provides an introduction to Behavioral Neuroscience, the scientific study of the interaction between biological processes and behavior. Topics covered include the basic structure of the nervous system, research methods in behavioral neuroscience, psychopharmacology, and neural mechanisms involved in sensory and perceptual processes, and psychiatric disorders. Prerequisites: PSY 101 - Introductory Psychology. This course is subject to the GVSU policies listed at <http://www.gvsu.edu/coursepolicies/>.

Learning Objectives:

Upon successful completion of this course, students should be able to:

- Identify the structure and function of the major parts of the nervous system
- Describe the process of action potentials
- Describe the process of neurotransmission
- Identify the behavioral function of major brain chemical systems
- Discuss basic research in behavioral neuroscience
- Relate biological processes to everyday behavior

Course Attendance:

Roll will not be taken and attendance is not mandatory. **You are, however, responsible for all announcements and lecture materials presented in class.** In addition, **exams will include material that is covered in class and IS NOT in the textbook.** Therefore, you are strongly encouraged to attend every class.

Exams:

There will be three, non-cumulative exams that will be worth 100 points each. The exam format will be short essay questions and will be based on **what is covered in class.** If you are unable to attend an exam due to an illness or family emergency, please notify me in writing (before the exam if possible) and be prepared to provide documentation of the problem and promptly complete a make-up exam. **If you miss an exam and do not provide the appropriate documentation, you will receive a grade of 0 for that exam.**

Quizzes:

There will be two in class quizzes on the topics of Neurons and Neuroanatomy and Psychopharmacology worth 50 points each. The format will be short answer and fill in the blank. The same policy stated above for missing and exam also applies to quizzes.

Research Article Summary, Critique, and Discussion Assignments:

Four research articles are assigned, which you will have to summarize and critique. The goal of this assignment is to understand some of the current research in the field of behavioral neuroscience. Articles and assignment sheets for each article are posted on Blackboard in the Research Article section. Your answers must be typed in the space after each question on the assignment sheet. Completed assignments should be no longer than 2 pages (this includes the instructions and questions already provided on the assignment sheet). These assignments are worth 25 points each. Discussion of these articles will occur during the class sessions on the day after they are due. **Completed assignments must be uploaded to Blackboard as Word or PDF files in the Research Article section under the appropriate assignment number by 11:59 PM on the due dates listed below in order to receive full credit.**

Course Grades:

Grades will be based on your performance on examinations, quizzes and assignments. Your lowest exam grade will count towards 10% of your final grade and the other 2 exams will each count towards 30% of your final grade. The quizzes and assignments will each count towards 15% of your final grade.

Lowest Exam	10%
Exam	30%
Exam	30%
Quizzes	15%
Assignments	15%

Letter grades will be assigned according to the following scale:

A	93-100%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D+	67-69%
D	60-66%
F	≤ 59%

Accommodation for disability:

If there is any student in this class who has special needs because of a learning, physical or other disability, please contact the Disabilities Support Resources (DSR) Program in the Advising Resources and Special Programs Unit at 331-3588.

Tentative Course Schedule (Dates subject to change):

Date	Topic	Reading
5/7	Course Introduction	
	Neurons & Neurotransmission	Chapter 2
5/9	Neuroanatomy	Chapter 3
5/14	Quiz: Neurons, Neurotransmission, and Neuroanatomy	
5/14	Psychopharmacology	Chapter 4
5/16	Psychopharmacology continued	Chapter 4
5/21	Quiz: Psychopharmacology	
	Exam Review	
5/23	Exam 1	
5/28	Vision	Chapter 6
5/29	Assignment 1 Due	LeVay, 1991
5/30	Audition, Somatosenses, and Chemical Senses	Chapter 7
	Sex and Sex Differences	Chapter 9
	Exam Review	
6/4	Exam 2	
6/5	Assignment 2 Due	Koenigs et al., 2007
6/6	Fear and Aggression	Chapter 10
	Learning and Memory	Chapter 12
6/10	Assignment 3 Due	White & Levin, 1999
6/11	Learning and Memory continued	Chapter 12
	Alzheimer's Disease	Chapter 14
	Schizophrenia	Chapter 15
6/12	Assignment 4 Due	Kraehenmann et al., 2014
6/13	Anxiety Disorders	Chapter 15
	Mood Disorders	Chapter 15
	Drug Abuse and Addiction	Chapter 16
	Exam Review	
6/18	Exam 3	