

PSY 330: FOUNDATIONS OF BEHAVIORAL NEUROSCIENCE, Winter 2020
Section 02: 9:00-9:50 AM MWF 1310 AuSable Hall
Section 04: 10:00-10:50 AM MWF 1310 AuSable Hall

Instructor: Glenn R. Valdez, Ph.D.
Office: 1313 AuSable Hall
Office hours: MWF, 11:00 AM-12:00 PM **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 four, non-cumulative exams that will be worth 100 points each. The exam format will be short essay questions. **If you are unable to attend an exam due to an illness or family emergency, please notify me in writing before the exam or within 24 hours after the exam** 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 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. Assignments should be uploaded as Word files using the following file name format:

last name first name PSY 330 assignment #.docx
example: Valdez Glenn PSY 330 assignment 1.docx

Course Grades: Grades will be based on your performance on examinations, quizzes, and assignments. **EXTRA CREDIT OPPORTUNITIES WILL NOT BE LIKELY.** Grades are calculated based on the following scale.

Lowest Exam	10%
Exam	20%
Exam	20%
Exam	20%
Quizzes	15%
Article Summaries	15%

Letter grades will be assigned according to the following scale. Final grades are rounded to the nearest whole number.

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%

Please consider this general description of what each grade means.

F/D/D+: Despite your best efforts, you are struggling with the material and need help to understand why you are having difficulty. **Please set up an appointment so that we can determine the best course of action for you if you fall in this range.**

C-/C/C+: You did all the necessary work. You learned all the basic material and **know the correct answers.**

B-/B/B+: You did all the necessary work. You learned all the basic material, and you know the correct answers. Plus you really get the material. You **understand the correct answers** and could teach it to a friend.

A-/A: You did all the necessary work. You learned all the basic material, and you know the correct answers. You really get the material. You understand the correct answers and could teach it to a friend. Plus you can use it flexibly and adaptively. You **understand WHY the answers are what they are, and how this material can be applied to different situations.**

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
1/6	Course Introduction	
1/8, 1/10, 1/13, 1/15	Neurons & Neurotransmission	Chapter 2
1/17, 1/22, 1/24	Neuroanatomy	Chapter 3
1/20	Martin Luther King Day, No Classes	
1/27	Quiz: Neurons, Neurotransmission, and Neuroanatomy	
1/29	Exam Review	
1/31	Exam 1	
2/3, 2/5, 2/7, 2/10	Psychopharmacology	Chapter 4
2/12	Quiz: Psychopharmacology	
2/12, 2/17, 2/19	Vision	Chapter 6
2/14	No Class; I will be out of town for a conference	
2/21	Hearing	Chapter 7
2/24	Exam Review	
2/26	Exam 2	
2/28	Somatosenses, and Chemical Senses	Chapter 7
3/1-3/8	Spring Break, No Classes	
3/9, 3/11	Sex and Sex Differences	Chapter 9
Tuesday 3/10	Assignment 1 Due	LeVay, 1991
3/13, 3/16, 3/18	Learning and Memory	Chapter 12
3/20, 3/23	Fear and Aggression	Chapter 10
Sunday 3/22	Assignment 2 Due	Koenigs et al., 2007
3/25	Exam Review	
3/27	Exam 3	
3/30	Parkinson's Disease	Chapter 14
Tuesday 3/31	Assignment 3 Due	White & Levin, 1999
4/1	Alzheimer's Disease	Chapter 14

4/3, 4/6, 4/8	Schizophrenia	Chapter 15
Sunday 4/9	Assignment 4 Due	Kraehenmann et al., 2014
4/10	Mood Disorders	Chapter 15
4/13	Anxiety Disorders	Chapter 15
4/15	Drug Abuse and Addiction	Chapter 16
4/17	Exam Review	
Monday 4/20	Section 04 Exam 4, 10:00-11:50 AM	
Wednesday 4/22	Section 02 Exam 4, 8:00-9:50 AM	