

PSYCHOBIOLOGY
PSYCHOLOGY 425, Section P - Spring, 2019

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Office Hours: T, TH 9:15-10:45 a.m. email: pmccabe@miami.edu

PREREQUISITES: 2.5 GPA & 15 credits in PSY courses, including PSY 220, PSY 290, & PSY 291 or PSY 292, or 2.5 PSY GPA, 12 Credits in PSY including PSY 290, and PSY 291 or PSY 292, BIL 150.

COURSE DESCRIPTION (from Bulletin): Basic neuroanatomy, neurophysiology, and neurochemistry followed by an introduction to the physiological bases of sensation, motor systems, motivation, emotion, learning and memory.

TEXT: Neuroscience: Exploring the Brain, Bear, Connors & Paradiso, 4th edition, 2016

EXAMS, GRADING AND MAKE-UP POLICY: There will be 2 exams during the semester and a non-cumulative final exam. Each of the exams will count for one-third of the course grade. The final is scheduled for Thursday, May 2nd at 11:00-1:30. All makeup exams will be given immediately following the final exam. Missing two exams or more will result in a failing grade.

ATTENDANCE: Class attendance is strongly recommended since about half of the exam material will come from lectures.

RELIGIOUS HOLIDAY POLICY: The University of Miami, although a secular institution, is determined to accommodate those students who wish to observe religious holy days. Classes missed due to observances of religious holy days will count as excused absences only if you provide written notice of your intended absence(s) to me no later than the end of the first three meetings of our class. The ways in which missed tests, quizzes and other assignments can be made up after you return to class can be discussed with the instructor.

AMERICANS WITH DISABILITIES ACT (ADA): The ADA is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the instructor and the Office of Disability Services at (305) 284-2374 at the beginning of the semester.

UNIVERSITY OF MIAMI STUDENT HONOR CODE: All forms of scholastic dishonesty are prohibited, whether related to a written or oral examination, a thesis, term paper, mode of creative expression, computer-based work, or other academic undertaking. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, and violating the professional ethics of research projects. Moreover, students are expected to warn fellow students who do not appear to be observing proper ethical standards and to report violations of this Code. In determining what constitutes academic dishonesty, a student should be guided by the purposes of the Student Honor Code, common sense, and information provided by the instructor. All undergraduate students are responsible for reading, understanding, and upholding this Code. Cheating or plagiarism can be reason for failure of this course.

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STUDENT LEARNING OUTCOMES: By the end of this course, students will be able to:

1. Knowledge of Psychology/Neuroscience as a Scientific Discipline
 - a. identify major brain structures/pathways/connections and their functions/development
 - b. understand electrical and chemical communication/integration of information in the nervous system
 - c. describe the neural basis of sensory encoding, processing and perception
 - d. identify central and peripheral mechanisms in motor control of behavior
 - e. evaluate the proposed mechanisms of learned and unlearned emotional behavior
 - f. assess the importance of emotion/lifestyle on health and wellness
 - g. distinguish the various memory subsystems and molecular mechanisms underlying learning
 - h. assess the theories of cognition by examining what is known about the neural basis of attention, language and executive processes
2. Research and Quantitative Skills
 - a. identify common research designs and laboratory methods used to assess brain function
 - b. critique research approaches and data interpretation of published work

SCHEDULE OF COURSE TOPICS & REQUIRED READING

<u>Date</u>	<u>Topic</u>	<u>Required Reading</u>
January	15 <u>ORIENTATION:</u> Introduction to Psychobiology	Chapter 1
	17 <u>THE NERVOUS SYSTEM:</u> Neuroanatomy	Chapter 7, p. 531-538
	22 Neuroanatomy	
	24 Neurophysiology	Chapters 2,3,4
	29 Neurophysiology/Neurochemistry	Chapters 5,6
February	31 Neurochemistry	p. 538-548
	5 Hormones	p. 524-531
	7 Neural Development-Wiring the Brain	Chapter 23
	12 EXAM I	
	14 <u>SENSORY SYSTEMS:</u> Vision	Chapters 9,10
	19 Vision	
	21 Visual Perception	
March	26 <u>ATTENTION:</u> Neural Mechanisms	Chapter 21
	28 <u>MOTOR SYSTEMS:</u> Spinal and Peripheral	Chapter 13
	5 Central Motor Systems	Chapter 14
	7 NO CLASS	
	12 NO CLASS - SPRING BREAK	
	14 NO CLASS - SPRING BREAK	
	19 <u>EMOTION:</u> Neural mechanisms	Chapter 18
	21 Stress and Coping	
April	26 Behavioral Medicine	
	28 EXAM II	
	2 <u>LEARNING AND MEMORY:</u> Laws of Learning	Chapter 25
	4 Learning and Memory: Neural Mechanisms	
	9 Human Memory	Chapter 24
	11 <u>CEREBRAL CORTEX</u>	
	16 Functional Asymmetries & Language	Chapter 20
May	18 Frontal Lobes and Executive Functions	
	23 <u>BRAIN DAMAGE, RECOVERY, & EPILEPSY</u>	
	25 <u>BIOLOGICAL BASES OF ABNORMAL BEHAVIOR</u>	p.771-779
	2 FINAL EXAM & Makeup Exams, Tuesday, 11:00-1:30 p.m.	