PSYC C250: PSYCHOBIOLOGY

Item	Value
Curriculum Committee Approval Date	05/20/2005
Top Code	200100 - Psychology, General
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S), • Pass/No Pass (B)
Local General Education (GE)	• Area 4 Social and Behavioral Science (CD1)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B2 Life Science (B2)

Course Description

This course introduces the scientific study of the biological bases of behavior and its fundamental role in the neurosciences. Physiological, hormonal, and neurochemical mechanisms, and brain-behavior relationships underlying the psychological phenomena of sensation, perception, regulatory processes, emotion, learning, memory, and psychological disorders will be addressed. The course also notes historical scientific contributions and current research principles for studying brain-behavior relationships and mental processes. Ethical standards for human and animal research are discussed in the context of both invasive and non-invasive experimental research. PREREQUISITE: PSYC C1000. Transfer Credit: CSU; UC. C-ID: PSY 150.**C-ID:** PSY 150.

Course Level Student Learning Outcome(s)

1. Analyze and critically evaluate the biopsychosocial components of behavior.
2. Apply neurological concepts and theories as these relate to everyday life.
3. Demonstrate knowledge of the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.

Course Objectives

- 1. Define and use basic biological, physiological, and psychological terminology of the neurosciences.
- 2. Differentiate among specialty areas within Biological Psychology and the related disciplines within the neurosciences and the types of research that characterize the biopsychological approach.
- 3. Summarize the major issues in human evolution, genetics, and behavioral development that underlie the ?biology of behavior.?
- 4. Generate and explicate concrete examples of invasive vs. noninvasive research methods and the general principles of research ethics for the study of animals and human beings, including the research safeguards and the peer-review process in science.
- 5. Explain scientific approaches used in methodologies for the study of brain-behavior relationships.
- 6. Explain the general anatomy and physiology of the nervous system and its relationship to behavior.
- 7. Describe neural conduction and synaptic transmission.
- 8. Discuss the role of the neuroendocrine system as it relates to behavior.
- 9. Exemplify with concrete examples various brain-behavior relationships including ingestive behavior, motivation, sexual behavior, sleep, learning, memory, stress, drug dependence, and psychiatric disorders such as affective disorders and schizophrenia.

Lecture Content

Biological Psychology as a Course of Study A Physiological Approach to Understanding Consciousness The Nature of Behavioral Neuroscience Genes and Behavior and Human Evolution Natural Selection and Evolution Research Methods and Ethical Considerations of Biological Psychology and Neuroscience Invasive vs Non-invasive Research Ethics Applied to Animals and Humans The Nervous System Anatomy Central and Peripheral Nervous Systems Brain Development and Plasticity Communication within the Nervous System Vision and Audition Perception Body Senses and Chemical Senses Sensation The Effects of Psychoactive Drugs Principles of Psychopharmacology Sites of Drug Action Neurotransmitters and Neuromodulators Mechanisms of Perception, Conscious Awareness, and Attention Consciousness and Attention Visual and Auditory Perception Perceptual Learning Wakefulness and Sleep Physiological and Behavioral Basis of Sleep Disorders of Sleep Mechanisms of Sleep and Waking Biological Clocks Motivation Biological Psychological Emotional Ingestive Behavior Physiological Regulatory Mechanisms Drinking Eating and Metabolism Brain Mechanisms Obesity Anorexia Nervosa/Bulimia Nervosa Hormones, Sexual Development, and Sexual Behavior Sexual Development Hormonal Control of Sexual Behavior Neural Control of Sexual Behavior Parental Behavior Learning and Memory Sy naptic Plasticity Perceptual Learning Classical Conditioning Instrumental Conditioning Relational Learning Emotion and Stress Emotions as Response Patterns Communication of Emotions Feelings of Emotions Stress Disorders Human Communication, Language, and Cognition Speech Production and Comprehension Disorders of Reading and Writing Biological Bases of Psychological Disorders, Including Affective Disorders and Schizophrenia Tumors, Seizure Disorders, Cerebrovascular Accidents, Traumatic Brain Injury Disorders of Development Degenerative Disorders Disorders Caused by Infectious Diseases Motor Control and Action Schizophrenia Major Affective Disorders Anxiety Disorders Autistic, Attention-Deficit, Substance Abuse Disorders Autistic Disorder Attention-Deficit/Hyperactivity Disorder Substance Abuse Disorders

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)

Instructional Techniques

The instructor will utilize a variety of instructional techniques such as lecture format augmented by Power Point slides, computer-animated demonstrations, classroom demonstrations and video programs.

Learning strategies will include small group activities, case studies, individual student projects, guest speakers, web activities, and discussion board activities. Student evaluation methods will include taking tests and writing reports; doing independent reading and studying; and taking quizzes, midterm, and final examinations.

Reading Assignments

Students will read the assigned textbook.Additional articles and sites from the Internet and the textbook companion website will be provided.

Writing Assignments

Written Assignments: Students will submit at least two written assignments, at least one midterm essay, and responses to graded discussion topics.

Out-of-class Assignments

Quizzes: In class and/or take home quizzes will be given regularly that will cover the textbook, lecture material, and classroom discussion. Exam: Students will prepare for a Midterm and a Final Examination; these will be objective multiple-choice, fill-in, and/or matching exams.

Demonstration of Critical Thinking

Given a discussion topic, essay topic, or other written assignment, students will compare and contrast behavior within a context that is driven by physiological aspects of brain function, as opposed to psychological or social factors. Responding to objective and essay questions demonstrating critical thinking. Participation in small-group, in-class discussions and evaluation of ideas that evolve from the group discussions. Use of critical thinking skills in written assignments and/or reaction papers in class.

Required Writing, Problem Solving, Skills Demonstration

Students will be assigned weekly written assignments in the form of either discussion reaction, essay, journal, or other written assignments. At least two larger written reports will also be required during the class.

Eligible Disciplines

Psychology: Master's degree in psychology OR bachelor's degree in psychology AND master's degree in counseling, sociology, statistics, neuroscience, or social work OR the equivalent. Master's degree required.

Textbooks Resources

1. Required Carlson, N. Foundations of Behavioral Neuroscience, latest edition ed. Pearson, 2020 2. Required Kalat, J.W. Biological Psychology, latest edition ed. Wadsworth/Cengage, 2019 3. Required Pinel, J.P. Biopsychology, latest edition ed. Pearson, 2021 4. Required Garrett, B. L. Brain and Behavior, latest edition ed. Los Angeles: Sage, 2021

Other Resources

1. Coastline Library