

Course Outline

COURSE: PSYC 11 **DIVISION:** 10 **ALSO LISTED AS:** PSYC 1B

TERM EFFECTIVE: Summer 2020 **CURRICULUM APPROVAL DATE:** 05/12/2020

SHORT TITLE: BIOLOGICAL PSYCHOLOGY

LONG TITLE: Biological Psychology

<u>Units</u>	<u>Number of Weeks</u>	<u>Type</u>	<u>Contact Hours/Week</u>	<u>Total Contact Hours</u>
3	18	Lecture:	3	54
		Lab:	0	0
		Other:	0	0
		Total:	3	54

COURSE DESCRIPTION:

This course stresses the biological basis of behavior including: neuroanatomy, the senses, perception, learning, thinking, and psychological disorders. This course was previously listed as PSYC 1B. (C-ID: PSYC 150) **PREREQUISITE:** Completion of PSYC 1A or PSYC 10 with a grade of 'C' or better.

PREREQUISITES:

Completion of PSYC 1A, as UG, with a grade of C or better.

OR

Completion of PSYC 10, as UG, with a grade of C or better.

COREQUISITES:

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

L - Standard Letter Grade

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion

05 - Hybrid

72 - Dist. Ed Internet Delayed

STUDENT LEARNING OUTCOMES:

By the end of this course, a student should:

1. To define and use the basic biological, physiological, and psychological terminology of biological psychology and the neurosciences.
2. To identify, analyze, and explain the research methodologies that characterize the biological psychology approach and the neurosciences.
3. To identify and describe examples of invasive vs. noninvasive research methods, and research ethics and safeguards for the study of animals and humans.
4. To differentiate between neural and behavioral processes relative to biological psychology.
5. To differentiate among specialty areas within biological psychology and the related disciplines within the neurosciences.
6. To describe neural conduction and synaptic transmission.
7. To summarize the major issues in human evolution, genetics, and behavioral development that underlie the biology of behavior.
8. To explain the role of the central and peripheral nervous systems, and the neuroendocrine system as they relate to behavior and various psychopathologies.
9. To give examples of various brain-behavior relationships such as motivation, sexual behavior, sleep, learning, memory, stress, drug dependence, mood disorders, and schizophrenia.

CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS

Curriculum Approval Date: 05/12/2020

Week 1 (3 Hours Content): The Major Issues

Student Performance Objectives: Students will be able to list the biological explanations of behavior, and report the history, philosophical issues, and development of biological psychology and brain research. Students will be able to identify the specialty areas/career opportunities in biological psychology. Students will be able to describe and apply the concepts of Mendelian genetics, explain the dynamics of genes, behavior and human evolution, and describe Neural Darwinism.

Out-Of Class

Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 2 (3 Hours Content): The Major Issues (continued)

Student Performance

Objectives: Students will be able to describe the research methods and ethics applied to animals and humans in biological psychology and neuroscience. Students will be able to identify invasive vs. non-invasive research techniques.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 3 (3 Hours Content): Nerve

Cells and Nerve Impulses

Student Performance Objectives: Students will be able to distinguish between neurons and non-neuronal cells, and recognize and describe neuron types, structure and functions, and the processes involved in the transmission of nerve impulses within cells. Students will be able to explain the functions of the blood-brain barrier, and describe action potential.

Out-Of Class

Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 4 (3 Hours Content): Synapses

Student Performance Objectives: Students

will be able to identify and describe the communication within the nervous system via chemical and electrical systems, and the effects of alcohol and other drugs on neurotransmission, emotions, and behavior. Students will be able to name the major neurotransmitters and describe their functions.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 5 (3 Hours Content): Anatomy of the Nervous System

Student Performance Objectives: Students will be able to identify the anatomy of the nervous system, and define

nervous system terminology. Students will be able to identify and explain the structures and functions of the central and peripheral nervous systems, and the various parts of the brain such as hindbrain, midbrain, and forebrain. Students will be able to describe specific tools used to conduct biological psychology research and measure brain functioning.

Out-Of Class Assignments: Read the

textbook, answer critical thinking questions, and work on research paper using library resources .

Week 6 (3 Hours Content): Development and Plasticity of the Brain

Student Performance Objectives:

Students will be able to describe the growth and differentiation of the vertebrate brain, and compare and contrast the biochemical and environmental factors on brain development and behavior prenatally and postnatally.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 7 (3 Hours Content):

Development and Plasticity of the Brain (continued)

Student Performance Objectives: Students will be able to compare and contrast the structures and functions of the cerebral cortex, identify the

types and effects of brain damage, and explain how the brain recovers from damage.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using

library resources.

Week 8 (3 Hours Content): Vision

Student Performance Objectives: Students will be able to distinguish between sensation and perception, and describe transduction. Students will

be able to describe the development of the visual system, identify the physiological and neural processes involved in visual perception, and discuss the causes and effects of damage to the visual processing system.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 9 (3 Hours Content): The Other Sensory

Systems

Student Performance Objectives: Students will be able to identify and describe the receptors, physiological structures, and processes involved in audition, vestibular sensation, somatosensation, pain, taste, and olfaction.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 10 (3 Hours

Content): Movement

Student Performance Objectives: Students will be able to identify and describe the types of vertebrate muscles and their functions, and explain the physiological and neurological mechanisms and processes involved in movement. Students will be able to identify and describe movement disorders and their causes.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 11 (3 Hours Content): Wakefulness and Sleep

Student Performance Objectives: Students will be able to identify and describe endogenous cycles, biorhythms, and circadian rhythms. Students will be able to describe the mechanisms of perception and conscious awareness. Students will be able to discuss the functions of sleep and dreaming, and identify and describe the stages of sleep, abnormalities/disorders of sleep, and the underlying neurophysiological processes involved in sleep and sleep abnormalities/disorders.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 12 (3 Hours Content): Internal

Regulation

Student Performance Objectives: Students will be able to explain homeostasis and allostasis, and describe the behavioral and physiological processes involved in maintaining body temperature. Students will be able to describe the mechanisms of thirst, and compare and contrast osmotic versus hypovolemic thirst. Students will be able to describe the mechanisms of ingestive behavior, satiety, the role of the hypothalamus in eating regulation, and the psychological and behavioral processes involved in eating disorders.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 13 (3 Hours Content): Reproductive Behaviors

Student Performance Objectives: Students will be able to identify and describe the effects of hormones on sexual development and behavior, and the determinants of gender identity and sexual orientation.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 14 (3 Hours Content): Emotional Behaviors

Student Performance Objectives: Students will be able to describe autonomic nervous system actions, and relate the role of neurotransmitters and the limbic system in motivation and emotion. Students will be able to compare and contrast biopsychological theories of emotions and stress, and identify and discuss the primary causes of stress and other emotional syndromes. Students will be able to identify the hormones, brain centers, especially the amygdala, and neurotransmitters involved in aggressive behavior.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 15 (3

Hours Content): The Biology of Learning and Memory

Student Performance Objectives: Students will be able to identify and discuss the brain mechanisms and processes involved in memory, particularly the hippocampus, and describe potentiation. Students will be able to distinguish between classical and operant learning principles.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 16 (3 Hours Content): Cognitive Functions

Student Performance Objectives: Students will be able to describe the functions of the left and right hemispheres of the brain, the results of cutting the corpus callosum, and the development of lateralization and handedness. Students will be able to explain the processes involved in language development, and the results of brain damage on receptive, expressive, and productive language functioning.

Out-Of Class Assignments: Read the textbook, answer critical thinking questions, and work on research paper using library resources.

Week 17 (3 Hours Content): Mood Disorders and Schizophrenia

Student Performance Objectives: Students will be able to identify and describe organic brain syndromes, and the biological bases of psychological disorders such as affective disorders and schizophrenia. Students will be able to compare and contrast theories of complex psychological disorders.

Week 18 (2 Hours): Final Exam

METHODS OF INSTRUCTION:

1. Texts 2. Lectures 3. Audio-visual Aids 4. Collaborative Learning

OUT OF CLASS ASSIGNMENTS:

Required Outside Hours: 60

Assignment Description:

Assigned Readings

Students must read the textbook and answer critical thinking questions for each of the textbook chapters.

Required Outside Hours: 48

Assignment Description:

Research Paper

Students will select an area in biological psychology, review the empirical research in that area, and write a 10-12 page research paper on it.

METHODS OF EVALUATION:

Writing assignments

Percent of total grade: 30.00 %

30% - 35% Term papers; Written review and critique of online resources

Objective examinations

Percent of total grade: 55.00 %

55% - 65% Multiple choice; True/false; Completion

Other methods of evaluation

Percent of total grade: 15.00 %

10% - 15% Oral presentation of research findings.

REPRESENTATIVE TEXTBOOKS:

Kalat, James. Biological Psychology, 13th Edition. Wadsworth Cengage Learning, 2019.

ISBN: ISBN 10: 9781337408202

Reading Level of Text, Grade: 12 Verified by: C.Oler

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

GAV D2, effective 202050

CSU GE:

CSU D, effective 201570

CSU D2, effective 202050

CSU D9, effective 201430

IGETC:

IGETC 4I, effective 202050

CSU TRANSFER:

Transferable CSU, effective 202050

UC TRANSFER:

Transferable UC, effective 201570

SUPPLEMENTAL DATA:

Basic Skills: N

Classification: Y

Noncredit Category: Y

Cooperative Education:

Program Status: 1 Program Applicable

Special Class Status: N

CAN:

CAN Sequence:

CSU Crosswalk Course Department: PSYC

CSU Crosswalk Course Number: 150

Prior to College Level: Y

Non Credit Enhanced Funding: N

Funding Agency Code: Y

In-Service: N

Occupational Course: E

Maximum Hours: 3

Minimum Hours: 3

Course Control Number: CCC000280224

Sports/Physical Education Course: N

Taxonomy of Program: 200100