GAVILAN COLLEGE
5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: PSYC 11 DIVISION: 10 ALSO LISTED AS:

TERM EFFECTIVE: Summer 2025 CURRICULUM APPROVAL DATE: 05/13/2025

SHORT TITLE: BIOLOGICAL PSYCHOLOGY

LONG TITLE: Biological Psychology

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

Out of Class Hrs:	108.00
Total Learning Hrs:	162.00

COURSE DESCRIPTION:

This course examines the complex relationship between biological processes, mental functions, and behavior. Students will explore how the brain, nervous system, genetics, and other biological factors shape thoughts, emotions, and actions while also considering how psychological processes influence biological functions. Throughout this course, students will advance their knowledge of the biological foundations of behavior and their implications for psychology and neuroscience. PREREQUISITE: Completion of Introduction to Psychology (PSYC 10 or PSYC C1000) with a grade of C or better. C-ID: (PSY 150).

PREREQUISITES:

Completion of PSYC 10, as UG, with a grade of C or better.
OR
Completion of PSYC C1000, as UG, with a grade of C or better.

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

71 - Dist. Ed Internet Simultaneous

72 - Dist. Ed Internet Delayed

STUDENT LEARNING OUTCOMES:

By the end of this course, a student should:

1. Identify and describe the major structures and functions of the nervous system, including key brain regions and neural pathways.

2. Explain the process of neural communication, including the role of neurotransmitters and the impact of psychoactive substances on synaptic transmission.

3. Apply biological psychology concepts to real-world behaviors, including learning, memory, emotion, pair-bonding and mating, and decision-making.

4. Analyze neuroplasticity and hemispheric specialization, examining how the brain adapts to learning, injury, and functional differences between hemispheres.

5. Examine the influence of genetics and environment on behavior, including the role of epigenetics and neurodevelopmental factors.

6. Apply knowledge of sensory and motor systems to explain how the brain processes external stimuli and coordinates movement.

7. Evaluate past and present paradigms and practices related to psychological distress, atypical behavior, and altered states, assessing their underlying

assumptions, societal influences, and impact on individuals.

8. Create a research-based protocol to support mental and emotional well-being in oneself or others, applying key principles of biological psychology.

COURSE OBJECTIVES:

By the end of this course, a student should:

1. be able to explain the fundamental principles of biological psychology, including its history, key theories, and research methodologies.

2. be able to describe the structure and function of the nervous system, including the central and peripheral nervous systems, neural communication, and major

brain regions.

3. be able to analyze the role of neurotransmitters and hormones in behavior, emotion, and cognition.

4. be able to explain the mechanisms by which the brain controls the movement of the body, and the impact of movement on emotional activity.

5. be able to analyze neural and hormonal mechanisms of homeostasis and their role in physiological and psychological balance.

6. be able to explain common human reproductive behaviors from an evolutionary perspective.

7. be able to identify the biological mechanisms of sensation and perception, including the neural pathways involved in vision, hearing, touch, taste, and smell.

8. be able to evaluate the biological basis of learning and memory, including neuroplasticity, the role of the hippocampus, and neurological disorders affecting

memory.

9. be able to discuss the neurobiological foundations of motivation and emotion, including the role of brain structures such as the hypothalamus, amygdala, and

prefrontal cortex.

10. be able to articulate the impact of genetics and environment on behavior, including epigenetics, twin studies, and neurodevelopmental influences.

COURSE CONTENT:

Curriculum Approval Date: 05/13/2025

1. Mind Body Mystery (3 hours)

a. Various philosophical perspectives on this topic

b. The placebo effect and other examples of the power of mental phenomena to influence biological functions

2. Anatomy of the Nervous System (6 hours)

a. Systems of the body

b. Organization of the nervous system

c. Brain regions and structures

d. Glia cells

e. Neurons and neurotransmitters

f. Neurotransmission

g. Psychoactive substances

h. Role of the blood-brain barrier and cerebrospinal fluid

3. Sensation and Perception (4 hours)

a. Sensory organs and pathways

b. Unique neurological conditions affecting sensory processes

c. Perception and the factors that influence it

d. Interplay of perception, reality, emotion

e. Common delusions and their neural correlates

4. Genetics (6 hours)

a. Joint influence of nature and nurture

b. History of eugenics

c. Role of identical twins in psychology research

d. Ancestral lines, new genomes, and inbreeding

e. Genotypes and phenotypes

f. Homozygous and heterozygous alleles

g. Dominant and recessive alleles

h. Epigenetics

i. CRISPR gene editing technology

5. Brain Development (4 hours)

a. Conception

b. Fetal nervous system development

c. Proliferation, migration, and differentiation of cells

d. Synaptogenesis and synaptic pruning

e. Sensitive and critical periods of development

6. Brain Principles (4 hours)

a. Neuroplasticity and its biological and psychological mechanisms

b. Hemispheric specialization

c. Localization of brain function

7. Homeostasis and Internal Regulation (3 hours)

a. Sleep-wake cycles and the circadian rhythm

b. Neural and hormonal regulation of homeostasis

COURSE CONTENT(CONTINUED):

8. Reproductive Behaviors (4 hours)
a. Average differences between males and females
b. Mating strategies
c. Features of human reproductive behavior
d. Pheromones
e. Biological and psychological factors contributing to attraction and compatibility
f. Sexual harassment and assault
g. Paraphilias
9. Emotions and Stress (4 hours)
a. Neural and hormonal correlates of emotions and stress
b. Role of perception in emotions and stress
c. Eustress and distress
d. Stress and emotional regulation
10. Movement (4 hours)
a. Motor cortex and voluntary movement
b. Reflexes
c. Muscular system anatomy and function
d. Movement inhibition
e. Basal ganglia, cerebellum, and other brain structures involved in movement
f. Brain-machine interfaces
g. Movement and psychological well-being
11. Cognitive Functions (4 hours)
a. Language and its genetic and neurological components
b. Memory and its neurological components
c. Attention and its neurological components
d. Executive functions and the prefrontal cortex
12. Neurodivergence, Psychological Distress, and Altered States (6 hours)
a. Distinctions between psychiatry and psychology
b. Past and present paradigms and practices
c. Types of psychological distress and atypical behavior
d. Biological and psychological contributors to well-being
Final Exam (2 hours)

METHODS OF INSTRUCTION:

Methods of Instruction may include but are not limited to the following: Lecture Discussion Small group activities Large group activities Cross-disciplinary collaborations Oral presentations Electronic discussions/chat

OUT OF CLASS ASSIGNMENTS:

Required Outside Hours 60

Assignment Description

Assigned Reading/Watching

Students will be required to digest a variety of required out-of-class learning resources, which may include reading the assigned textbook, reading assigned articles/studies, reviewing PowerPoint slides, and viewing assigned videos/interviews.

Required Outside Hours 48

Assignment Description

Research Paper/Project

Students may be required to write a research paper or conduct a research project related to biological psychology, which may involve reviewing empirical research that is relevant to the subject, writing a literature review, and/or organizing research findings into a presentation to be given in class

METHODS OF EVALUATION:

Objective examinations

Evaluation Percent 50

Evaluation Description

40% - 60%

Quizzes and exams that may include multiple choice, short answer, fill-in-the-blank, or true/false questions.

Writing assignments

Evaluation Percent 30

Evaluation Description

20-40%

Written assignments may include reflections on course content, literature reviews, and/or research projects.

Other methods of evaluation

Evaluation Percent 20

Evaluation Description

10% - 30%

Other methods of evaluation may include oral presentations of research findings, case study analyses, group discussions, and creative projects demonstrating conceptual understanding.

REPRESENTATIVE TEXTBOOKS:

Biological Psychology, 14th Edition, Kalat, James, Cengage Learning, 2023 or a comparable textbook/material.

ISBN: ISBN 10: 0357798120

Rationale: This resource provides a detailed and contemporary examination of the field.

12 Grade Verified by: Nick Fortino

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:
- GAV D2
- GAV Area 4 = Social & Behavior

CSU GE:
- CSU D2

IGETC:
- IGETC 4

CSU TRANSFER:
- Transferable CSU

UC TRANSFER:
- Transferable UC

SUPPLEMENTAL DATA:

Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
C-ID: (PSYC 150)
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: E
Course Control Number: CCC000280224
Sports/Physical Education Course: N
Taxonomy of Program: 200100