

**PSYCH 10 Course Outline as of Fall 2019****CATALOG INFORMATION**

Dept and Nbr: PSYCH 10 Title: INTRO TO BIO PSYCHOLOGY

Full Title: Introduction to Biological Psychology

Last Reviewed: 11/4/2024

| Units   |      | Course Hours per Week |      | Nbr of Weeks | Course Hours Total |       |
|---------|------|-----------------------|------|--------------|--------------------|-------|
| Maximum | 3.00 | Lecture Scheduled     | 3.00 | 17.5         | Lecture Scheduled  | 52.50 |
| Minimum | 3.00 | Lab Scheduled         | 0    | 6            | Lab Scheduled      | 0     |
|         |      | Contact DHR           | 0    |              | Contact DHR        | 0     |
|         |      | Contact Total         | 3.00 |              | Contact Total      | 52.50 |
|         |      | Non-contact DHR       | 0    |              | Non-contact DHR    | 0     |

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

**Catalog Description:**

This course introduces the scientific study of the biological basis 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.

**Prerequisites/Corequisites:**

Course Completion of PSYC C1000 ( or PSYC 1A or PSYCH 1A)

**Recommended Preparation:**

Eligibility for ENGL 1A or equivalent

**Limits on Enrollment:****Schedule of Classes Information:**

Description: This course introduces the scientific study of the biological basis 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. (Grade Only)  
 Prerequisites/Corequisites: Course Completion of PSYC C1000 ( or PSYC 1A or PSYCH 1A)  
 Recommended: Eligibility for ENGL 1A or equivalent  
 Limits on Enrollment:  
 Transfer Credit: CSU;UC.  
 Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

|                      |                      |                                |                      |           |
|----------------------|----------------------|--------------------------------|----------------------|-----------|
| <b>AS Degree:</b>    | <b>Area</b>          |                                | Effective:           | Inactive: |
|                      | D                    | Social and Behavioral Sciences | Fall 2018            |           |
| <b>CSU GE:</b>       | <b>Transfer Area</b> |                                | Effective:           | Inactive: |
|                      | D                    | Social Science                 | Fall 2018            |           |
| <b>IGETC:</b>        | <b>Transfer Area</b> |                                | Effective:           | Inactive: |
|                      | 4                    | Social and Behavioral Science  | Fall 2018            |           |
|                      | 4I                   | Psychology                     |                      |           |
| <b>CSU Transfer:</b> | Transferable         |                                | Effective: Fall 2018 | Inactive: |
| <b>UC Transfer:</b>  | Transferable         |                                | Effective: Fall 2018 | Inactive: |

### **CID:**

|                            |                                       |
|----------------------------|---------------------------------------|
| CID Descriptor:PSY 150     | Introduction to Biological Psychology |
| SRJC Equivalent Course(s): | PSYC10 OR PSYC10 AND PSYC10L          |
| CID Descriptor:PSY 150     | Introduction to Biological Psychology |
| SRJC Equivalent Course(s): | PSYC10 OR PSYC10 AND PSYC10L          |

### **Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

### **Student Learning Outcomes:**

At the conclusion of this course, the student should be able to:

1. Identify basic brain structures and functional neural systems, as related to psychological pathologies.
2. Examine brain structures and functional organization relating to language, learning, memory, reward, and sensory/motor systems.
3. Compare and contrast the role for neurotransmitters in the etiology and treatment of various psychopathologies such as schizophrenia, depression, anxiety, and substance abuse.

### **Objectives:**

At the conclusion of this course, the student should be able to:

1. Define and use 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, sexual behavior, sleep, learning, memory, stress, drug dependence, and psychiatric disorders such as affective disorders and schizophrenia.

## **Topics and Scope:**

- I. The Origins of Brain and Behavior
  - A. Perspectives on Brain and Behavior
  - B. Evolution of Brain and Behavior
  - C. Brain Size and Intelligence
- II. The Nervous System's Functional Anatomy
  - A. Overview of Brain Function and Structure
  - B. Nervous, Central, Somatic, and Automatic System's Evolutionary Development
  - C. Basic Principles of Nervous System Function
- III. Functional Units of Nervous System
  - A. Cells of Nervous System
  - B. Internal Structure of Cell
  - C. Genes, Cells, and Behavior
- IV. Neurons and Electrical Signals to Transmit Information
  - A. Electrical Activity of a Membrane
  - B. How Neurons Integrate Information
  - C. How Sensory Stimuli Produce Movement
- V. Neural Communication and Adaptation
  - A. Structure of Synapses, Excitatory and Inhibitory Messages
  - B. Neurotransmitter Systems and Behavior
  - C. Adaptive Role of Synapses in Learning and Memory
- VI. Influence of Drugs and Hormones on the Brain and Behavior
  - A. Principles of Psychopharmacology
  - B. Psychoactive Drugs
  - C. Responses to Drugs and Treating Drug Abuse
- VII. Brain Structures and Functions
  - A. Measuring and Manipulating Brain and Behavior
  - B. Chemical and Genetic Measures of Brain and Behavior
  - C. Neuroscience Research Methods
- VIII. Development and Adaptation of Nervous System
  - A. Neurobiology of Development
  - B. Brain Development and the Environment
- IX. Nature of Sensation and Perception
  - A. Visual System's Functional Anatomy
  - B. Neuronal Activity
- X. Learning and Memory
  - A. Neural Systems Underlying Explicit and Implicit Memories
  - B. Structural Basis of Brain Plasticity
  - C. Recovery from Brain Injury

## XI. Causes of Emotional and Motivated Behavior

- A. Evolution, Environment, and Behavior
- B. Identifying the Causes of Behavior
- C. Control of Regulatory and Non-regulatory Behavior

## XII. Sleep, Dream, and the Brain

- A. Neural Basis of the Biological Clock
- B. Neural Basis of Sleep and Sleep Disorders
- C. Sleep and Consciousness

## XIII. The Nature of Thought and the Brain

- A. Cognition and the Association Cortex
- B. Cerebral Asymmetry in Thinking
- C. Intelligence and Consciousness

## XIV. Biological Bases of Psychological Disorders

- A. Classifying and Treating Brain and Behavioral Disorders
- B. Understanding and Treating Neurological Disorders
- C. Understanding and Treating Psychiatric Disorders

### Assignment:

1. Read approximately 35-60 pages per week and discuss assigned material in the textbook and supplements
2. Writing assignments that may include: term/research paper or projects for a minimum of 1250 words
3. Oral presentations and/or group projects may be assigned
4. Quizzes (0-4), exams (2-3) and one final exam or project

### Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Essay, term or research papers; a minimum of 1,250 words for the course

Writing  
10 - 25%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

None

Problem solving  
0 - 0%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations  
0 - 0%

**Exams:** All forms of formal testing, other than skill performance exams.

Quizzes, exams and one final exam or project

Exams  
75 - 90%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

Oral presentations and/or group projects

Other Category  
0 - 10%

**Representative Textbooks and Materials:**

Biological Psychology. 13th ed. Kalat, James. Cengage Learning. 2018

Physiology of Behavior. 12th ed. Carlson, Neil and Birkett, Melissa. Pearson. 2017

An Introduction to Brain and Behavior. 5th ed. Kolb, Bryan and Whishaw, Ian and Teskey, G. Worth Publishers. 2016

Biopsychology. 9th ed. Pinel, John. Pearson. 2014 (classic)