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Semester effective: Spring 2016

Psychology (PSYC) 2050 Introduction to Biological Psychology (3) CSU

Advisory: Successful completion of Biology 1500 or 1510 and English 1500 with a ‘C’ or better

Total Hours: 48 hours lecture

Catalog 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.

Type of Class/Course: Degree Credit

Text: Kalat, James E. *Biological Psychology*. 12th ed. Wadsworth, 2015. Print.

Additional Instructional Materials: None

Course Objectives:

By the end of this course, a successful student will be able to:

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, and
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.

Course Scope and Content:

Unit I Introduction

- A. Biological Psychology as a Course of Study
- B. Terminology of the neurosciences
 - i. Definitions and use of basic biological, physiological, and psychological terminology
- C. Specialty areas within Biological Psychology and Related Disciplines
 - i. Types of Research that Characterize Biological Psychology

Unit II Genes and Behavior and Human Evolution

- A. Human Evolution, Genetics, and Behavioral Development that Underlie Behavior

Unit III Research Methods and Ethical Considerations of Biological Psychology and Neuroscience

- A. Research Methods for the Study of Brain-Behavior Relationships
- B. Invasive and Non-Invasive Methods
- C. Research Ethics Applied to Animals and Humans
- D. Research Safeguards and the Peer-Review Process

Unit III The Nervous System

- A. Anatomy & Physiology
- B. The Nervous System and the Relationship to Behavior
- C. Development and Plasticity
- D. Communication within the Nervous System
 - i. Neural Conduction and Synaptic Transmission
- E. Ingestive Behavior

Unit IV States of Consciousness and Memory

- A. Psychoactive Drugs
 - i. Effects
 - ii. Dependence
- B. Mechanisms of Perception, Conscious Awareness, and Attention
- C. Wakefulness and Sleep
- D. Learning and Memory

Unit V Motivation, Emotion, and Disorders

- A. Motivation

- B. Emotion and Stress
- C. Biological Bases of Psychological Disorders, Including Affective Disorders and Schizophrenia

- Unit VI Hormones, Sexual Development, and Sexual Behavior
- A. Neuroendocrine System and its Relationship to Behavior
 - B. Sexual development
 - C. Sexual behavior

Learning Activities Required Outside of Class:

The students in this class will spend a minimum of 6 hours per week outside of the regular class time doing the following:

1. Studying
2. Answering required questions
3. Completing required reading
4. Completing required projects
5. Reading, summarizing, or integrating, research

Methods of Instruction:

1. Lectures
2. Discussions
3. Visual presentations
4. Group projects
5. Worksheets
6. Questions

Methods of Evaluation:

1. Substantial writing assignments, including:
 - a. summarizing research findings
 - b. integrating research findings
2. Short writing assignments, including:
 - a. essay exams
 - b. application and opinion essays
2. Other examinations, including:
 - a. multiple choice
 - b. true/false items
3. Skill demonstration, for example:
 - a. Identify specific elements of the central and/or peripheral nervous system in situ.

Supplemental Data:

T.O.P. Code:	200100- Psychology, General
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Sam Priority Code:	E: Non-occupational
Funding Agency:	Y: Not Applicable
Program Status:	1: Program Applicable
Noncredit Category:	Y: Not Applicable
Special Class Status:	N: Course is not a special class
Basic Skills Status:	N: Not Applicable
Prior to College Level:	Y: Not Applicable
Cooperative Work Experience:	N: Course is not a part of a cooperative education program
Eligible for Credit by Exam:	Yes
Eligible for Pass/No Pass:	Yes