



**CATALOG DESCRIPTION:** INTRODUCES STUDENTS TO THE FIELD OF BIOLOGICAL PSYCHOLOGY OR BEHAVIORAL NEUROSCIENCE. STUDENTS WILL LEARN ANATOMY, PHYSIOLOGY, AND CHEMISTRY OF THE NERVOUS SYSTEM AND THEIR RELATIONSHIPS TO BEHAVIOR.

Prerequisites:

PSYC120,  
ENG111,  
RDGN114

Semester Offered:

Fall

***Common Student Learning Outcomes***

*Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...*

**BROAD AND SPECIALIZED LEARNING**

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

**CRITICAL THINKING**

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

**CULTURAL AND CIVIC ENGAGEMENT**

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

**EFFECTIVE COMMUNICATION**

Students will exchange ideas and information with clarity in multiple contexts.

**INFORMATION LITERACY**

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

**INTEGRATING TECHNOLOGIES**

Students will demonstrate fluency in the application and use of technologies, information, or resources in multiple contexts.

*Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate school.*

## **Course Learning Outcomes**

Upon successful completion of the course, the student will be able to...

### **GENERAL LEARNING OBJECTIVES**

1. Demonstrate an understanding of the different structures of the brain and nervous system.
2. Demonstrate an understanding of the different functions of the nervous system .

3. Demonstrate an understanding of the chemistry of the brain and nervous system .
4. Develop the ability to apply 1, 2, & 3 above to different psychological processes such as: learning, memory, sensation, perception, drive states, sleep, language, etc.
5. Develop the ability to apply 1,2, &3 above to psychological disorders such as: bipolar disorder, unipolar disorder, anxiety, and schizophrenia.

## SPECIFIC LEARNING OUTCOMES

Upon successful completion of the course, the student will be able to ...

- 1. Demonstrate an understanding of the different structures of the brain and nervous system:**
  - a. Describe the gross anatomy of the nervous system;
  - b. Describe the microscopic anatomy of the nervous system which includes neurons and neuroglia
- 2. Demonstrate an understanding of the different functions of the nervous system:**
  - a. Describe the physiology of the nervous system which includes:
    - i. resting potentials,
    - ii. action potentials
    - iii. graded potentials
    - iv. neurotransmitters
    - v. synaptic transmission
    - vi. IPSPs, EPSPs, PSPs, etc.;
- 3. Demonstrate an understanding of the chemistry of the brain and nervous system :**
  - a. Explain how voltage gated ion channels work
  - b. Discuss how different drugs effect neuronal functioning
    - i. Agonistic drugs
    - ii. Antagonistic drugs;
  - c. Explain drug addiction and the brain's reward circuits
- 4. Develop the ability to apply 1, 2, & 3 above to different psychological processes such as: learning, memory, sensation, perception, drive states, sleep, language, etc:**
  - a. Discuss the different diseases of the nervous system and recovery of function from brain damage;
  - b. Evaluate the different sensory systems structure and function (i.e. vision & hearing);
  - c. Discuss how hormones work;
  - d. Discuss sexual differentiation and biological basis of gender differences/ preferences;
  - e. Explain the function of movement and the motor system
  - f. Describe the regulation of drive states such as hunger, thirst, sex and regulation of body temperature;
  - g. Explain the biological basis of learning and memory;
  - h. Discuss the different sleep stages, functions of sleep and the circadian cycle;
  - i. Discuss the biological basis of emotions and stress;
  - j. Explain lateralization of language and other cortical functions that are localized;
- 5. Develop the ability to apply 1,2, &3 above to psychological disorders such as: bipolar disorder, unipolar disorder, anxiety, and schizophrenia:**
  - a. Describe the biological basis of mood disorders and schizophrenia;
  - b. Describe biological basis of anxiety disorders;

- c. Describe other disorders of brain dysfunction (e.g. Alzheimers's, Autism, Epilepsy, Multiple Sclerosis, Parkinson's Disease, Huntington's Chorea, etc.).