BAKER COLLEGE
STUDENT LEARNING OUTCOMES

BIO3810 Neuroanatomy
3 Semester Credit Hours

Student Learning Outcomes and Enabling Objectives

1. Evaluate gross human neuroanatomy and physiology.
    a. Examine the major divisions of the nervous system, deep brain nuclei, ascending and descending tracts, nervous tissue histology, cranial nerves, blood supply to the nervous system, meninges, ventricular system.
    b. Examine the peripheral nervous system, including cutaneous distribution and muscle innervation.
2. Examine the physiological development of the nervous system.
    a. Describe the major fetal structures of the nervous system and how they develop into infancy.
    b. Describe how structures of the nervous system continue to develop through major life stages of infancy through adulthood.
3. Evaluate the regulation of voluntary and involuntary movements.
    a. Examine the major components in regulating movements.
        i. The motor pathway
        ii. Muscle spindle
        iii. Golgi tendon organ
        iv. Cerebellum
        v. Reticular formation
        vi. Basal ganglia
        vii. Red-nucleus
        viii. Primary and associated motor cortex
        ix. Thalamus
        x. Vestibular system
    b. Examine reflexes.
4. Evaluate sensory perception and integration.
    a. Explain the relationship between sensory receptors, sensation and perception.
    b. Examine the general senses.
        i. Exteroceptive
        ii. Visceroceptive

        iii. Proprioceptive
    c. Examine the special senses.
        i. Sight
        ii. Taste
        iii. Smell
        iv. Hearing
        v. Equilibrium
    d. Examine Human behavioral responses.
    e. Examine homeostasis of the body.
5. Evaluate pathologies of the nervous system.
    a. Describe the location and consequences of lesions.
        i. Principal neural pathways
        ii. Centers at different levels of the spinal cord
        iii. Brainstem
        iv. Cerebral cortex
    b. Analyze the characteristics of spasticity and rigidity and the proposed factors that may contribute to these clinical conditions.
    c. Calculate functional losses because of peripheral nerve damage.
    d. Demonstrate the clinical significance of dermatomes and myotomes.
    e. Examine abnormalities in the following components of the CNS.
        i. Blood supply
        ii. Ventricular system

Big Ideas and Essential Questions

Big Ideas

- Anatomy and physiology
- Development
- Movement regulation
- Sensation and perception
- Pathology

Essential Questions

1. What are the major components of the central and peripheral nervous system and how do they function?
2. How does the nervous system develop from fetal stages through postnatal life stages?
3. How do the voluntary and involuntary motor pathways function?
4. How do sensation and perception interrelate?

5. What are common disorders of the nervous system and how do they affect activities of daily living?

These SLOs are approved for experiential credit.

Effective: Spring 2021