BAKER COLLEGE
STUDENT LEARNING OUTCOMES

OTA 2250 Neurological Foundations of Motor Control

2 Semester Hours

Student Learning Outcomes and Enabling Objectives

1. Differentiate macroanatomy of the nervous system and describe overall functions as related to motor and sensory control. (B.1.1.)
    a. Explain the physiology associated with neuronal conduction, reflexes, velocity and transmission as relates to motor control
    b. Breakdown the major peripheral nerves detailing their primary motor and sensory functions
    c. Characterize the role of the muscle spindle and Golgi tendon organ associated with motor control
    d. Describe cerebrum and spinal cord transmission

2. Analyze the functional significance of the anatomical and physiological lifespan changes in the motor development across the lifespan (B.1.2.)
    a. Outline motor milestones from 0-12 months of age
    b. Identify the development of prehensile skills and fine motor development from infancy to adulthood
    c. Explain postural balance and movement changes

3. Identify the functional significance of the anatomical and physiological lifespan changes in the nervous/sensory development across the lifespan (B.1.2.)
    a. Differentiate between upper and lower motor neurons
    b. Outline sequence of normal reflex/reactions
    c. Define righting, equilibrium, and protective reactions
    d. Describe proprioception and movement patterns

4. Examine psychomotor changes throughout the lifespan (B.1.2., B.1.3.)
    a. Explain the role of mental functions and motor control
    b. Categorize the effect of mental impairment on motor control
    c. Describe the role of self-confidence, memory, attention, and knowledge on motor performance

5. Apply neurological dysfunction to movement, and rehabilitation (B.1.1., B.5.6.)
    a. Explain neuroplasticity and its role in functional return
    b. Describe neurorehabilitation including Rood, Brunnstrom, and NDT

c. Explain proprioception training
d. Identify the role of vision in motor performance

6. Differentiate the components of motor learning and control (B.1.1., B.3.1.)
    a. Describe motor skills and abilities
    b. Explain movement preparation
    c. Compare behavior theories of motor control
    d. Describe movement patterns

7. Evaluate motor learning (B.1.1., B.3.1.,B.5.19.)
    a. Explain the theories and stages of learning
    b. Identify learning styles, generalization, and motivation for learning
    c. Explain when to use verbal instructions, observation, and demonstration

8. Create motor performance interventions (B.2.10., B.2.11., B.5.1., B.5.2.)
    a. Demonstrate functional application of pacing techniques.
    b. Identify bilateral transfer
    c. Sequence and progression of skill development

9. Explain and create occupational therapy rehabilitation scenarios (B.2.2., B.5.1., B.5.2., B.5.3., B.5.20., B.5.28.)
    a. Explain practice context and guidelines
    b. Identify activity demands in motor performance interventions
    c. Create outcome goals, short term goals, and long term goals for motor performance

Required Elements

RE 1. Complete Motor Learning and Control Online Labs

RE 2. Demonstration of a Motor Performance Intervention

RE 3. Demonstration of a Neurorehabilitation technique

RE 4. Quizzes 1, 2, and 3

RE 5. Final Exam

These SLOs are not approved for experiential credit.

Effective: Fall 2017