



Course Description

PHT2162 | Survey of Neurological Deficits | 3.00 credits

This course introduces the etiology, pathophysiology, and clinical manifestations of common neurological diseases/conditions treated in physical therapy. Neuroanatomy of the central and peripheral nervous system is reviewed. Reflex integration as well as normal growth and development are discussed. Students have an end of course project-based topic assignment that pertains to commonly seen neurological conditions in physical therapy. Prerequisites: PHT2120, PHT2120L, PHT2224, PHT2224L, PHT2801C; Corequisites: PHT2701, PHT2701L, PHT2810.

Course Competencies:

Competency 1: The student will identify the overall organization of the nervous system by:

1. Identifying the major divisions
2. Describing the location of the motor cortex
3. Describing the location and major function(s) of the major lobes
4. Describing in a general way clinical manifestations of an impairment of any of the lobes
5. Defining homunculus
6. Defining the pyramidal and extrapyramidal tract in terms of origin, destination and characteristics of a lesion
7. Differentiating between phasic and tonic muscles
8. Defining a motor unit
9. Describing the two ways to increase the force of a muscular contraction
10. Listing the receptors presumed to aid in the feedback control of movement and define their role(s).
11. Differentiating between the alpha and the gamma motor neuron.
12. Defining dermatome.
13. Listing the cranial nerves and matching each nerve with its appropriate functions.
14. Defining the autonomic nervous system and describing it in terms of anatomical and functional divisions.
15. Describing the anatomical structure of a muscle spindle and intrafusal muscle fibers.
16. Differentiating between characteristics of an upper motor neuron and a lower motor neuron lesion.
17. Defining the following disturbances in muscle tone: hypotonia, hypertonia, spasticity, and rigidity.
18. Defining the following terms: tremors, spasms, choreiform movements, athetoid movements, ataxia, and clonus.

Competency 2: The student will understand processes associated with Spinal Cord Injury by:

1. Defining quadriplegia and paraplegia
2. Listing the major causes of spinal cord lesions and identifying examples of each
3. Discussing the significance of lesions above C4

Competency 3: The student will demonstrate an understanding of processes associated with Upper Motor Lesions of the Brain by:

1. Reviewing the motor characteristics common to UMN lesions
2. Reviewing the etiology and clinical manifestations of UMN injuries commonly treated in the physical therapy clinic, including Cerebral Vascular Accident, Traumatic Brain Injury, Multiple Sclerosis, and Basal Ganglia Disorders

Competency 4: The student will demonstrate an understanding of processes associated with LMN Injuries by:

1. Defining Wallerian degeneration
2. Discussing recovery of lower motor injuries relative to prognosis, length of time clinical course
3. Identifying nerves frequently associated with LMN injuries
4. Defining infectious polyneuropathy and describing clinical manifestations

5. Defining post-polio injury and describing clinical manifestations

Competency 5: The student will understand Pediatric Injuries by:

1. Reviewing normal development (gross motor and reflex)
2. Reviewing neurophysiological relationships of reflexes and gross motor development
3. Identifying etiologies common to the pediatric patient

Learning Outcomes:

1. Communication
2. Critical Thinking
3. Ethical Issues
4. Computer / Technology Usage