

STANDARD COURSE OUTLINE

PHTA 2342 **Neurophysiology**
PHTA 2341 **Neurophysiology Lab**

PREREQUISITE Successful Completion of PTA Semester I (fall classes)

COURSE DESCRIPTION: This course is designed to provide the PTA student with a strong understanding of the pathophysiology and clinical manifestations for lesions of the PNS and CNS, and the skills to perform neurological assessments.

CREDIT HOURS PHTA 2342 2 credit hours / non-transferable
 PHTA 2341 1 credit hour / non-transferable

TARGET AUDIENCE Students admitted to the PTA Program

INSTRUCTIONAL MATERIALS

Required:

1. Stephen Goldberg, M.D., Clinical Neuroanatomy Made Ridiculously Simple; Medmaster, Inc.
2. O'Sullivan & Schmitz; Physical Rehabilitation Assessment And Treatment; F.A. Davis Company 4th edition; 2001

COURSE OBJECTIVES

Upon successful completion of this course, the student should be able to:

1. Demonstrate ability to accurately perform neurological assessments to include: integrity of myotomes and dermatomes, balance and coordination testing utilizing a variety of tools to include some standardized questionnaires or forms, equilibrium & non-equilibrium testing, sensory testing, assessment of muscle tone, DTR's, cranial nerves, and the Glasgow Coma Scale.
2. Given a written scenario or PT evaluation with objective findings, demonstrate the ability to assess the disease process in terms of location, etiology, prognosis, appropriate assessment tests, signs and symptoms, medical and physical therapy treatments/interventions for the following: CVA, SCI, HI, MS, disorders of the basal ganglia, cerebellum, cranial nerves, myopathies, peripheral neuropathies, and degenerative neurological diseases.
3. Describe and/or identify the components and functions of the nervous system to include components of the CNS, PNS, ANS.

4. Demonstrate a basic understanding of neuroanatomy and physiology of neurons and muscles.
5. Demonstrate a basic understanding of GTO's and muscle spindles and their function.
6. Demonstrate ability to perform accurate sensory testing following appropriate guidelines and differentiate between tests for superficial sensation, proprioceptive sensation, and cortical sensation.
7. Identify dermatomes, and peripheral nerve sensory boundaries and demonstrate the ability to assess sensation utilizing these guidelines.
8. Demonstrate the ability to identify and differentiate between the tracts of the spinal cord, their role in function, signs and symptoms associated with a variety of lesions and probable location of lesion.
9. Given a case history, or case based problem, demonstrate knowledge of the brain's blood supply by assessing artery involved, area of brain involved, and probable signs and symptoms associated with a lesion to specific arteries and/or areas of the brain.
10. Differentiate between the types of muscle fibers and nerve fibers.
11. Differentiate between signs and symptoms of UMNL and LMNL.
12. Given a PT evaluation with goals and a POC develop and provide patient and/or family education/recommendations regarding equipment, safety issues as they relate to ADL's, possible barriers in the home, community and work, and discharge recommendations based on findings from neurological assessments within the parameters of the POC.
13. Given a PT evaluation with objective findings, goals and POC and/or by the student performance of ROM, MMT, sensory testing, balance testing, coordination testing, etc, the student will demonstrate knowledge and understanding of the findings to assess probable location of lesion.
14. Demonstrate ability to accurately document assessment findings for sensation, DTR's, balance, coordination, Glasgow Coma Scale, and cranial nerves in a SOAP note format or with utilization of approved assessment forms.
15. Demonstrate understanding of neurological terms and diseases in written format or oral discussions.
16. Demonstrate appropriate verbal and non-verbal communication and clear instructions when instructing patients to perform assessments for sensation, balance, coordination, cognition, MMT, ROM, cranial nerves, DTR's etc.
17. Given a PT evaluation with objective findings or a mock patient with a spinal cord injury and level of lesion, demonstrate ability to assess probable functional status patient may achieve, muscles available for ADL's, appropriate assessment tests which should be performed to include MMT, sensory assessments, and assessment of ADL's.

18. Demonstrate safety awareness during all assessment activities to include providing appropriate level of assistance and utilizing correct guarding techniques as applicable.
19. Demonstrate awareness of signs and symptoms of autonomic dysreflexia and appropriate emergency measures to take.
20. Demonstrate conduct during lab sessions and laboratory practicals that reflects practice standards that are legal, ethical and safe and within the parameters of the PTA practice act.
21. Demonstrate ability to assess a patient's ability to follow and understand instructions.
22. Demonstrate knowledge and utilization of universal precautions during all laboratory procedures.
23. Recognizes when an intervention or assessment is beyond that which is appropriate for a PTA and initiates clarification with the PT.
24. Demonstrate ability to perform assessments for balance, righting and equilibrium reactions.