

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**

COURSE OUTLINE

PHTA 205 -Neuromuscular Pathologies

PREPARED BY: Jennifer McDonald

**SCHOOL OF SCIENCE, HEALTH, AND PROFESSIONAL STUDIES
Physical Therapist Assistant Program
Revised August, 2015**

PHTA 205 -NEUROMUSCULAR PATHOLOGIES

- A. **TITLE:** Neuromuscular Pathologies
- B. **COURSE NUMBER:** PHTA 205
- C. **CREDIT HOURS:** 4
- C. **WRITING INTENSIVE COURSE:** No
- D. **COURSE LENGTH:** 15 weeks
- E. **SEMESTER(S) OFFERED:** Fall
- G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY**
2 lecture, 4 laboratory
- H. **CATALOG DESCRIPTION:**
Fall, 4 credit hours

Neuroanatomy will be presented in preparation for the study of data collection and physical therapy interventions used in treatment of persons with neuromuscular pathologies. Normal motor development and neuropathologies, both central and peripheral, throughout the life span will be discussed and treatment techniques practiced in the lab setting.

- I. **PRE-REQUISITES/CO-COURSES:**
Pre-requisites: All coursework in the first two semesters of the physical therapist assistant curriculum
Co-Requisites: None
- J. **GOALS (STUDENT LEARNING OUTCOMES):** By the end of this course, the student will:

Course Objective	Institutional SLO
1. Apply knowledge of neuroanatomy to understanding of common neurological pathologies.	#3 Prof Comp
2. Apply knowledge of theories of motor control, motor learning, and motor development in working with patients with neurological conditions.	#2 Critical Thinking #3 Prof Comp
3. Demonstrate comprehension of the physiology & manifestations of common neurological pathologies.	#3 Prof Comp
4. Demonstrate competence in performing data collection techniques necessary for management of	#3 Prof Comp

the patient with neurological pathologies.	
5. Demonstrate competence in performing physical therapy interventions, specifically therapeutic exercise, neuromuscular re-education & functional training, for patients with neurological conditions.	#1 Communication #2 Critical Thinking #3 Prof Comp
6. Demonstrate effective communication skills while interacting with surrogate patients with neurological impairments.	#1 Communication #3 Prof Comp #4 Inter/Intra Pers Skills
7. Demonstrate ability to adjust components of treatment as necessary and within the guidelines of the plan of care through case scenario implementation.	#2 Critical Thinking #3 Prof Comp
8. Demonstrate comprehension of the physical therapy plan of care for a patient with a neurological pathology through case scenario implementation.	#2 Critical Thinking #3 Prof Comp
9. Produce clear, accurate documentation utilizing SOAP format following case scenarios.	#1 Communication #3 Prof Comp
10. Recognize individual and cultural differences and respond appropriately through case study implementation.	#1 Communication #3 Prof Comp
11. Demonstrate awareness of changes in status of a patient with a neurological pathology that would warrant stopping or not implementing an intervention.	#2 Critical Thinking #3 Prof Comp
12. Maintain safe working environment & ensure safety of self & others during all interactions.	#3 Prof Comp
13. Provide appropriate education to patients & their family members regarding neurological conditions.	#1 Communication #3 Prof Comp #4 Inter/Intra Pers Skills
14. Provide accurate and appropriate instruction to patients and family members.	#1 Communication #3 Prof Comp #4 Inter/Intra Pers Skills
15. Describe considerations for discharge planning for a patient with a neurological pathology.	#3 Prof Comp
16. Describe the role of the healthcare team in relation to patients with neurological conditions.	#3 Prof Comp
17. Provide accurate billing information related to case study/lab practical mock patients	#3 Prof Comp
18. Utilize current healthcare literature to access information related to neurological pathologies.	#3 Prof Comp

K. TEXTS:

Neurological Interventions for Physical Therapy, 3rd ed, Martin S, Kessler M. St Louis, MO

63146, Saunders Elsevier, 2016.

Physical Rehabilitation: Assessment and Treatment, 6th Ed., O'Sullivan, S.B. and Schmitz, T.J., F.A. Davis, Philadelphia 2014.

L. REFERENCES:

Physical Examination of the Spine and Extremities, Hoppenfeld, S., Appleton - Century - Crofts
Clinical Kinesiology & Anatomy, 5th Ed , Lippert, L., F.A. Davis, Philadelphia, 2011.

The Components of Normal Development During the First Year of Life and Abnormal Development, 1983 Monograph, Lois Bly. NDT Assoc., Inc.

Geriatric Physical Therapy, A Clinical Approach, Lewis, C.B. and Bottomley, J.M., Appleton & Lange

M. EQUIPMENT:

treatment and mat tables, bolsters, wedges, wheelchairs, assistive ambulation devices, stairs, ramps and curb, student computers and software, neurological data collection tools.

N. GRADING METHOD:

Student will be assigned a letter grade based on the college grading system A-F.

O. MEASUREMENT CRITERIA/METHODS:

Written examinations, lab competencies, homework assignments, quizzes, lab practical.

P. DETAILED TOPICAL OUTLINE:

I. Neuroanatomy

- a. Fundamental concepts of the Human Nervous System
- b. Central Nervous system
- c. Peripheral Nervous System

II. Neurological Data Collection

- a. Arousal, mentation, cognition
- b. Balance
- c. Coordination
- d. Motor Function
- e. Sensory Testing
- f. Abnormal Gait

III. Motor Control

IV. Motor Learning

V. Motor Development

- a. Primitive reflexes, protective reactions, equilibrium reactions
- b. Gross Motor Milestones
- c. Fine Motor Milestones

VI. Interventions for the patient with neurological pathology

- a. Proprioceptive Neuromuscular Facilitation
- b. Neurofacilitation and Inhibition Techniques
- c. Sensory stimulation/inhibition techniques

VII. Neuromuscular Pathologies Throughout the Lifespan

- a. Cerebral Palsy
- b. Meningocele
- c. Down Syndrome
- d. Other Genetic Disorders
- e. Traumatic Brain Injury
- f. Stroke
- g. Alzheimer disease
- h. Amyotrophic Lateral Sclerosis
- i. Huntington's Disease
- j. Multiple Sclerosis
- k. Parkinson Disease

VIII. C. Neuropathies & Peripheral Nerve Disorders

- a. Types of nerve injury
- b. Common Peripheral Neuropathies
- c. Infections/Autoimmune diseases affecting the nervous system
- d. Guillan Barre Syndrome
- e. Charcot Marie Tooth Disease

IX. Nonprogressive Disorders of the Spinal Cord

- a. Complete
- b. Incomplete