

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



## MASTER SYLLABUS

PHTA 205 – Neuromuscular Pathologies

**CIP Code: 51.0806**

**Created by: Jennifer McDonald**  
**Updated by: Jennifer McDonald**

**Science, Health, and Criminal Justice**  
**Physical Therapist Assistant**  
**Fall 2026**

A. TITLE: Neuromuscular Pathologies

B. COURSE NUMBER: PHTA 205

C. CREDIT HOURS (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity):

# Credit Hours per Week	4
# Lecture Hours per Week	2
# Lab Hours per Week	4
Other per Week	

D. WRITING INTENSIVE COURSE:

Yes	
No	x

E. GER CATEGORY:

Does course satisfy a GER category(ies)? If so, please select all that apply.

[1-2] Communication	
[3] Diversity: Equity, Inclusion & Social Justice	
[4] Mathematics & Quantitative Reasoning	
[5] Natural Science & Scientific Reasoning	
[6] Humanities	
[7] Social Sciences	
[8] Arts	
[9] US History & Civic Engagement	
[10] World History & Global Awareness	
[11] World Languages	

F. SEMESTER(S) OFFERED:

Fall	x
Spring	
Fall and Spring	

G. COURSE DESCRIPTION: In this course, students study neuroanatomy and relate this knowledge to central and peripheral nervous system conditions. Principles of neurological rehabilitation and management of patients with neurological conditions are discussed and applied. Students learn about normal motor development, theories of motor control and motor learning as applied to the rehabilitation of patients with neuromuscular conditions.

H. PRE-REQUISITES: PHTA 104, BIOL 217, BIOL 218  
CO-REQUISITES: N/A

# I. STUDENT LEARNING OUTCOMES:

Course Student Learning Outcome [SLO]	Program Student Learning Outcome [PSLO]	GER	ISLO & Subsets
1. Apply knowledge of neuroanatomy to understand clinical presentation, medical management, and principles of rehabilitation for central and peripheral neuromuscular pathologies.	PSLO #5 Communicate an understanding of the plan of care developed by the physical therapist to achieve short- and long-term goals and intended outcomes.		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills
2. Appropriately instruct patients with neuromuscular pathologies in rehabilitation techniques based on the physical therapy plan of care.	PSLO #9 Participate in educating and providing patient-related instruction to patients, family members, and caregivers based on the plan of care.		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills
3. Apply concepts of motor control, motor learning, and motor development to rehabilitation.	PSLO #5 Communicate an understanding of the plan of care developed by the physical therapist to achieve short- and long-term goals and intended outcomes.		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills
4. Demonstrate comprehension of the physical therapy plan of care for patients with neuromuscular pathologies through case study implementation.	PSLO #5 Communicate an understanding of the plan of care developed by the physical therapist to achieve short- and long-term goals and intended outcomes.		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills
5. Demonstrate awareness of changes in patient status when working with a patient with a neurological pathology and make appropriate decisions using the Problem-Solving Algorithm for the PTA.	PSLO #8 Demonstrate sound clinical problem solving in the provision of physical therapy services		ISLO 2 Critical Thinking Problem Solving [PS]

6. Demonstrate competence in performing physical therapy interventions related to rehabilitation of the patient with a neuromuscular pathology.	PSLO #6 Demonstrate competence in implementing and adjusting selected components of interventions identified in the plan of care established by the physical therapist.		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills
7. Demonstrate effective communication skills while acting as a student PTA during lab competencies & practicals.	PSLO #1 Communicate verbally and non-verbally with the patient, the physical therapist, health care delivery personnel, and others in an effective, appropriate, and capable manner.		ISLO 1 Communication Skills Oral [O]
8. Produce clear, accurate, concise, timely, and legible documentation	PSLO #10 Complete accurate and timely documentation in accordance with regulatory guidelines to support the delivery of physical therapy services.		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills
9. Demonstrate competence in performing data collection techniques necessary for management of patients with neuromuscular pathologies.	PSLO #7 Demonstrate competency in performing components of data collection skills essential for carrying out the plan of care.		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills

10. Demonstrate the ability to adjust components of treatment as necessary within the guidelines of the plan of care through case scenario implementation.	PSLO #6 Demonstrate competence in implementing and adjusting selected components of interventions identified in the plan of care established by the physical therapist.		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills
11. Maintain a safe working environment & ensure safety of patient and self during all interactions.	PSLO #4 Demonstrate safe practice in all situations		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills
12. Describe considerations for discharge planning for a patient with a neuromuscular pathology.	PSLO #5 Communicate an understanding of the plan of care developed by the physical therapist to achieve short- and long-term goals and intended outcomes.		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills
13. Describe effective interaction with members of the interprofessional team when working with patients with neuromuscular pathologies.	PSLO #12 Participate in activities that contribute to the effective function of the healthcare environment		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills
14. Provide accurate billing following case scenario implementation.	PSLO #13 Participate in practice management functions within a physical therapy service, including billing and organizational planning.		ISLO 5 Industry, Professional, Discipline Specific Knowledge and Skills

KEY	<u>Institutional Student Learning Outcomes</u> <u>[ISLO 1 – 5]</u>
ISLO #	ISLO & Subsets
1	<b>Communication Skills</b> Oral [O], Written [W]
2	<b>Critical Thinking</b> <i>Critical Analysis [CA], Inquiry &amp; Analysis [IA], Problem Solving [PS]</i>
3	<b>Foundational Skills</b> <i>Information Management [IM], Quantitative Lit./Reasoning [QTR]</i>
4	<b>Social Responsibility</b> <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i>
5	<b>Industry, Professional, Discipline Specific Knowledge and Skills</b>

J. APPLIED LEARNING COMPONENT:

Yes	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>

If yes, select [X] one or more of the following categories:

Classroom / Lab	<input checked="" type="checkbox"/>	Community Service	<input type="checkbox"/>
Internship	<input type="checkbox"/>	Civic Engagement	<input type="checkbox"/>
Clinical Practicum	<input type="checkbox"/>	Creative Works/Senior Project	<input type="checkbox"/>
Practicum	<input type="checkbox"/>	Research	<input type="checkbox"/>
Service Learning	<input type="checkbox"/>	Entrepreneurship [program, class, project]	<input type="checkbox"/>

K. TEXTS: O'Sullivan & Schmitz's Physical Rehabilitation, 8th Ed., Fulk G, Chui K, F.A. Davis, 2024

L. REFERENCES:

Neurological Interventions for Physical Therapy, 4th ed, Martin S, Kessler M., Saunders Elsevier, 2020.

Clinical Kinesiology& Anatomy, 7th Ed, Lippert, L., F.A. Davis, 2022.

Therapeutic Exercise: Foundations & Techniques, Kisner, C., Colby, L., Borstad, J, 8th ed. FA Davis, 2023

M. EQUIPMENT: Physical Therapy Lab Equipment & Supplies

N. GRADING METHOD: A-F as per PTA program standards

The grading scale for the Physical Therapist Assistant program is as follows:

A	= 90-100	C	= 70-74
B+	= 85-89	D+	= 65-69
B	= 80-84	D	= 60-64
C+	= 75-79	F	= below 60

To meet PTA program requirements, PTA students are required to achieve a grade of C+ or higher in this course.

O. SUGGESTED MEASUREMENT CRITERIA/METHODS: Quizzes, Assignments, Lab Competencies, Unit Exams, Final Exam, Lab Practical

P. DETAILED COURSE OUTLINE:

- I. Neuroanatomy
  - a. Central Nervous system
  - b. Peripheral Nervous System
- II. Neurological Data Collection
  - a. Arousal, mentation, cognition
  - b. Balance
  - c. Coordination
  - d. Motor Function
  - e. Sensory Testing
- III. Motor Control & Motor Learning
- IV. Motor Development
  - a. Gross Motor Milestones
  - b. Fine Motor Milestones
- V. Improving Motor & Sensory Function
  - a. Facilitation & Inhibition Strategies
  - b. Functional Outcome Measures
  - c. PNF patterns & techniques
  - d. Biofeedback
- VI. Neuromuscular Pathologies Throughout the Lifespan
  - a. Peripheral nerve disorders
  - b. Spinal cord injury
  - c. Stroke
  - d. Brain Injury
  - e. Multiple Sclerosis
  - f. Parkinson Disease
  - g. Amyotrophic Lateral Sclerosis
  - h. Genetic & Developmental Disorders
  - i. Other Neurological conditions
- VII. Balance & Vestibular System

Q. LABORATORY OUTLINE:

- I. Neurological Data Collection Techniques
- II. Improving Motor & Sensory Function
  - a. Facilitation & Inhibition Strategies
  - b. Functional Outcome Measures
  - c. PNF
- III. Motor Development
- IV. Interventions for persons with Neurological Pathologies
  - a. Peripheral nerve disorders
  - b. Spinal cord injury
  - c. Stroke
  - d. Brain Injury
  - e. Multiple Sclerosis
  - f. Parkinson Disease
  - g. Amyotrophic Lateral Sclerosis
  - h. Other Neurological conditions
  - i. Genetic & Developmental Disorders