

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

**COURSE OUTLINE**

**PHTA 206 - Advanced Physical Therapy Modalities**

**PREPARED BY: Deborah S. Molnar**

**SCHOOL OF SCIENCE, HEALTH, AND CRIMINAL JUSTICE  
Physical Therapist Assistant Program  
Revised May 2015**

**PHTA 205 - Advanced Physical Therapy Modalities**

- A. TITLE: Advanced Physical Therapy Modalities
- B. COURSE NUMBER: PHTA 206
- C. CREDIT HOURS: 2 credit hours
- D. WRITING INTENSIVE COURSE : No
- E. COURSE LENGTH: 15 weeks
- F. SEMESTER(S) OFFERED: Fall semester
- G. HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:  
1 hour lecture, 3 hours lab per week
- H. CATALOG DESCRIPTION:  
Fall, 2 credit hours  
Students will learn basic principles of electricity and electrotherapy. Application of electrotherapeutic agents for pain control, neuromuscular stimulation, and tissue/wound healing will be studied and applied. Students will be introduced to spinal traction as a therapeutic modality. Students will enhance their research skills by reviewing and critiquing current professional literature related to various course topics. 1 hour lecture, 3 hours lab per week
- I. PRE-REQUISITES/CO-COURSES:  
Pre-requisites: All first year PTA curriculum.  
Co-requisites: PHTA 203, 204, & 205
- J. GOALS (STUDENT LEARNING OUTCOMES): By the end of this course, the student will:

<i>Course Objective</i>	<i>Institutional SLO</i>
1. Demonstrate safe and effective implementation of the following electrotherapeutic agents: a. TENS b. High Volt Stimulation/combo c. Interferential Stimulation d. Iontophoresis e. Neuromuscular Electrical Stimulation	#3 Prof Comp
2. Demonstrate safe and effective application of mechanical spinal traction;	#3 Prof Comp
3. Demonstrate safe and effective application of electromyographic biofeedback;	#3 Prof Comp
6. Discuss the principles of implementation, treatment rationale, safety considerations, and anticipated patient responses associated with items #3,4, and 5 above;	#2 Critical Thinking #3 Prof Comp
7. Communicate verbally and non-verbally with the patient and others in an effective, appropriate, and capable manner during lab competencies, lab practical, and case scenario implementation	#1 Communication #3 Prof Comp #4 Inter/Intra Pers

	Skills
8. Demonstrate competency in performing components of data collection skills as part of the electrical stimulation or traction intervention, including: a. recognize absent or altered sensation b. recognize normal and abnormal integumentary changes c. recognize normal and abnormal joint movement d. administer standardized questionnaires or scales for pain e. recognize activities, positioning, postures that aggravate or relieve pain f. recognize changes in patient's state of arousal, mentation, cognition g. recognize changes in muscle tone h. recognizes alignment of trunk and extremities at rest or during activity	#3 Prof Comp
9. Complete thorough, accurate, concise, timely, and legible documentation;	#1 Communication #3 Prof Comp
10. Synthesize information from 4 different research articles to make a determination of effectiveness of select electrotherapy modalities.	#1 Communication #2 Critical Thinking #3 Prof Comp #4 Inter/Intra Pers Skills
11. Demonstrate effective education to patients and caregivers regarding the use of modalities or traction related to their condition;	#1 Communication #3 Prof Comp #4 Inter/Intra Pers Skills
12. Maintain safe working environment and assure safety of patient and self during all interactions.	#3 Prof Comp
13. Demonstrate comprehension of the physical therapy plan of care through case scenario implementation.	#2 Critical Thinking #3 Prof Comp
14. Make appropriate adjustments to the administration of modalities within the plan of care to maximize expected response to treatment and report verbally or in documentation to physical therapist.	#2 Critical Thinking #3 Prof Comp
15. Recognize when a modality should not be administered due to changes in patient status and communicate to physical therapist.	#2 Critical Thinking #3 Prof Comp
16. Demonstrate ability to submit accurate charge sheets following case scenario implementation.	#1 Communication #3 Prof Comp

K. TEXTS:

Michlovitz, S.L., Bellew J.W., Nolan, T.P. (2012) *Modalities for Therapeutic Intervention*, Philadelphia: F.A. Davis Company.

K. REFERENCES:

Cameron, MH (1999) *Physical Agents in Rehabilitation*, Philadelphia: WB Saunders Co.  
 Hayes, K.W. (2012) *Manual for Physical Agents*, Norwalk: Appleton & Lange.  
 Behrens, BJ (2006) *Physical Agents, Theory and Practice for the PTA*

L. EQUIPMENT:  
Electrotherapeutic agents; mechanical traction units; treatment tables; other basic PT lab equipment

M. GRADING METHOD :  
Students are required to earn a 75% or better in both the lecture and laboratory components of all professional courses to satisfactorily complete the course.

Conversion of a number grade to a letter grade is as follows:

A	=	90-100
B+	=	86-89
B	=	80-85
C+	=	75-79
C	=	70-74
D+	=	65-69
D	=	60-64
F	=	below 60

N. MEASUREMENT CRITERIA/METHODS:  
Written examinations, quizzes, lab competency checks, lab practical, literature reviews, homework assignments.

O. DETAILED COURSE OUTLINE:

- I. Principles of Electricity
  - A. Properties of Electricity
  - B. Types of Current
  
- II. Principles of Electrotherapy
  - C. Indications and Contraindications
  - D. Parameters
  - E. Physiologic Basis
  
- III. Principles of Pain Control
  - F. Pain Scales/Questionnaires
  - G. Perception of Pain
  - H. Gate Control Theory
  
- IV. TENS
  - I. Conventional
  - J. Burst
  - K. Modulated
  
- V. Interferential Stimulation
  - L. Theory
  - M. Modes
  - N. Options

- VI. NMES
  - O. Specific Parameters
  - P. Treatment Implications
  
- VII. High Volt Stimulation
  - Q. Characteristics
  - R. Versatility
  
- VIII. Combination Stimulation
  
- IX. Iontophoresis
  - S. Physiology
  - T. Medicinal Ions
  
- X. EMG Biofeedback
  - U. Theory
  - V. Motor Learning
  - W. Relaxation
  
- XI. Spinal Traction
  - A. Indications/Contraindications
  - B. Cervical Traction
  - C. Pelvic Traction

P. LABORATORY OUTLINE:

- I. Electrical Safety
  - A. Safety Inspection of Equipment
  - B. Introduction to Electrical Stimulation Devices
  
- II. Preparation
  - A. Patient Preparation
    - 1. Positioning and Draping
    - 2. Sensory Assessment
    - 3. Skin Preparation
    - 4. Patient Education
    - 5. Machine Positioning
  - B. Electrical Preparation
    - 1. Selection
    - 2. Preparation and Securing
    - 3. Size and Spacing
  
- III. Transcutaneous Electrical Stimulation
  - A. Conventional
  - B. Burst
  - C. Modulated
  - D. Patient Equipment Check Out

- IV. Interferential Stimulation
- V. Neuromuscular Electrical Stimulation
  - A. Strengthening Protocol
  - B. Re-education Protocol
  - C. Edema Protocols
- VI. High Volt Stimulation
  - A. Wound Healing
  - B. Edema Control
  - C. Muscle Spasm/Pain
- VII. Combination Stimulation
  - A. Trigger Point
  - B. Muscle Spasm Re-education
- VIII. Iontophoresis
- IX. EMG Biofeedback
  - A. Muscle Performance
  - B. Relaxation
- X. Spinal Traction
  - A. Cervical Traction
    - 1. Seated
    - 2. Supine
  - B. Pelvic Traction
    - 1. Supine
    - 2. Prone