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

COURSE OUTLINE

PHTA 103 - Musculoskeletal Pathologies

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

PHTA 103 - Musculoskeletal Pathologies

A. TITLE: Musculoskeletal Pathologies

B. COURSE NUMBER: PHTA 103

C. **CREDIT HOURS:** 4

D. WRITING INTENSIVE COURSE : No

E. COURSE LENGTH: 15 weeks

F. SEMESTER(S) OFFERED: Spring semester

G. HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:
3 hours lecture, 3 hours lab per week

H. CATALOG DESCRIPTION:
Spring, 4 credit hours
Principles and techniques of therapeutic exercise and soft tissue mobilization are presented and related to specific musculoskeletal pathologies across the life span. Students will learn their role in assisting the physical therapist with management of an orthopedic based patient population in relation to the stages of tissue healing. The student will learn to apply a variety of exercise techniques when given the physical therapy plan of care and goals/expected outcomes. There will be a focus on educating the patient and/or care giver throughout the course. Students will also begin to read and understand professional literature. 3 hours lecture, 3 hours lab per week.

I. PRE-REQUISITES/CO-REQUISITES:
Pre-requisites: All first semester PTA curriculum
Co-requisites: None

J. **GOALS (STUDENT LEARNING OUTCOMES):** By the end of this course, the student will:

Course Objective	*Institutional SLO*
1. Identify stages of tissue healing and general rehabilitation guidelines for each stage.	#3 Prof Comp
2. Describe mechanism of injury, clinical presentation, medical management, and rehabilitation of common musculoskeletal pathologies of the: a. Lower extremity b. Upper extremity c. Spine	#3 Prof Comp
3. Demonstrate comprehension of the physical therapy plan of care through case scenario implementation for patients with musculoskeletal pathology.	#2 Critical Thinking #3 Prof Comp
4. Recognize characteristics and rehabilitation	#3 Prof Comp

management of osteoarthritis, rheumatoid arthritis, and osteoporosis.	
5. Appropriately adjust therapeutic exercise according to patient verbal or non-verbal response during musculoskeletal case scenario implementation.	#2 Critical Thinking #3 Prof Comp
6. Produce accurate, technically correct, and legible documentation related to a musculoskeletal rehabilitation session.	#1 Communication #3 Prof Comp
7. Demonstrate ability to answer surrogate patient questions related to therapeutic exercise and/or their musculoskeletal pathology.	#1 Communication #3 Prof Comp #4 Inter/Intra Pers Skills
8. Recognize changes in the patient's status and reports this verbally or in documentation to physical therapist during/following case scenario implementation.	#1 Communication #2 Critical Thinking #3 Prof Comp #4 Inter/Intra Pers Skills
9. Create appropriate home exercise programs based on the physical therapy plan of care for the patient with musculoskeletal pathology.	#1 Communication #3 Prof Comp
10. Demonstrate effective communication skills while acting as a student PTA during lab competencies and practicals.	#1 Communication #3 Prof Comp #4 Inter/Intra Pers Skills
11. Recognize when consultation with the physical therapist is necessary prior to providing intervention due to changes in the patient's status	#1 Communication #2 Critical Thinking #3 Prof Comp #4 Inter/Intra Pers Skills
12. Provide appropriate therapeutic exercise instruction to surrogate patient/caregiver in relation to their musculoskeletal pathology.	#1 Communication #3 Prof Comp #4 Inter/Intra Pers Skills
13. Summarize a musculoskeletal based research report and present information to classmates.	#3 Prof Comp
14. Demonstrate competency in performing select physical therapy interventions related to rehabilitation of the patient with musculoskeletal pathology, including: a. Functional Training b. Manual Therapy Techniques c. Therapeutic Exercise	#3 Prof Comp
15. Demonstrate competency in performing data collection techniques necessary for management of the patient with musculoskeletal pathology, during case scenario implementation.	#3 Prof Comp
16. Maintain safety of patient/self in all situations.	#3 Prof Comp

K. TEXTS:

Shankman, G.A. & Manske R.C., (2011) *Fundamental Orthopedic Management for the Physical Therapist Assistant*, St Louis: Mosby.

Kisner and Colby (2012) *Therapeutic Exercise: Foundations and Techniques,* Philadelphia: F.A. Davis.

L. REFERENCES:

Therapeutic Exercise for Physical Therapist Assistants: Techniques for Intervention, Bandy, W. and Sanders, B., Lipincott, Williams & Wilkins, Philadelphia, 2013.
Orthopaedics for the Physical Therapist Assistant, Dutton, M., Jones & Bartlett, Sudbury, MA, 2012.
Healing Massage Techniques, Tappan, F.M, Prentice Hall, East Norwalk, CT, 1988.
Evidence-Based Therapeutic Massage: A practical guide for therapists, Holey, E. and Cook, E., Elsevier Science, Philadelphia, PA, 2003.
Beard's Massage, De Domenicao, G. and Wood, E.C., WB Saunders, Philadelphia, PA, 1997.

M. EQUIPMENT:

treatment tables, all exercise equipment in PTA lab and Fitness Center

N. GRADING METHOD (P/F, A-F, etc.)**:**

Students will be assigned a letter grade based on the college grading system A-F
Students must obtain a 75% in both the lecture and laboratory component of the course to pass the course.
Conversion of a number grade to a letter grade is as follows:

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

O. MEASUREMENT CRITERIA/METHODS:

Written examinations, lab competencies, lab practicals, quizzes/homework, literature review

P. DETAILED COURSE OUTLINE:

I. Fundamentals of Therapeutic Exercise
- A. Introduction
- B. Endurance
- C. ROM/Flexibility
    1. Range of motion
        a. Passive range of motion
        b. Active assistive range of motion
        c. Active range of motion
    2. Stretching
        a. Manual passive stretching
        b. Mechanical passive stretching
        c. Active inhibition
        d. Self-stretching

3. Joint mobilization

D. Muscle Performance
    1. Manual vs mechanical
    2. Resistance Exercise
        a. Isometric
        b. Isotonic
        c. Isokinetic

E. Balance/Coordination

F. Relaxation

II. Tissue Healing/Repair

A. Acute inflammatory

B. Proliferative

C. Remodeling

D. General rehab considerations
    1. Ligaments
    2. Bone
    3. Tendons
    4. Muscle

III. Soft Tissue Mobilization

A. General massage techniques

B. Orthopedic based soft tissue techniques

IV. Hip/Pelvis Pathology

A. Fractures

B. Total Hip Replacement

C. Bursitis

D. Muscular Strains

V. Knee Pathology

A. Ligamentous Injury

B. Meniscus Injury

C. Total Knee Replacement

D. Fractures

E. Patellofemoral Syndrome

F. Contusions

VI. Ankle/Foot Pathology

A. Tendinitis/Fascitis

B. Sprains/Instabilities

C. Fractures

VII. Shoulder Pathology

A. Impingements/Tendonitis

B. Instabilities/Separations

C. Adhesive Capsulitis

D. Fractures

E. Total Shoulder Replacement

F. Complex Regional Pain Syndrome

VIII. Elbow Pathology
- A. Tendinitis
- B. Fractures

IX. Wrist/Hand Pathology
- A. Tendinitis
- B. Carpal Tunnel Syndrome
- C. Fractures

X. Arthritis/Osteoporosis/Fibromyalgia
- A. Osteoarthritis/Rheumatoid Arthritis
- B. Osteoporosis
- C. Fibromyalgia/Systemic Lupus Erythematosus

XI. Spinal Pathology
- A. Ligament and Muscle Injury
- B. Fractures/Instability
- C. Disc Protrusion/Herniation
- D. Spinal Stenosis
- E. Scoliosis
- F. SI Joint Dysfunction

Q. LABORATORY OUTLINE:

I. Introduction

II. Endurance
- A. Cardiovascular Equipment
- B. Aerobic Exercise Programs

III. Soft Tissue Techniques
- A. Effleurage
- B. Pettrisage
- C. Deep Friction Massage
- D. Ischemic Compression

IV. Hip/Pelvis
- A. ROM/Flexibility
  1. PROM/AAROM/AROM
  2. Self-Assisted ROM
  3. Manual Stretching
  4. Self-Stretching
- B. Strengthening
  1. Manual Resistance
  2. Mechanical Resistance and Muscle Setting
  3. Closed Chain Exercises

V. Knee
- A. ROM/Flexibility
  1. PROM/AAROM/AROM
  2. Self-Assisted ROM
  3. Manual Stretching
  4. Active Inhibition Techniques
  5. Self-Stretching
  6. CPM
- B. Strengthening
  1. Manual Resistance
  2. Mechanical Resistance and Muscle Setting
  3. Closed Chain Exercises
  4. Plyometrics

VI. Ankle/Foot
- A. ROM/Flexibility
  1. PROM/AAROM/AROM
  2. Self-Assisted ROM
  3. Manual Stretching
  4. Self-Stretching
- B. Strengthening
  1. Manual Resistance
  2. Mechanical Resistance
  3. Closed Chain Exercises

VII. Shoulder
- A. ROM/Flexibility
  1. PROM/AAROM/AROM
  2. Self-Assisted ROM
  3. Assisted ROM Exercises
  4. Manual Stretching
  5. Active Inhibition Techniques
  6. Pendulum Exercise
  7. Self-Mobilizations
  8. Self-Stretching
- B. Strengthening
  1. Manual Resistance
  2. Self-Assisted Isometrics
  3. Mechanical Resistance
  4. Closed Chain Exercises
  5. Plyometrics

VIII. Elbow
- A. ROM/Flexibility
  1. PROM/AAROM/AROM
  2. Self-Assisted ROM

3. Manual Stretching
4. Active Inhibition Techniques
5. Self-Stretching

B. Strengthening
1. Manual Resistance
2. Mechanical Resistance

IX. Wrist/Hand
A. ROM/Flexibility
1. PROM/AAROM/AROM
2. Self-Assisted ROM
3. Manual Stretching
4. Self-Stretching

B. Strengthening
1. Manual Resistance
2. Mechanical Resistance

X. Spine
A. Cervical Spine
1. ROM/Flexibility
a. PROM/AAROM/AROM
b. Stretching
2. Strengthening/Stabilization
a. Axial Extension
b. Cervical Flexors
c. Manual Resistance
d. Self-Resisted Isometrics

B. Thoraco-lumbar spine
1. ROM/Flexibility
a. Stretching
2. Strengthening
a. Stabilization Exercises
b. Abdominals
c. Back Extensors
3. Postural Awareness/Body Mechanics/Prevention
4. Ergonomics