

# COURSE SYLLABUS

<b>LAST REVIEW</b>	Spring 2021
<b>COURSE TITLE</b>	Musculoskeletal: Lower Extremity
<b>COURSE NUMBER</b>	PHTR 0160
<b>DIVISION</b>	Health Professions
<b>DEPARTMENT</b>	Physical Therapist Assistant
<b>CIP CODE</b>	51.0806
<b>CREDIT HOURS</b>	5
<b>CONTACT HOURS/WEEK</b>	Class: 2.5                      Lab: 5
<b>PREREQUISITES</b>	None
<b>COURSE PLACEMENT</b>	This course is part of a selective admission program. Students must be admitted to the Physical Therapist Assistant program to enroll in this course.

## COURSE DESCRIPTION

This course provides a link between the principles of biomechanics, musculoskeletal anatomy and neuromuscular physiology in its application to movement analysis for the lower extremity (LE). This course also covers the role of the physical therapist assistant in the management of common musculoskeletal disorders of the lower extremity. The student will learn the theoretical foundation for various assessments and intervention strategies.

## PROGRAM ALIGNMENT

This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit:

[https://kansasregents.org/workforce\\_development/program-alignment](https://kansasregents.org/workforce_development/program-alignment)

## PROGRAM LEARNING OUTCOMES

1. Demonstrate competence in safely administering all tests and measures and interventions as outlined in the plan of care established by the physical therapist.
2. Communicate appropriately, both verbally and non-verbally, with patient/clients, families, physical therapy personnel and other healthcare team members.
3. Adhere to the legal, ethical and professional behavior guidelines established by the American Physical Therapist Association (APTA), the state licensure committee, and the facility of employment.
4. Utilize data collection, problem solving and critical thinking skills to identify the appropriateness of requested interventions.
5. Provide education to the patient/client, family members, physical therapy personnel, other healthcare team members and the community.

6. Identify cultural differences and their impact on the provision of physical therapy services.
7. Be involved in activities that promote life-long learning.
8. Participate in activities that promote the practice of physical therapy and the role of the physical therapist assistant (PTA).
9. Assist facility administration with outcome measurements, material management, reimbursement issues and other administrative roles deemed appropriate for the PTA.

## **TEXTBOOKS**

<http://kckccbookstore.com/>

## **METHODS OF INSTRUCTION**

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

## **COURSE OUTLINE**

- I. Biomechanics
  - A. Forces
  - B. Free body diagrams
  - C. Lever systems
  
- II. Connective Tissue
  - A. Types of connective tissue
  - B. Structure of connective tissue
  - C. Stages of healing
  - D. Effects of immobilization
  
- III. Articular System
  - A. Fibrous joints
  - B. Cartilaginous joints
  - C. Synovial joints
  - D. Joint innervation
  
- IV. Peripheral Nervous System
  - A. Nerve injury classifications
  - B. Peripheral nerve distributions
  - C. Dermatomes and myotomes

## V. Muscular System

- A. Length-tension relationship
- B. Specialized muscle receptors
- C. Stages of healing
- D. Effects of immobilization

## VI. Tests and Measures

- A. Range of motion
- B. Manual muscle testing
- C. Sensory testing
- D. Muscle length tests

## VII. Pelvis, Hip & Thigh

- A. Anatomy
- B. Pathology
- C. Orthopedic tests
- D. Physical therapy tests and measures
- E. Physical therapy interventions
  - i. Exercise
  - ii. Modalities
  - iii. Patient education
  - iv. Other

## VIII. Distal Lower Extremity

- A. Anatomy
- B. Pathology
- C. Orthopedic tests
- D. Physical therapy tests and measures
- E. Physical therapy interventions
  - i. Exercise
  - ii. Modalities
  - iii. Patient education
  - iv. Other

## IX. Reading Professional Literature

### **COURSE LEARNING OUTCOMES AND COMPETENCIES**

Upon successful completion of this course, the student will:

- A. Relate the concepts of physics and lever systems to the musculoskeletal system.
  - 1. Utilize free body diagrams to illustrate the forces related to human movement.
  - 2. Apply the concepts of lever systems to physical therapy clinical scenarios.
- B. Describe the musculoskeletal anatomy of the lower extremity (LE).

3. Identify bony landmarks throughout the lower extremity.
  4. Identify the origin, insertion, action and innervations of LE muscles.
  5. Recognize how different variables affect muscle strength.
  6. Analyze how anatomical structures affect joint mobility and stability.
  7. Differentiate normal from abnormal LE joint structure and mechanics.
- C. Discuss the effects of injury and immobility on LE musculoskeletal tissues.
8. List common mechanisms of injury for various LE musculoskeletal disorders.
  9. Identify the specific tissues involved in various LE musculoskeletal disorders.
  10. Describe various fracture classifications.
  11. Differentiate expected from unexpected signs, symptoms and functional deficits for various LE musculoskeletal disorders.
  12. Describe the effects of immobilization on various musculoskeletal tissues.
- D. Perform various physical therapy tests and measures of the LE.
13. Perform range of motion testing for joints throughout the LE.
  14. Perform manual muscle testing for muscles throughout the LE.
  15. Modify testing procedures in response to substitution patterns.
  16. Perform anthropometric measurements appropriate for assessing the LE.
  17. Judge when changes in the patient's status should be reported to the supervising physical therapist.
  18. Accurately document the results of various tests and measures.
- E. Perform physical therapy interventions used in the treatment of LE musculoskeletal disorders.
19. Implement exercise programs that follow the plan of care for various LE musculoskeletal disorders.
  20. Identify common medical and physical therapy interventions for various LE musculoskeletal disorders.
  21. Demonstrate joint mobilization techniques for LE joints that are consistent with the plan of care.
  22. Provide appropriate patient education based upon the needs of the patient.
  23. Assess the appropriateness of physical therapy interventions based on the type of musculoskeletal disorder and the stage of healing.
  24. Respond to an individual patient's needs by adjusting interventions within the plan of care created by the physical therapist.
  25. Discuss the need for changes to the plan of care with the supervising physical therapist.
  26. Accurately document physical therapy interventions.
- F. Appraise the value of physical therapy research articles.
27. Compare and contrast different research methods.
  28. Evaluate an article's validity based upon the level of experimental control.
  29. Create a written and verbal summary of a research article.



- G. Demonstrate appropriate interpersonal skills when interacting with others.
30. Behave in a manner that demonstrates professional behavior that meets the expectations of members of the physical therapy profession.
  31. Demonstrate professional behavior in alignment with the APTA's Values-Based Behaviors for the PTA.
  32. Display the value of communication by interacting appropriately both verbally and nonverbally during laboratory practicals.
  33. Display concern for patient comfort by using appropriate positioning and handling techniques during laboratory practicals.

### **ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES**

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

### **COLLEGE POLICIES AND PROCEDURES**

*Student Handbook*

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

*College Catalog*

<https://www.kckcc.edu/academics/catalog/index.html>

*College Policies and Statements*

<https://www.kckcc.edu/about/policies-statements/index.html>

*Accessibility and Accommodations*

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.