DATE OF LAST REVIEW: Fall 2013
CIP CODE: 51.0806
SEMESTER: Departmental Syllabus
COURSE TITLE: Musculoskeletal: Lower Extremity
COURSE NUMBER: PHTR 0160/1160
CREDIT HOURS: 5
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
OFFICE HOURS: Departmental Syllabus
TELEPHONE: Departmental Syllabus
E-MAIL: Departmental Syllabus

KCKCC-issued email accounts are the official means for electronically communicating with our students.

PREREQUISITES: Fundamental Treatment Procedures

REQUIRED TEXT AND MATERIALS:
Please check with the KCKCC bookstore, http://www.kckccbookstore.com/, for the required texts for your particular class.

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.

METHOD 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, and panels, conferencing, learning experiences, and performances 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. Gait Deviations  
   A. Types of gait deviations  
   B. Causes of gait deviations  
   C. Lower extremity orthotic devices

X. Reading Professional Literature  
   A. Terminology  
   B. Evaluating literature

EXPECTED LEARNER OUTCOMES:  
Upon successful completion of the course, on written and/or practical examination:  
A. The student will relate the concepts of physics and lever systems to the musculoskeletal system.  
B. The student will describe the musculoskeletal anatomy of the lower extremity (LE).  
C. The student will discuss the effects of injury and immobility on LE musculoskeletal tissues.  
D. The student will perform various physical therapy tests and measures of the LE.  
E. The student will perform physical therapy interventions used in the treatment of LE musculoskeletal disorders.  
F. The student will explain the various gait abnormalities that can exist with dysfunction of the musculoskeletal system.  
G. The student will be able to appraise the value of physical therapy research articles.  
H. The student will demonstrate appropriate interpersonal skills when interacting with others.

COURSE COMPETENCIES:  
The student will relate the concepts of physics and lever systems to the musculoskeletal system.  
1. The student will utilize free body diagrams to illustrate the forces related to human movement.  
2. The student will apply the concepts of lever systems to physical therapy clinical scenarios.

The student will describe the musculoskeletal anatomy of the lower extremity (LE).  
3. The student will identify bony landmarks throughout the lower extremity.  
4. The student will identify the origin, insertion, action and innervations of LE muscles.  
5. The student will recognize how different variables affect muscle strength.  
6. The student will analyze how anatomical structures affect joint mobility and stability.  
7. The student will differentiate normal from abnormal LE joint structure and mechanics.

The student will discuss the effects of injury and immobility on LE musculoskeletal tissues.  
8. The student will list common mechanisms of injury for various LE musculoskeletal disorders.  
9. The student will identify the specific tissues involved in various LE musculoskeletal disorders.  
10. The student will describe various fracture classifications.  
11. The student will differentiate expected from unexpected signs, symptoms and functional deficits for various LE musculoskeletal disorders.  
12. The student will describe the effects of immobilization on various musculoskeletal tissues.  

The student will perform various physical therapy tests and measures of the LE.  
13. The student will perform range of motion testing for joints throughout the LE.  
14. The student will perform manual muscle testing for muscles throughout the LE.  
15. The student will modify testing procedures in response to substitution patterns.
16. The student will perform anthropometric measurements appropriate for assessing the LE.
17. The student will judge when changes in the patient’s status should be reported to the supervising physical therapist.
18. The student will accurately document the results of various tests and measures.

The student will perform physical therapy interventions used in the treatment of LE musculoskeletal disorders.
19. The student will implement exercise programs that follow the plan of care for various LE musculoskeletal disorders.
20. The student will identify common medical and physical therapy interventions for various LE musculoskeletal disorders.
21. The student will provide appropriate patient education based upon the needs of the patient.
22. The student will assess the appropriateness of physical therapy interventions based on the type of musculoskeletal disorder and the stage of healing.
23. The student will respond to an individual patient’s needs by adjusting interventions within the plan of care created by the physical therapist.
24. The student will discuss the need for changes to the plan of care with the supervising physical therapist.
25. The student will accurately document physical therapy interventions.

The student will explain the various gait abnormalities that can exist with dysfunction of the musculoskeletal system.
26. The student will identify various gait deviations for patients with musculoskeletal impairments.
27. The student will examine the relationship between gait deviations and common causes.
28. The student will identify various LE orthotic devices and their purpose.
29. The student will discuss proper care for and safety with use of orthotic devices.

The student will be able to appraise the value of physical therapy research articles.
30. The student will compare and contrast different research methods.
31. The student will evaluate an article’s validity based upon the level of experimental control.
32. The student will create a written and verbal summary of a research article.

The student will demonstrate appropriate interpersonal skills when interacting with others.
33. The student will behave in a manner that demonstrates professional behavior that meets the expectations of members of the physical therapy profession.
34. The student will demonstrate professional behavior that reflects practice standards that are legal, ethical and safe.
35. The student will display the value of communication by interacting appropriately both verbally and nonverbally during laboratory practicals.
36. The student will display concern for patient comfort by using appropriate positioning and handling techniques during laboratory practicals.

ASSESSMENT OF LEARNER OUTCOMES
Assessment methods include, but may not be limited to: written examinations, lab practicals, homework, and observation of professional behavior.

SPECIAL NOTES:
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.
Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Director of the Academic Resource Center, in Rm. 3354 or call at: 288-7670.