

NVCC COLLEGE-WIDE COURSE CONTENT SUMMARY

PTH 115 - KINESIOLOGY FOR THE PHYSICAL THERAPIST ASSISTANT (5 CR.)

COURSE DESCRIPTION

Focuses on the relationship of specific joint structure and function, and the role of individual muscles and groups of muscles in both normal and pathological movement. The course includes a review of basic physics and biomechanical principles applied to human movement. Specific manual muscle testing, posture and gait analysis are also included. Lecture 2 hours. Laboratory 4 hours. Total 6 hours per week.

GENERAL COURSE PURPOSE

This course is designed to provide the student with basic physics principles which govern dynamic systems and detailed information regarding joint structure and function, individual muscles and muscle functions so that he/she is able to interpret human movement performance and appraise performance as normal or dysfunctional. Patient examination methods, e.g., manual muscle testing and special tests are included.

ENTRY LEVEL COMPETENCIES

Prerequisites for this course are BIO 141-142 - "Human Anatomy and Physiology I-II", or the equivalent and PTH 151 - "Musculoskeletal Structure and Function".

COURSE OBJECTIVES

Upon completion of this course, the student should be able to:

- A. describe normal muscle and joint function as they relate to human performance in activities of daily living and therapeutic exercise
- B. differentiate abnormal muscle function and joint motion in pathological conditions and compare it to normal performance
- C. identify basic biomechanical principles of normal human movement
- D. explain the principles and forces involved in posture and gait
- E. analyze posture and gait in both normal and pathological conditions
- F. measure the strength of selected muscles by demonstrating accurate testing methods
- G. perform selected special tests, rate and record the results
- H. given a known pathological condition, develop a complete listing of pertinent examination data to be collected
- I. given an abnormal movement description, analyze the probable cause of the movement and propose intervention to correct the deviation

MAJOR TOPICS TO BE INCLUDED

- A. Basic physics principles: Newtonian physics, forces, levers, vectors, centers of mass, mechanical advantage
- B. Specific musculoskeletal structure and function of the upper and lower extremities, trunk, head and neck
- C. Manual muscle testing
- D. Selected musculoskeletal special tests, e.g., leg length measurements; collateral ligament tests
- E. Functional manifestation of selected peripheral nerve lesions
- F. Common movement substitution patterns
- G. Posture analysis
- H. Gait analysis.

EXTRA TOPICS (optional)

Therapeutic interventions.