

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY

PTH 151 - MUSCULOSKELETAL STRUCTURE AND FUNCTION (5 CR.)

Course Description

Studies the human musculoskeletal system. Covers terms of position and movement, location and identification of specific bony landmarks, joint structure and design, ligaments, muscle origin, action and innervation, and emphasizes types of contraction. Lecture 2-3 hours. Laboratory 2-6 hours. Total 5-8 hours per week. 4-5 credits.

General Course Purpose

The ability to examine the musculoskeletal anatomy and identify specific components of the system is the foundation for understanding both normal and abnormal movement, ie., the study of kinesiology. Kinesiological analysis is the basis of physical therapy practice. Thus, Musculoskeletal Structure and Function is integral to future study of and applications which affect human movement performance.

Course Prerequisites/Corequisites

Prerequisites:

PTH 105, PTH 121

Course Objectives

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

- Describe the physiology of muscle contraction
- Determine the plane and axis of motion at each joint in the body
- Identify individual skeletal muscles according to their location, innervation and action throughout the body
- Identify and palpate specific bony landmarks
- Palpate skeletal muscles indicating origin, muscle belly, and insertion
- Describe the process of bone formation
- Discriminate the three classes of joints
- Diagram a synovial joint
- Position a muscle for anti-gravity or gravity minimized action
- Differentiate isometric, concentric, and eccentric muscle contractions
- Analyze simple movements according to plane and axis of motion, primary muscle action, cog, and base of support changes

Major Topics to be Included

- Musculoskeletal nomenclature
- Planes and axes of motion
- Joint classification
- Bone formation
- Muscle physiology
- Specific joint morphology
- Specific muscle location, action, and innervation
- Types of muscle contraction
- Roles of muscle