STANDARD COURSE OUTLINE

PHTA 2105 Clinical Kinesiology

PREREQUISITE: Students applying to the PTA Program with completion of all PTA Pre-requisite courses to occur by the completion of the spring semester.

COURSE DESCRIPTION

This course presents an overview of the relationship between structure and movement function of the human body including basic joint structure, muscle anatomy and function (origin, insertion, action and innervation), and types of muscle contraction. Applications of biomechanical and kinesiological principles are utilized to analyze common motor tasks.

CREDIT HOURS: 5 credit hours / non-transferable; 5 contact hours; 5 load hours

TARGET AUDIENCE: Students applying to the PTA Program

INSTRUCTIONAL MATERIALS: See Instructor for Details

COURSE OBJECTIVES

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

- 1) Apply basic biomechanical principles to movement and to anatomical structures
- 2) Identify basic joint and muscle characteristics.
- 3) Given a bone or diagram locate and name bones and bony landmarks of the UE's, LE's, and spine.
- 4) Identify the location and function of ligaments and joints of the UE's, LE's, and spine.
- 5) Identify muscles of the UE, LE, and trunk to include: origins and insertions, muscle action, muscle name.
- 6) Given a written description of a functional activity or limb movement, assess the following:
 - a. Muscle(s) working
 - b. type muscle contraction (eccentric, concentric, isotonic, isometric etc.)
 - c. agonist and antagonist muscles
 - d. influence of gravity (against gravity, gravity assisted, gravity eliminated)
 - e. differentiate between open and closed chain activities
- 7) Identify peripheral nerve innervation for each muscle covered in the UE, LE, and trunk.
- 8) Demonstrate basic understanding of hand and precision grips
- 9) Given a mock patient, demonstrate ability to locate palpable bony landmarks, joints, & muscles.

- 10) Given a written description or demonstration, name the joint motion that is occurring using appropriate terminology.
- 11) Differentiate between convex and concave surfaces for each joint.
- 12) Describe/define scapulohumeral rhythm and force couple and explain its role in shoulder movement.
- 13) List and/or identify rotator cuff muscles and their role in the shoulder.
- 14) Identify normal physiological range of motion
- 15) Demonstrate observational ROM for assessing joint ROM for UE's, LE's, spine.
- 16) Identify accessory motions per concave convex law for selected joints.
- 17) Identify loose-packed and closed-packed position for selected joints
- 18) Recognize definitions for various end feels.
- 19) Identify &/or describe a variety of common joint deformities

TOPICS:

Biomechanics Module

Skeletal & Muscular Module

Nervous System Module:

Articular & Arthrokinematics Module

Pelvic Girdle:

Hip

Knee

Ankle & Foot Module:

Shoulder Girdle

Shoulder

Elbow Complex

Wrist

Hand

Neck & Trunk

METHODS OF ASSESSMENT:

Quizzes

Written exams

Assignments & Activities

Small Group Activities

Case based problem solving

Discussion