Alexandria Technical and Community College

EXSC 1661: Kinesiology and Biomechanics

A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: 2
Lab Hours/Week: 2
OJT Hours/Week: *
Prerequisites: None
Corequisites: None
MnTC Goals: None

This course provides the learner with knowledge of the sciences of biomechanics, kinesiology, and human motion. Basic, essential movement patterns in humans will be investigated. Participants will study and attain understanding of the concepts of kinesiology and biomechanics; recognizing the importance of each concept in movement and exercise. Students will examine and determine planes of motion, forces, and the system of levers employed during physical activity. Knowledge of functional anatomy will enhance students’ ability to identify and describe musculoskeletal involvement during exercise and/or normal daily movement. Instruction in selection of outcome specific exercise is included, with an emphasis on corrective exercise prescription. Additional topics include postural stability, functional ranges of motion, and kinetic chain exercise description.

B. COURSE EFFECTIVE DATES: 04/27/2023 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Explain the concepts of biomechanics and kinesiology.
3. Define and explain relevance of the planes of human movement.
4. Compare and contrast the concepts of flexibility, mobility, and stability.
5. Review the concept of the human body as a system of levers.
6. Research and perform selected postural assessments and movement screens.
7. Analyze, define, and describe motions and patterns for specific exercises or movements.

D. LEARNING OUTCOMES (General)

1. The learner will demonstrate understanding of the fundamental principles of human movement as related to basic patterns, levers, motion descriptors, functional anatomy, and anatomical reference planes.
2. The learner will demonstrate ability to identify musculoskeletal involvement in daily and exercise-based movement.
3. The learner will be able to analyze movement patterns and demonstrate correct techniques for exercise protocols.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus
G. SPECIAL INFORMATION

None noted