A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: 2
Lab Hours/Week: 1
OJT Hours/Week: *

Prerequisites:
This course requires all three of these prerequisites
HEFI 1602 - Training Principles & Methodology II (Number of Years Valid: 5)
HEFI 1612 - Anatomy, Biomechanics, & Exercise Physiology II (Number of Years Valid: 5)
BIOL 1416 - Essentials of Anatomy and Physiology

Corequisites: None

MnTC Goals: None

This course provides the learner with skills and knowledge of the sciences of biomechanics, kinesiology, and human motion. Basic, essential movement patterns in humans will be reviewed. Students will examine and determine planes of motion, types of joint action, and the system of levers employed during physical activity. Functional anatomy will be studied, leading students to enhanced ability in identifying and describing 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, kinetic chain exercise description. Stability and postural assessments will be investigated. Prerequisite: HEFI1602; HEFI1611 or BIOL1417 and HEFI1612 or BIOL1419.

B. COURSE EFFECTIVE DATES: 01/11/2005 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Explain the concepts of "biomechanics".
2. Define and explain relevance of the "planes" of human movement.
3. Analyze targeted movements using functional anatomy
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.
8. Research and understand the NASM¿s, "Optimum Performance Training" model.
9. Outline the major components of the OPT model.

D. LEARNING OUTCOMES (General)

1. The learner will demonstrate the understanding of the basic fundamental principles of human movement as related to levers, motion descriptor, functional anatomy and the Standard Anatomical Reference Planes.
2. be able to demonstrate an understanding of human motion as it applies to the kinetic chain, posture analysis, functional movement patterns, and specific functional anatomy of the hip, shoulder and knee joints.

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

None
F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted