ROCHESTER COMMUNITY AND TECHNICAL COLLEGE COMMON COURSE OUTLINE

Course discipline/number/title: PHED 2154: Introduction to Biomechanics

A. CATALOG DESCRIPTION
1. Credits: 3
2. Hours/Week: 3 lecture
3. Prerequisites (Course discipline/number): None
4. MnTC Goals (if any): NA

This course is designed to introduce students to the fundamentals of movement as it relates to biomechanics. Biomechanics is utilized to study improving human performance by exploring muscle force in relationship to velocity, length and time. Linear motion, angular motion, coordination, proprioception, viscoelasticity all interrelate through neuromuscular and skeletal systems to create movement. Biomechanics explains, evaluates, analyzes and prescribes amendments to improve performance.

B. DATE LAST REVISED (Month, year): May, 2017

C. OUTLINE OF MAJOR CONTENT AREAS:
1. Anatomy Functions
2. Biomechanics - Principles and Laws
3. Musculoskeletal Mechanics – Principles, Function and Responses
4. Linear Kinetics – Laws, Principles and Mechanics
5. Angular Kinetics – Principles of Gravity, Torque, Interia
6. Linear and Angular Kinematics – Speed, Velocity and Movement Coordination
7. Application of Biomechanics in movement, physical education and sport performance
8. Applying biomechanics in injury rehabilitation

D. LEARNING OUTCOMES (GENERAL): The student will be able to:
1. Demonstrate knowledge of all aspects of biomechanics in general movement analysis.
2. Apply all aspects of biomechanics for teaching physical movement to children.
3. Analyze and apply of all aspects of biomechanics in coaching athletes for improving sport specific skills.
4. Demonstrate application of all aspects of biomechanics for adapting activities for injury rehabilitation and continued prescription for return to pre-injury physical status.
5. Develop proper sequences of motor movement for desired physical activity outcomes.
6. Evaluate any skill in relationship to improving performance through application of biomechanics.

E. LEARNING OUTCOMES (MNTC): NA

F. METHODS FOR EVALUATION OF STUDENT LEARNING:
1. Class Participation
2. Daily Assignments
3. Lab Assignments
4. Quizzes and Written Assignment

G. RCTC CORE OUTCOME(S) ADDRESSED:
Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.

H. SPECIAL INFORMATION (if any): None