Bemidji State University

PHED 3200: Introduction to Sport Biomechanics

A. COURSE DESCRIPTION

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

Introduction to biomechanical concepts and principles. Application of these principles to evaluating and improving performance in physical activities. Introduction to methods for qualitative movement analysis. Prerequisite: BIOL 2110 and PHED 3100 or consent of instructor.

B. COURSE EFFECTIVE DATES: 05/18/2001 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Friction  
2. Anatomical System for Describing Limb Motion  
3. Angular Kinematics  
4. Basic Mathematics: Solution of Equations, Trigonometric Functions  
5. Buoyancy, Flotation & Swimming Techniques  
6. Center of gravity  
7. Classifying forces. Vectors & Scalars, Vector Addition, Vector Resolution, & Equilibrium  
8. Direct Impact & Oblique Impact  
9. Fluid Mechanics  
10. Forms of Motion  
12. Linear Kinematics: Position, Distance & Displacement, Speed & Velocity, Acceleration  
14. Projectile Motion  
16. Work, Power, & Energy

D. LEARNING OUTCOMES (General)

1. acquire an appreciation on how these mechanical principles apply to improving performance in selected physical activities.  
2. acquire an understanding of the basic mechanical principles involved in sports.  
3. develop the ability to transfer the knowledge to other physical activities not discussed.
E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   None

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted