EASTERN ILLINOIS UNIVERSITY
Kinesiology and Sports Studies Department
PED 3800 Biomechanics
Course Outline
Fall 2009

INSTRUCTOR: Jeffrey M. Willardson, PhD, CSCS (call me Dr. Willardson)
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OFFICE LOCATION: Lantz 2230
OFFICE HOURS: M, W, F 9-10 AM; Th 2-3 PM (or by appointment)
CLASS DAYS: M, W, F
CLASS LOCATION: LTNZ 3881
CLASS TIME: 8-8:50 AM section 1; 1-2:15 section 2

COURSE DESCRIPTION
This purpose of this course is to gain an understanding of how the laws of physics apply to the body and sports implements during the performance of sports skills. **Please note that a scientific calculator is a required for this class.**

TEXTBOOK
MCGINNIS, P.M. Biomechanics of Sport and Exercise *(2nd edition)*. Champaign, IL: Human Kinetics, 2005.

COURSE OBJECTIVES
1. Discuss the external forces that act on the body and how they affect sports performance.
2. Analyze sports performance through the use of kinematic variables, such as: displacement, time, velocity, and acceleration.
3. Explain and demonstrate how Newton's three laws apply to sports performance.
4. Explain and demonstrate the relationships between mechanical work and energy and the application to sports performance.
5. Explain and demonstrate how torque applies in the performance of resistance exercise and in the execution of sports skills.

DATES TO REMEMBER

August 24	First day of classes
September 7	Labor Day—No classes
October 9	Fall break—No Classes
November 23-27	Thanksgiving break—No Classes
December 11	Last day of classes
December 17	Final Exam 8-10 Section 1
December 17	Final Exam 12:30-2:30 Section 2

GRADING

90-100%	= A
80-89%	= B
70-79%	= C
60-69%	= D
<59%	= F

Exam 1 = 60 points
Exam 2 = 60 points
Final = 30 points
Labs ~ 50-100 points
No opportunities will be given for extra credit

LECTURE SCHEDULE—please access WebCT for lecture material

TOPIC	READING
Forces—Maintaining Equilibrium or Changing Motion	Ch. 1
Forces—Maintaining Equilibrium or Changing Motion	
Linear Kinematics—Describing Objects in Linear Motion	Ch. 2
Linear Kinematics—Describing Objects in Linear Motion	
Review and Exam	
Linear Kinetics—Explaining the Causes of Linear Motion	Ch. 3
Linear Kinetics—Explaining the Causes of Linear Motion	
Work, Power, and Energy—Explaining the Causes of Motion Without Newton	Ch. 4
Work, Power, and Energy—Explaining the Causes of Motion Without Newton	
Review and Exam	
Torques and Moments of Force	Ch. 5
Torques and Moments of Force	
Angular Kinematics—Describing Objects in Angular Motion	Ch. 6
Angular Kinematics—Describing Objects in Angular Motion	
Review	

ACADEMIC MISCONDUCT
Examples of academic misconduct are cheating, plagiarism, and excessive absences. Please consult the Student Handbook for the official academic misconduct policy. Any academic misconduct will be dealt with according to the student handbook and the discretion of the instructor.

RESPECT FOR DIVERSITY
Diversity encompasses age, life experiences, profession, race, religion, sexual orientation, and lifestyle, social class, learning style, philosophy of life, personality, mental and physical challenges, customs, values, and gender. Diversity is to be respected in this class.

PROFESSIONALISM
This is a biomechanics class and therefore we will be studying the human body and human movement. This class may utilize students as human examples during the course of the class. Professional conduct is expected at all times. Failure to uphold this expectation will result in removal or failure in this class.