



UNIVERSITI TEKNOLOGI MARA

SPS213: INTRODUCTION TO SPORT BIOMECHANICS

Course Name (English)	INTRODUCTION TO SPORT BIOMECHANICS APPROVED
Course Code	SPS213
MQF Credit	3
Course Description	no description provided
Transferable Skills	Knowledge of basic biomechanics application and concept in sports
Teaching Methodologies	Lectures, Blended Learning, Lab Work, Presentation
CLO	<p>CLO1 identify the basic anatomical, kinematic and kinetic concept of human movement</p> <p>CLO2 recognize a given bone, ligament or muscle name, anatomic location or function</p> <p>CLO3 describe the kinematic and kinetic concept, laws and principles that govern the human body motion</p> <p>CLO4 illustrate how the human body generates mobility and motion</p>
Pre-Requisite Courses	No course recommendations
Topics	
<p>1. 1.Introduction to Biomechanics</p> <p>1.1) Definition of Biomechanics and history</p> <p>1.2) Various sub-disciplines in Biomechanics</p> <p>1.3) Specialised Areas of interest in Sport Biomechanics</p>	
<p>2. 2.Anatomical Bases of Human Motion</p> <p>2.1) Human anatomical reference position</p> <p>2.2) Planes and axes for human motion</p> <p>2.3) Movement orientations</p>	
<p>3. 3.Skeletal, Joints and Muscular System</p> <p>3.1) Functional anatomy of the human skeleton</p> <p>3.2) Structure, classification and function of bones</p> <p>3.3) Structure, classification and function of joints</p> <p>3.4) Joint segment displacement</p> <p>3.5) Anatomical basis of muscle system</p> <p>3.6) Muscle fascicles arrangement and lever system</p>	
<p>4. 4.Mechanical Bases of Human Motion</p> <p>4.1) Basic algebra, vectors and trigonometric applications</p> <p>4.2) Newton's Laws of Motion</p> <p>4.3) Characteristics of forces</p>	
<p>5. 5.Types of Motion</p> <p>5.1) Linear, angular and general motion</p> <p>5.2) Projectiles</p> <p>5.3) Force-motion relationship</p>	
<p>6. 6.Concepts in linear and angular kinematics</p> <p>6.1) Concepts of scalar and vectors in human mechanics</p> <p>6.2) Displacement, velocity and acceleration</p> <p>6.3) Equations of motion and related numerical calculations</p>	

7.7. Concepts in linear and angular kinetics

7.1) Types of forces influencing human motion

7.2) Center of mass and center of gravity

7.3) Basic kinetic equations of motion and related numerical calculations

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	n/a	20%	CLO1
	Group Project	n/a	20%	CLO3 , CLO4
	Test	Test	20%	CLO1 , CLO2 , CLO3

Reading List	Recommended Text	• Hall, S.J. 2007, <i>Basics biomechanics</i> , 5 Ed., New York : McGraw Hill Inc
	Reference Book Resources	<ul style="list-style-type: none"> • McGinnis, P.M. 2005, <i>Biomechanics of Sport and Exercise</i>, 2 Ed., Champaign, IL: Human Kinetics • Abernethy B, Hanrahan, S.J., Kippers, V., Mac 2005, <i>Biophysical Foundation of Human Movement</i>, 2 Ed., Champaign, IL: Human Kinetics
Article/Paper List	This Course does not have any article/paper resources	
Other References	This Course does not have any other resources	