



UNIVERSITI TEKNOLOGI MARA

SPS260: FUNDAMENTAL OF SPORT BIOMECHANICS

Course Name (English)	FUNDAMENTAL OF SPORT BIOMECHANICS APPROVED
Course Code	SPS260
MQF Credit	3
Course Description	This course discusses the anatomical and foundation of human motion. The discussion focuses on basic kinematic and kinetic concepts, human mobility system and structure and functioning of the human body in relation to physical forces that govern human motion
Transferable Skills	Knowledge of human motion mechanics
Teaching Methodologies	Lectures, Lab Work, Presentation
CLO	CLO1 Explain the basic anatomical, kinematic and kinetic concepts of human movement CLO2 Analyze the govern human body motion based from biomechanical characteristics CLO3 Conduct video analysis of sport performance
Pre-Requisite Courses	No course recommendations
Topics	
1. Introduction to fundamental of sport biomechanics 1.1) Definition and perspective 1.2) Problem-solving approach	
2. Anatomical bases of human motion 2.1) Anatomical reference position 2.2) Anatomical reference planes and axes 2.3) Joint movement terminology	
3. Bone, joints and muscular system 3.1) Functional anatomy of the human skeleton 3.2) Structure, classification and function of bones 3.3) Structure, classification and function of joints 3.4) Structure, classification and function of human skeletal muscle	
4. Mechanical bases of human motion 4.1) Newton's Laws of Motion 4.2) Characteristics of forces	
5. Types of Motion 5.1) Linear, angular and general motion 5.2) Projectiles 5.3) Force-motion relationship	
6. Concepts in linear and angular kinematics 6.1) Concepts of scalar and vectors in human mechanics 6.2) Displacement, velocity and acceleration 6.3) Basic kinematic equations of motion and related numerical calculations	
7. Concepts in linear and angular kinetics 7.1) Types of forces influencing human motion 7.2) Centre of mass and centre of gravity 7.3) Basic kinetic equations of motion and related numerical calculations	
8. Sport Skill Analysis 8.1) Video analysis of sport performance	

Assessment Breakdown	%
Continuous Assessment	60.00%
Final Assessment	40.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Journal article review	10%	CLO1
	Assignment	Quiz 1	10%	CLO1
	Assignment	Quiz 2	10%	CLO2
	Group Project	Video analysis	30%	CLO3

Reading List	Recommended Text
	Susan J. Hall, <i>Basics biomechanics</i> , 8 Ed., McGraw Hill Inc. New York

Article/Paper List
This Course does not have any article/paper resources

Other References
This Course does not have any other resources