

Branch Name:	BACHELOR OF PHYSIOTHERAPY
Program Code:	PT101
Course Title:	KINESIOLOGY
Course Code:	2PT1010204
Pre-requisite Course:	Human Anatomy, Human Physiology, Exercise Therapy I & Soft Tissue Manipulation

Teaching and Examination Scheme:

Teaching Scheme (Hours per week)			Credit	Evaluation Scheme (Marks)					
Lecture	Tutorial	Practical		Theory(T)		Practical(P)		Total Marks	
				University Assessment	Continuous Assessment	University Assessment	Continuous Assessment		
				Theory	Practical				
2.5	-	-	5	40	10	-	-	50	-

COURSE OUTCOMES:

At the end of the course the candidate will be able to

1. Acquire the skill of assessment of isolated and group muscle strength subjectively and objectively.
2. Analyze normal human posture and its associated problems, its management.
3. Analyze the various normal musculoskeletal movements during breathing, gait and daily living activities and in terms of biomechanical and physiological principles.

Subject Contents:

Sr. No.	Topic	Hours
1	Mechanics of joint motion: a) Joint design b) Materials used in human joints c) General properties of connective tissues d) Joint function e) Joint motion f) Structure and types of joints g) Types of movements	05
2	Mechanics of muscular action: a) Mobility and stability functions of muscles b) Elements of muscle structure c) Muscle function d) Classification of muscles e) Line of pull f) Types of contractions g) Role of muscles and tendons h) Action of two joint motions i) Non customary	04
3	Skilled Movements: a) Rope climbing b) Cycling c) Running d) Ballistic movements e) Volitional movements	02
4	Impetus: Impetus to external objects and receiving impetus	02

5	Posture a) Static and dynamic posture b) Postural control c) Kinetics and kinematics of posture d) Ideal posture e) Analysis of posture	05
6	Locomotion: a) Normal gait analysis b) Definition of gait c) Phases of normal gait d) Normal gait with kinetic and kinematics e) Abnormal pathological gaits f) Gait training g) Kinematics and kinetics of the trunk and upper extremities in relation to gait, stair case climbing and running	15
7	Biomechanics of joints: Kinetics, kinematics and patho-mechanics of various joint – hip , knee, ankle, foot, shoulder, elbow, wrist and hand	30
8	Biomechanics of spinal column: a) Spinal curves b) Articulations c) Non contractile soft tissue of column d) IV disc e) Ligaments f) Intrinsic equilibrium g) Movements of spinal column h) Muscle mechanics	12
9	Mechanics of pelvic complex: a) Pelvis at rest, in standing body and in motion b) Lumbosacral Rhythm c) Patho mechanics of pelvis	03
10	Mechanics of thorax: a) General structure and function b) Rib cage movements c) The muscles associated with the rib cage d) Movements between ribs and vertebrae, sternum and ribs, e) Patho mechanics of respiration	06
11	The Temporomandibular Joint General features, structure and function	02
12	Postural strain and occupational hazards: a) Biomechanical aspects of abnormal postural and postural strain due to occupation b) Correct use of body mechanics at home, at school, work and at recreation	03
13	Kinetics and kinematics of ADL : a) Supine to sitting b) Sitting to standing c) Squatting d) Climbing up and down e) Pushing f) Pulling g) Overhead activities h) Walking i) Running j) Jogging	06

List of References:

Text Books:

1. Joint structure and function, Cynthia C Norkin - 5th Edition
2. Kinesiology the skeletal system and muscle function- 2nd Edition

Reference Book:

1. Clinical Kinesiology and Anatomy, Lippert, Lynn S.- 4th Edition.

List of Open Source Software/learning website:

- [k-hub.in e library/A single platform for all e resources](#) (K-hub, E-Resource)
 - User Name- KB4605VNG
 - Password- BL@69BX!
- [knowledgegainer.delnet.in](#) (Delnet , E-Resource)
 - User Name- gjspum
 - Password- spu10924

Course Learning Outcomes (CLO): On completion of this course, the students will be able to:

CLO	Description	Bloom's Taxonomy Level
CLO1	Discuss and acquire the skill of Assessment of isolated and muscle group.	1 Remembering 2 Understanding
CLO2	Learn basic techniques to identify and interpret Normal, Abnormal Posture and Occupational hazards.	1 Remembering 2 Understanding 3 Applying
CLO3	Learn the different phases of Gait Cycle and elaborate the gait deviations.	2 Understanding 3 Applying 5 Evaluate
CLO4	To understand the application of various biomechanical principles in the evaluation of the musculoskeletal system.	2 Understanding 3 Applying
CLO5	Learn the skilled motion, identify and compare & evaluate abnormality associated with daily living activities.	3 Applying 4 Analyze 5 Evaluate 6 Creating
CLO6	Analyze the various normal musculoskeletal movements during breathing and daily living activities and in terms of biomechanical and physiological principles.	1 Remembering 2 Understanding

Mapping of CLOs with Pos & PSOs

Course Learning Outcomes	Program Outcomes (POs)								Program Specific Outcomes (PSOs)							
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6	PSO 7	PSO 8
CLO1	H	H							M							
CLO2			H		L					H						
CLO3				M							M					
CLO4		M	M	M								L		M		
CLO5						M	L						M		L	H
CLO6							M	M				M				H

H= High M=Medium L=Low