

Course Description

Department: Medical Rehabilitation Sciences

1439-1440 H Academic Year – Semester-II

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Course name	Biomechanics & Kinesiology
Course number	(PTH-317)
Credit Hours (teaching units)	2+1
College	Medical Rehabilitation Sciences Department
Targeted Students	Level-5
Pre-requisite	PTH(211)
Name of Coordinator	Dr.Khalid Alahmari

Course Description

Course Objectives

(A)General Objectives:

Students should develop a sound knowledge of kinesiology and its application to Physical therapy diagnosis and treatment.

(B)Specific Objectives:

Students should be able to describe arthokinematics & osteokinematics of the different joints of the human body

Course Learning Outcomes:

By the end of this course the student should be able to:

1. Ability to understand the basic concepts of Biomechanics and Kinesiology
2. Biomechanics and Kinesiology of upper and lower extremities
3. Biomechanics and Kinesiology of Spine
4. Gait and abnormal patterns of gait
5. Evaluation of Posture.

Main Textbook

Neumann: Kinesiology of Musculoskeletal system, 2nd Edition

Mark Distribution

Continuous	Theory exam	28	Lab exam	17
	Discussion	2	Assignments	3
	Total	30	Total	20
Final	70% MCQs	25		
	30% Written type questions	5		
	Total	30	Total	20

Assessment Tasks for Students during the course

#	Assessment task*	Week Due	Proportion of Total Assessment
1	1 st C.A Theory and Lab examination	5th	25%
2	2 nd C.A Theory and Lab examination	12th	25%
3	Final Lab examination	15th	20%
4	Final theory examination	16th	30%
	Total		100

Distribution of Course Lectures and Practical Classes

Topics to be covered

List of Topics		Contact Hours
1	Basic concepts in biomechanics	2
2	Joint structure and function	2
3	Kinesiology of Shoulder complex- Part1	2
4	Kinesiology of Shoulder complex – Part 2	2

5	Kinesiology of elbow and forearm complex - Part 1	2
6	Kinesiology of elbow and forearm complex - Part 2	2
7	Kinesiology of wrist complex - Part 1	2
8	Kinesiology of wrist complex - Part 2	2
9	Kinesiology of hip complex- Part 1	2
10	Kinesiology of hip complex- Part 2	2
11	Kinesiology of Knee complex- Part 1	2
12	Kinesiology of Knee complex- Part 1	2
13	Kinesiology of Spine- Part 1	2
14	Kinesiology of Spine- Part 2	2
Practical topics		
Basic concepts in biomechanics – Planes and Axes during motion		2
Joint structure and function – Identification of various structures in Synarthroses and Diarthroses joints		2
Kinesiology of Shoulder complex-1 – Osteokinematics & Arthrokinematics of SC and AC joint		2
Kinesiology of Shoulder complex -2 - Osteokinematics & Arthrokinematics of GH and ST joint		2
Kinesiology of Elbow complex-1 – Osteokinematics & Arthrokinematics of Humero-radial and Humero-ulnar joints		2
Kinesiology of Elbow complex -2 - Osteokinematics & Arthrokinematics of Proximal and Distal Radio-ulnar joints		2
Kinesiology of wrist and hand - Osteokinematics & Arthrokinematics of Radiocarpal joint		2
Kinesiology of wrist and hand- Osteokinematics & Arthrokinematics of Mid carpal joint		
Kinesiology of hip complex-1 - Osteokinematics & Arthrokinematics of Hip joint		2
Kinesiology of hip complex-2 - Osteokinematics & Arthrokinematics of Sacro-iliac joint		2
Kinesiology of Knee complex-1 - Osteokinematics & Arthrokinematics of Tibio-		2

femoral joint	
Kinesiology of Knee complex-2 - Osteokinematics & Arthrokinematics of Patello femoral joint	2
Kinesiology of ankle complex - Osteokinematics & Arthrokinematics of Mid tarsal joint and TCF joint	2
Kinesiology of Spine – Osteokinematics & Arthrokinematics of Spine – Part-1	2
Kinesiology of Spine – Osteokinematics & Arthrokinematics of Spine – Part-2	2