

AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Joint Biomechanics								
Course Code		FZ211		Couse Level		Short Cycle (Associate's Degree)				
ECTS Credit	2	Workload	50 (Hours)	Theory	/	2	Practice	0	Laboratory	0
Objectives of t	the Course	Understanding of biomechanical properties of joints and physics law related with joints								
Course Content		Introduction to biomechanics, areas where biomechanics is used, strain, stress, bending, torsion, balance, posture, gravity, gravity line and posture relations, compensation mechanisms, center of gravity, upper extremity biomechanics, lower extremity biomechanics.								
Work Placement		N/A								
Planned Learning Activities an		and Teaching	Methods	Explar	nation	n (Presentat	tion), Case Stu	udy		
Name of Lecturer(s)		Ins. Müge DE	RELİ							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1 Lecture notes

Week	Weekly Detailed Cou	rse Contents				
1	Theoretical	Introduction and principles of biomechanics				
2	Theoretical	Introduction and principles of biomechanics				
3	Theoretical	Bone tissue biomechanics				
4	Theoretical	Muscle tissue biomechanics				
5	Theoretical	Tendon biomechanics				
6	Theoretical	Ligament biomechanics				
7	Theoretical	Joint cartilage tissue biomechanics				
8	Theoretical	Shoulder biomechanics				
9	Theoretical	Elbow biomechanics				
10	Theoretical	Hand-wrist biomechanics				
11	Theoretical	Hip biomechanics				
12	Theoretical	Knee biomechanics				
13	Theoretical	Foot-ankle biomechanics				
14	Theoretical	Foot-ankle biomechanics				

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload	
Lecture - Theory	14	1	2	42	
Midterm Examination	1	2	2	4	
Final Examination	1	2	2	4	
	50				
[Total Workload (Hours) / 25*] = ECTS					
*25 hour workload is accepted as 1 ECTS					

Learning Outcomes

1	Describe basic biomechanical concepts
2	Distinguish between the concepts of biomechanics and joint biomechanics
3	Explaining lever systems in humans
4	Explaining the basic mechanical properties of the tissues that make up the musculoskeletal system



Progr	amme Outcomes (Physiotherapy)
1	To be able to recall the information of research methods and statistics so as to follow the developments, monitor and interpret scientific literature
2	To have the appropriate knowledge of basic sciences at the level of interest, to use specific medical terms and terminology of physical therapy
3	To be able to recall knowledge of the general structure and proporties of musculoskeletal system and the joints and to evaluate the story of musculoskeletal diseases.
4	To be able to comprehend the methods of measurement of the range of motion of joints and to measure it.
5	To be able implement a general evaluation of posture analysis and gait analysis.
6	To be able to recall the knowledge about general characteristics of musculoskeletal diseases, osteoporosis, osteoarthritis, rheumatoid arthritis, ankylosing spondylitis, especially rheumatic diseases, mechanical low back and neck pain, disc herniation, soft tissue disorders and to apply appropriate physiotherapy.
7	To be able to recall the knowledge and gain skills about the devices and the agents of heater used in physical therapy, indications and contraindications of using, and the necessary information about how to apply on patients.
8	To be able to recall the knowledge of the electromagnetic field.
9	To be able to recall what Elektroakapunktur, Laser, Biofeedback, cervical and lumbar traction systems, pneumatic compression therapy are, and how to apply them, which one is applicable to patients.
10	To be able to recall what manipulation-mobilization is and which patients are suitable for this application.
11	To be able to recall what massage and hydrotherapy treatments are and which patients are suitable for these applications.
12	To be able to gain the professional and ethical awareness, apply gained knowledge and skills in reallife situations and transfer gained knowlegde to individuals around her/his environment, and improve behavior of life-long learning.
13	To gain knowledge about methods of diagnosis, protection and treatment of diseases
14	To be able to recall the knowledge and gain skills about physical therapy and rehabilitation methods to be applied to neurological disorders.
15	To be able to recall the knowledge and gain skills about physical therapy and rehabilitation methods to be applied to cardiopulmonary disorders.
16	To be able to recall the knowledge and gain skills about physical therapy and rehabilitation methods to be applied to pediatric patients.
17	To be able to gain knowledge about the effects of fitness and exercise on metabolism and responses of body systems to them.
18	To have knowledge about rehabilitation services
19	To become individuals who can do interdisciplinary team work, with a sense of social responsibility and entrepreneur.
20	To be able to recall the knowledge about Ataturk's Principles and the History of Turkish Revolution.
21	To be able to gain the knowledge and ability to become contemporary individuals who can use Turkish language grammar well and know a foreign language knowledge necessasary to follow the developments in the profession.

Contribution of Learning Outcomes to Programme Outcomes 1: Very Low, 2: Low, 3: Medium, 4: High, 5: Very High

	L1	L2	L3	L4	L5
P3	5	5	5	5	5
P4	5	5	5	5	5
P5	5	5	5	5	5

