D 57	MEGHAN			CIC	Course Code	• MNMI 7049				
Program Name: MECHANICAL ENGINEERING, THESIS MASTER'S PROGRAM					Course Code: MNMU 7048 Course Name: Biomechanics					
MASTERSTR	OGRAM				Course Nam	e: Biomechanics				
Semester	Theory	Practice	Lab	Credit	ECTS	Course Language		Course Type		
1 3		0 0 3			7 ENGLIS		SH Elective			
Admission Req	uirements			Course d	loes not have	the condition consider	ed.			
Compulsory At	tendance	Theory 70%			Practice 0% F.PROF.DR. YUNUS ZİYA ARSLA		Lab 0%			
Course Teacher	r(s)									
Course Content		Introduction to biomechanics. Statics and dynamics analysis of biomechanical models. Deriving the equations of motions of biomechanical models by Lagranian method. Rheological models of biomechanical systems. Mechanical properties of tendon, muscle, bone and ligament. Muscle mechanics: Theories on muscle contraction, physiological properties of muscles, instantaneous contractile conditions of muscles. Kinesiological electromyography.								
Course Learning Outcomes		Knowledge on terminology of biomechanics and anatomy. Knowledge on mechanical properties o tendon, muscle, bone and ligament. Detailed knowledge on muscle mechanics and kinesiological EMG Ability to perform mechanical analysis of biomechanical models. Ability to process EMG signal.								
Teaching and L	earning		entation, discu	•		car moucis. Admity	to process EM	10 51611 4 11		
Methods Assessment S	System					Number	Contr	ibution (%)		
Assignments	<i>system</i>					3	Contribution (%) 10			
Presentation					0		0			
Mid-term Exami	nations (inclu	ding time for p	reparation)		1		20			
Project Clinical Practice					0		0			
Laboratory	, 				0		0			
Field Work					0		0			
Other Applicatio	ons				0		0			
Quiz Term Paper/ Pro	ject				0		0			
Portfolio Study					0		0			
Reports					0		0			
Learning Diary Thesis/ Project					0		0			
Seminar					0		0			
Final Exam					1		70			
Other Total					0		0 100			
The Weight of t	he In-Term A	ssignments in	the Final Gra	de	5 4		30			
The Weight of t					1		70			
Continuous Im (questionnaires Measurement a	, interviews, a	ind so on.) Fro	ont Shown		-	he students concerning s are received via interv ter.	-	ods and the content		
ECTS						Time		Credit Workload		
Activities				N	umber	(Hour)				
Class Hours					14			42		
Working Hours Assignments	out of Class			14		3		42		
Presentation			0		0	0				
Mid-term Examinations (including time for preparation)				1	20	20				
Project				0		0	0			
Clinical Practice Laboratory				0 0	0		0			
Field Work				0 0		0				
Other Applications Final Examinations (including preparatory year)				0 0		0				
					0	20		20		

	r/ Project	0	0	C						
Portfolio St	tudy	0	0	-						
Reports		0	0		0					
Learning D		0	0		0					
Thesis/ Pro	ject	0	0		0					
Seminar		0	0		0					
Other		0	0		0					
Total Wor					17					
Total Wor					7					
	dit of Course				7					
	Course Contents									
week	Theoretical Topic		Practice Topics							
1	Introduction to Biomechanics. Anatomical ter	minology.								
2	Statics analysis of biomechanical models.									
3	Kinematic analysis of biomechanical models.									
4	Kinetic analysis of biomechanical models.									
5	Equation of motions by Lagranian method.									
6	Equation of motions of biomechaical models									
	methods.									
7 8	Anthropometry. Viscoelasticity.									
<u> </u>	Rheological models of biomechanical models									
10	Mechanical properties of tendon, muscle, bon									
10	Muscle mechanics: Theories on muscle contra									
	Muscle mechanics: physiological properties									
12	contractile conditions of muscles.									
13	Kinesiological electromyography (EMG).									
14		1 mm anasim a mathada								
14	Computer applications of classical EMG signa	a proceesing methods.								
Relations	ship of Proficiency Program with Cou		nes			Point				
No		gram Competencies								
The a	ability to deepen and improve his/her knowledge	e by relying on undergradu	ate qualifications in a	field on expe	rt level.	5				
	ability to grasp the interaction between Mechani					5				
	ability to apply the theoretical and practical inf			Engineering	field and the	5				
	ty to solve problems that require expertise using			- 41 4						
	e ability to fictionalize, develop a solution algorithm, solve, evaluate the results of and apply these to a problem in chanical Engineering field independently.									
						4				
5 The a	ability to develop new strategic approaches and	solving problems by takin				4				
5 The a occur	ability to develop new strategic approaches and r in applications in Mechanical Engineering field	solving problems by takin l.	g responsibility when	unforeseen c	ircumstance	4 ⁸ 3				
5 The a occur	ability to develop new strategic approaches and r in applications in Mechanical Engineering field ability to evaluate knowledge on Mechanical	solving problems by takin 1. Engineering field criticall	g responsibility when	unforeseen c	ircumstance	4 ^s 3				
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