KINEMATICS AND SYNTHESIS OF MECHANISMS									
1	Course Title:	KINEMA	KINEMATICS AND SYNTHESIS OF MECHANISMS						
2	Course Code:	MAK 52	50						
3	Type of Course:	Optional							
4	Level of Course:	Second	Cycle						
5	Year of Study:	1							
6	Semester:	2							
7	ECTS Credits Allocated:	7.50							
8	Theoretical (hour/week):	3.00							
9	Practice (hour/week):	0.00							
10	Laboratory (hour/week):	0							
11	Prerequisites:	None							
12	Language:	Turkish							
13	Mode of Delivery:	Face to t	face						
14	Course Coordinator:	Prof. Dr. OSMAN KOPMAZ							
15	Course Lecturers:	Prof. Dr. Osman Kopmaz							
16	Contact information of the Course Coordinator:	okopmaz@uludag.edu.tr +90 224 294 19 62 Uludağ Üniversitesi, Mühendislik Mimarlık Fakültesi, Makine Mühendisliği Bölümü, Görükle, 16059 Bursa							
17	Website:	http://www20.uludag.edu.tr/~mtd/							
18	Objective of the Course:	Engineers who deal with design usually encounter with the problems of producing or transforming certain motions. The main goal of this course is to give solution methods to the aforementioned design problems, which are based on scientific principles.							
19	Contribution of the Course to Professional Development:								
20	Learning Outcomes:								
		1	Students who take this course can define design problems in a more scientific way, and decide which solution method they should use.						
		2	They analyze and design mechanisms.						
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21	Course Content:								
		Co	ourse Content:						
Week	Theoretical		Practice						
1	A general review of mechanisms the	eory.							
2	Complex number and vector method kinematic analysis of planar mechar Application examples.	is in the iisms.							

3	Matrix matrice arbitrat and pa	atrix methods in kinematics. Finite rotation atrices of a rigid body. Cartesian, Euler and bitrary axis rotation matrices. Euler angles ad parameters. 1st take-home.															
4	Rigid b motion	jid body displacement matrices. Screw tion matrix. Coordinate transformations.															
5	Relation matrice displace	lation between rotation and displacement trices. Differential rotation and differential placement matrices.															
6	Relativ Applica	e veloc ations. 2	city and 2nd tał	l acce ke-hor	leratior ne.	n anal	yses.										
7	Kinem RSSR,	nematic analysis of spatial mechanisms. SR, RRSS, and RCCC mechanisms.															
8	Repea	ting co	urses a	and mi	dterm	exam											
9	Rigid b points genera	jid body guidance mechanisms. Center ints curves. Circle points. Function nerating mechanisms.															
10	Path g synthe take-he	th generating mechanisms. Optimal nthesis of mechanism, and examples. 3rd ke-home.															
11	Differe	ferential geometry of motion.															
12	Cam m	m mechanisms. Motion programs.															
13	Cam d criterio	m design based on transmission angle erion. 4th take-home.															
14	Intermi	ttent m	otion n	necha	nisms.												
Activites						1	Number			Dura	Duration (hour)			Total Work Load (hour)			
Theore	tical								E. Soyiemez, wekanizma Mathaaculik			та <u>ге</u> к 3.00	a teknigi, Prestij A 3.00			ans 42.00	
Practicals/Labs						(0			0.00			0.00				
Se <mark>4</mark> 3stu	Asses	nent preper	ation					1	14			8.00			112.00		
Homeworks						4	4			15.00			60.00				
Rielerin Exam						25	25.00			0.00			0.00				
Field S	tudies							(0			0.00			0.00		
Midter	₩6fKapp	ðject				4		25	25.00			2.50	2.50			2.50	
Others								(0			0.00			0.00		
Final E	xams					6		10	100.00			2.50			2.50		
Total V	Vork Loa	ad													219.00		
\$4819A	ବିଧୟୋବନ୍ତନହୋଇଥିଏ/ 30 hr													7.30			
ECTS	ECTS Credit of the Course													7.50			
Total						10	100.00										
Measu Course	rement	and Ev	aluatio	n Tec	hnique	s Use	d in th	е									
24	ECTS	/ WO	RK L	OAD	TAB	LE											
25	5 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS																
	PC	1 PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16	
ÖK1	4	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	
ÖK2	4	4	4	0	0	0	4	0	0	0	0	0	0	0	0	0	

LO: Learning Objectives PQ: Program Qualifications											
Contrib ution Level:	1 very low	2 low	3 Medium	4 High	5 Very High						