

MM 303 Machine Elements I				DEPARTMENT of MECHANICAL ENGINEERING					
Semester	Methods of Education							Credits	
	Lecture	Recit.	Lab.	Project /Field Study	Homework	Other	Total	Credit	ECTS Credit
5	42	-	-	40	30	3	115	3	5.0
Language	Turkish								
Compulsory / Elective	Compulsory								
Prerequisites	MM 210E								
Course Contents	Stress analysis. Design criteria for static strength. Design criteria for fatigue strength. Permanent joints; welded, soldered, adhesive bonded and riveted joints. Nonpermanent joints; bolted joints, power screws, keys, pins knuckles and press fitted, tight fitted and conical fitted connections. Shafts and axles. Springs. Term project.								
Course Objectives	The main objectives of the course are to give the student confidence in analyzing and designing of machine elements in mechanical systems. To improve the goal recognition, creativity and intuition and to enable to gain experience in machine design. To help the student understand the different modes of failure of machine elements.								
Learning Outcomes and Competences	At the end of this course; student should be able to recognize the formation and calculation methods of permanent and nonpermanenet joints, shafts and axles with mechanical springs. Students able to design machine elements and simple mechanical systems and also understand application of standarda, static and dynamic design criteria.								
Textbook and /or Reference	Ders Notları B. Tuç ve N. Gemalmayan, Makina Elemanları M. Akkurt, Bağlama Elemanları M. Gediktaş, Mechanical Eng. Design J. E. Shigley, Makine Elemanları ve Konstrüksiyon Örnekleri F. C. Babalık, Machine Design R. L. Norton								
Assessment Criteria						If any, mark as (x)		Percentage (%)	
	Midterm Exams					X		40	
	Quizzes					X		5	
	Homeworks					X		5	
	Projects					X		10	
	Term Paper								
	Laboratory Work								
	Other								
Final Exam					X		40		
Instructors	Prof. Bedri TUC, Assist. Prof. Nihat GEMALMAYAN								
Week	Subject								
1	Stress analaysis. Design criteria for static strength								
2	Design criteria for static strength								
3	Design criteria for fatigue strength								
4	Shafts and axles								
5	Shafts and axles. Bolted joints								
6	Bolted joints (Project I)								
7	Power screws and keys (Midterm Exam I)								
8	Keys and pins								
9	Knuckles, tolerances and pres fitted connections								
10	Press fitted, tight fitted and conical fitted connections								
11	Welded connections								
12	Welded and soldered connections								
13	Adhesive bonded and riveted joints (Midterm Exam II)								
14	Springs								