

MM 507 Advanced Strength of Materials				MECHANICAL ENGINEERING DEPARTMENT					
Semester	Methods of Education							Credits	
	Lecture	Recit.	Lab.	Project/Field Study	Homework	Other	Total	Credit	ECTS credit
1,2	30	12				146	188	3	7.5
Language	Turkish								
Compulsory / Elective	Optional								
Prerequisites	-								
Course Contents	Introduction to plane elasticity teory, equilibrium equations, kinematic relations, compatibilty, symmetrical bending of circular plates, beams on elastic foundations, membrane stresses in thin shells, torsion of prismatic bars.								
Course Objectives	To teach the students the more complex Mechanics of materials problems, by using the basic equtions of elasticity.								
Learning Outcomes and Competences	Understanding special topics of mechanics of materials that are not covered in the elemantary mechanics of materials course.								
Textbook and /or Reference	1. Ansel C. Uğural and Saul K. Fenster, Advanced Strength and Applied Elasticity, third edition, Prentice Hall Inc., USA, 1989.								
Assessment Criteria					If any, mark as (X)		Percentage (%)		
	Midterm Exams				X		30		
	Quizzes								
	Homeworks								
	Projects								
	Term Paper								
	Laboratory Work								
	Other								
	Final Exam				X		70		
Instructors									
Week	Subject								
1	Introduction to Plane Elasticity Teory								
2	Plane Elasticity Theory:Equilibrium Equations								
3	Plane Elasticity Theory:Kinematic Realations,Compatibility								
4	Introduction to Plane Theory:General Equations								
5	Introduction to Plane Theory:Rectangular Plates,Boundary Conditions								
6	Axisymmetrically Loaded Circular Plates								
7	MT-I,Solution of Some Parctical Problems About Circular Plates								
8	Beams on Elastic Foundations								
9	Semi-Infinite And Infinite Beam Problems								
10	Introduction to Shell Theory: General Equations								
11	Membrane Stresses in Thin Shells								
12	Torsion of Prismatic Bars:Governing Equations								
13	MT II,Prandtl and Membran Analogy								
14	Torsion of-walled Members of Open and Multiply Connected Sections								