



ESOGÜ Electrical-Electronics Engineering Department

COURSE CODE: 15122XXXX

COURSE TITLE: Engineering

Mechanics

Semester	Weekly Hours		COURSE			
	Theoretical	Practical	Credits	ECTS	Type	Language
7	3	0	3	3	Compulsory (x) Elective ()	Turkish () English (x)
Write the credit (for non-credit courses weekly hours) below (If necessary distribute the credits.).						
Math and Basic Science			Electrical Engineering [mark (Ö) if there is high design content]		General Education	Humanities
3			()			
Assessment			THEORETICAL-PRACTICAL COURSES			LABORATORY COURSES
			Type	Number	%	Activity Type
Midterm			Midterm	1	50	Quiz
			Quiz			Lab performance
			Homework			Report
			Project			Oral exam
			Other (.....)			Other (.....)
Final				1	50	
Makeup exam (Oral/Written)			Written			
Prerequisites						
Brief content of the course			Introduction, Basic principles of statics, Force systems (in plane and in space), Rigid bodies and equivalent systems of forces, Equilibrium of rigid bodies, Centroids and centers of gravity, Forces in beams, moment, shear and normal force diagrams, Moments of inertia, Basic principles of dynamics, Kinematics and kinetics, pure bending & Stress Analysis of rigid bodies, normal and shear stresses.			
Objectives of the course			To study and analyze forces on a static particle, To study and analyze forces and moments on a static rigid body, To study and analyze forces/moments on/between multiple static rigid bodies, To study and analyze internal forces/moments in a static rigid body, To use computer programming to solve statics problems.			
Contribution of the course towards professional education			To be able to identify, formulate and solve engineering problems, To recognize the need for continuing life-long learning, To apply the fundamental knowledge of science, mathematics and engineering principles, To be able to use engineering skills and tools in engineering practice, To be able to write effectively, To be able to work with, specialized applications of, computers in the performance of job functions.			
Outcomes of the course			To be able to identify, formulate and solve engineering problems, To recognize the need for continuing life-long learning, To apply the fundamental knowledge of science, mathematics and engineering principles.			
Textbook of the course			STATICS Hibbeler DYNAMICS Hibbeler			
Other reference books			STATICS Beer & Johnston STATICS Meriam DYNAMICS Beer & Johnston			
Required material for the course			Calculator, necessary instruments for drawings			

WEEKLY PLAN OF THE COURSE	
Week	Topics
1	Introduction, Basic principles of statics
2	Force systems (in plane and in space)
3	Rigid bodies and equivalent systems of forces
4	Equilibrium of rigid bodies
5	Centroids and centers of gravity
6	Structures , Truss Systems
7	Normal, shear and bending moment diagrams
8	Midterm
9	Midterm
10	Moments of inertia
11	Kinematics and kinetics
12	Pure bending
13	Shear stress
14	Normal and shear stresses of rigid bodies
15,16	Final

NO	OUTCOMES OF THE PROGRAMME	4	3	2	1
1	Adequate knowledge of mathematics, science and Electrical and Electronics Engineering; ability to practice theoretical and practical knowledge of these areas into modeling and solving problems of Electrical and Electronic Engineering		X		
2	Ability to identify, formulate and solve complex engineering problems in Electrical and Electronics Engineering and related fields, having skills to select and apply appropriate analysis and modelling methods for this purpose.				X
3	Having skills to design a complex system, process, equipment or product that should work under realistic conditions and constraints and satisfy specific requirements; ability to apply modern design methods for this purpose.				X
4	Having skills to develop, select and apply modern techniques and tools needed for applications in Electrical and Electronics Engineering, skills to use information technology effectively.		X		
5	Skills to design and conduct tests, collect data, analyze and interpret the results for investigation of problems in Electrical and Electronics Engineering				X
6	Ability to function effectively as an individual and as a member of teams within the discipline and in multidiscipline areas.				X
7	Communicating effectively in oral and written form both in Turkish and English. Effective report writing and understanding written reports, preparing design and manufacturing reports, making effective presentations, skills to give and receive clear and concise instructions.				X
8	Awareness of the necessity of lifelong learning, access to information, monitoring developments in science and technology and the ability to self-renewing				X
9	Understanding of professional and ethical responsibility		X		
10	Information on project management, change management and risk management practices in business, awareness on entrepreneurship, innovation and sustainable development.			X	
11	Information about universal and social effects of engineering applications on health, safety and environment; awareness of the legal consequences of engineering solutions.				X

Scale for assessing the contribution of the course to the program outcomes:

4: High

3: Medium

2: Low

1:None

Name of Instructor(s): Prof. Dr. Gökhan ÇINAR

Signature(s):

Date: 27/10/2021