



# ESOGÜ Electrical-Electronics Engineering Department

**COURSE CODE:** 151225399 – 151245399 **COURSE TITLE:** Engineering Mechanics

Semester	Weekly Hours		COURSE			
	Theoretical	Practical	Credits	ECTS	Type	Language
3	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.).						
<b>Math and Basic Science</b>		<b>Electrical Engineering</b> [mark (√) if there is high design content]		<b>General Education</b>		<b>Humanities</b>
3		( )				
<b>Assessment</b>		<b>THEORETICAL-PRACTICAL COURSES</b>			<b>LABORATORY COURSES</b>	
		<b>Type</b>	<b>Number</b>	<b>%</b>	<b>Activity Type</b>	<b>Number</b> <b>%</b>
<b>Midterm</b>		Midterm	1	50	Quiz	
		Quiz			Lab performance	
		Homework			Report	
		Project			Oral exam	
		Other (.....)			Other (.....)	
<b>Final</b>			1	50		
<b>Makeup exam (Oral/Written)</b>		Written				
<b>Prerequisites</b>						
<b>Brief content of the course</b>		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.				
<b>Objectives of the course</b>		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.				
<b>Contribution of the course towards professional education</b>		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.				
<b>Outcomes of the course</b>		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.				
<b>Textbook of the course</b>		STATICS Hibbeler DYNAMICS Hibbeler				
<b>Other reference books</b>		STATICS Beer & Johnston STATICS Meriam DYNAMICS Beer & Johnston				
<b>Required material for the course</b>		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 Electronic 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 complex engineering problems in Electrical and Electronic Engineering and related fields, for this purpose having skills to formulate, select and apply appropriate methods.				X
3	Having skills to apply modern design methods to design a complex system, equipment or product that should work under realistic conditions and constraints and satisfy specific requirements concerning the Electrical and Electronic Engineering.				X
4	Having skills to develop, select and apply modern techniques and tools needed for Electrical and Electronic Engineering applications, skills to use information technology effectively.		X		
5	Skills to design and conduct tests, collect data, analyze results, and interpret data for the experimental investigation of Electrical and Electronic Engineering problems				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.				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, awareness on entrepreneurship, innovation and sustainable development.			X	
11	Information about universal and societal 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):** Nevzat KIRAÇ

**Signature(s):**

**Date:**