



**ESOGU Faculty of Art and Design  
Industrial Design Department  
COURSE INFORMATION FORM**

<b>SEMESTER</b>	SPRING
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<b>COURSE CODE</b>	1411xx	<b>COURSE NAME</b>	MECHANISMS AND DETAIL ANALYSIS
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SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Labratory	Credit	ECTS	Type	Language
4	2	1	0	3	5	COMPULSORY (X) ELECTIVE ( )	Turkish

COURSE CATEGORY				
Basic Education	Design	Natural and Applied Science	Social Science	Art
	X			

ASSESSMENT CRITERIA			
	Evaluation Type	Quantity	%
<b>MID-TERM</b>	1st Mid-Term	1	20
	2nd Mid-Term		
	Quiz		
	Homework		
	Project		
	Report		
	Others (Participation)	1	30
<b>FINAL EXAM</b>		1	50

<b>PREREQUIEITE(S)</b>	
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<b>COURSE DESCRIPTION</b>	<p>Mechanism and Detail Analysis course is designed in two parts. The first part consists of theoretical presentation and simple application assignments about basic structural concepts, simple machines, fittings, bearings, springs, gears, power supplies and motors. In the second part, students will analyze mechanisms and details by separating different industrial products into their components. The main purpose of this course is for students to analyze the theoretical content on mechanism and detail design through products and present the information they produced during the analysis process.</p>
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<b>COURSE OBJECTIVES</b>	<p>The aim of this course;</p> <ul style="list-style-type: none"> <li>• To give information about the mechanical and physical properties of materials.</li> <li>• To give information about basic structure concepts.</li> <li>• To give information about connecting parts, bearings, springs, gears, power supplies and motors used in product and mechanism design.</li> <li>• To enable students to analyze the workings of simple mechanisms used in product design.</li> <li>• To enable students to analyze the details of products produced with different materials and production methods.</li> </ul>
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<b>ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUCATION</b>	This course helps students to design products that can be produced with today's technologies that are suitable for the materials and production methods to be used and have working details.
<b>COURSE OUTCOMES</b>	<p>Students who successfully complete this course;</p> <ul style="list-style-type: none"> <li>• Have knowledge about the mechanical and physical properties of materials</li> <li>• Gains knowledge about basic structure concepts.</li> <li>• Understands the importance of structure in product design and can design products that structurally perform their function.</li> <li>• Learns about simple and complex mechanisms.</li> <li>• Can design new mechanisms based on existing mechanisms.</li> <li>• Can analyze and present the details of products produced with different materials and production methods.</li> <li>• Based on the details of the existing products, they can decide on the appropriate details for their industrial design projects.</li> </ul>
<b>TEXTBOOK</b>	* Roberts, D. (2010). Making Things Move DIY Mechanisms for Inventors, Hobbyists, and Artists. McGraw-Hill.
<b>OTHER REFERENCES</b>	<ul style="list-style-type: none"> <li>* Engel, H. (2004). Strüktür Sistemleri. Tasarım Yayın Grubu.</li> <li>* Ertaş, D. G., &amp; Bayazıt, N. (2009). Endüstri ürünleri tasarımında strüktür. Itüdergisi/a, 8(1), 90–102.</li> <li>* Günal Ertaş, D., &amp; Bayazıt, N. (6-8 Ekim). Strüktür ve malzeme özelliklerinin endüstriyel ürün tasarımına etkisi. 2. Ulusal Yapı Malzemesi Kongresi, İstanbul.</li> <li>* Lesko, J. (2008). Industrial Design: Materials and manufacturing guide. New Jersey: John Wiley &amp; Sons.</li> <li>* MEB. (2012). Mekanizma Yapımı.</li> <li>* MEB. (2014). Basit Mekanizmalar.</li> </ul>
<b>TOOLS AND EQUIPMENTS REQUIRED</b>	Calipers, screwdriver sets and various hand tools for product analysis. Personal computer for use in presentations and assignments.

## WEEKLY COURSE SYLLABUS

WEEK	TOPICS
1	Introduction of the program
2	Basic concepts
3	Understanding the structure: the structure assignment
4	Understanding structure: Structure homework presentations
5	From simple machines to complex mechanisms
6	Fittings, bearings, springs, gears
7	Power supplies and motors
8	MID-TERM
9	Product analysis: Disassembly and photographing
10	Product analysis: Detail drawing and presentations
11	Product analysis: Disassembly and photographing
12	Product analysis: Detail drawing and presentations
13	Product analysis: Disassembly and photographing
14	Product analysis: Detail drawing and presentations
15	Final assignment critiques
16	FINAL EXAM

NO	PROGRAM OUTCOMES	Contribution Level		
		3	2	1
1	Within cultural, historical and artistic contexts the ability to integrate theoretical knowledge about production and consumption mechanisms into the design practice			X
2	The ability to plan the design process, to choose and use appropriate methods and techniques	X		
3	The ability to identify design problems and related sub-problems and to produce creative solutions with a critical and dialectical approach		X	
4	The ability to design in terms of spatial thinking using design principles and elements		X	
5	The ability to make applications in the interaction of aesthetics and function using design elements and means and to evaluate these applications		X	
6	The ability to visualize and present using two and three dimensional design tools	X		
7	The ability to follow and apply technological developments, current design approaches, sustainable production methods, materials and innovations in the field of informatics in design projects		X	
8	The ability to use field knowledge in industrial design projects by considering the needs and interests of the society and target users within the scope of environmental awareness, professional ethics and the laws			X
9	The ability to carry out the design process effectively individually or in a team		X	
10	The ability to take an active role in discipline-specific or interdisciplinary studies at the national and international levels;			X

1: None. 2: Partially contribution. 3: Completely contribution.

**Instructor(s):** Öğr. Gör. Nimet Başar Kesdi

**Signature:**

**Date:**