

**NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION IN TURKEY (NQF-HETR) –
MECHANICAL / MECHATRONICS ENGINEERING UNDERGRADUATE PROGRAM OUTCOMES RELATIONSHIP AT ISIK UNIVERSITY**

[illegible]

[illegible]

5-Aware of the effects of engineering solutions and applications on universal and social dimensions; recognize the subjects of entrepreneurship and innovation and know about the problems of the era.																				★	★	★	★
Field Specific Competences																							
1-Aware of professional and ethical responsibility													★	★									
2-Aware of project management, workplace practices, health of employees, environmental and occupational safety; recognize the legal consequences of engineering practices.											★	★							★				
3- Aware of the effects of engineering solutions and applications on universal and social dimensions; recognize the subjects of entrepreneurship and innovation and know about the problems of the era.																				★	★	★	
	1.1	1.2	2.1	2.2	3.1	3.2	4.1	5.1	5.2	5.3	6.1	6.2	7.1	7.2	8.1	8.2	9.1	9.2	10.1	10.2	11.1	12.1	
	MOC-1		MOC-2		MOC-3		MOC-4	MOC-5			MOC-6		MOC-7		MOC-8		MOC-9		MOC-10		MOC-11		
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PO 13	PO 14	PO 15	PO 16	PO 17	PO 18	PO 19	PO 20	PO 21	PO 22	

(MOC: Addresses the outcomes of MÜDEK (3.1), which is the authorized agency of Turkey for evaluation and accreditation of engineering undergraduate programs)

MECHANICAL / MECHATRONICS ENGINEERING PROGRAM OUTCOMES (MÜDEK 3.1)	
a. BASIC QUALIFICATIONS FOR ENGINEERS	
MOC-1. Engineering Knowledge:	
1.1	The knowledge of mathematics, science, basic engineering, computer calculations, and topics specific to the relevant engineering discipline.
1.2	The ability to apply knowledge of mathematics, science, basic engineering, computer-aided design, and topics specific to the relevant engineering discipline to solve complex engineering problems.
MOC-2. Problem Analysis:	
2.1	The ability to identify, formulate, and analyze complex engineering problems using basic science, mathematics, and engineering knowledge.
2.2	The ability to define, formulate, and analyze complex engineering problems with consideration for the UN Sustainable Development Goals.
MOC-3. Engineering Design:	
3.1	The ability to design creative solutions for complex engineering problems.
3.2	The ability to design complex systems, processes, devices, or products that meet current and future requirements, considering realistic constraints and conditions.
b. TOOLS AND METHODS TO ANALYZE ENGINEERING PROBLEMS	
MOC-4. Use of Techniques and Tools:	
4.1	The ability to select and use appropriate techniques, resources, and modern engineering and information technology tools, including prediction and modeling, for the analysis and solution of complex engineering problems, while being aware of their limitations.

MOC-5. Research and Analysis:	
5.1	The ability to conduct literature research for the examination of complex engineering problems.
5.2	The ability to design experiments for the investigation of complex engineering problems.
5.3	The ability to use research methods, including conducting experiments, collecting data, analyzing results, and interpreting findings, to investigate complex engineering problems.
c. IMPACTS OF ENGINEERING APPLICATIONS	
MOC-6. Global Impact of Engineering Applications:	
6.1	The knowledge about the impact of engineering applications on society, health and safety, the economy, sustainability, and the environment within the framework of the UN Sustainable Development Goals.
6.2	The awareness of the legal consequences of engineering solutions.
MOC-7. Ethical Behavior:	
7.1	Behaving in accordance with engineering professional principles, knowledge of ethical responsibilities.
7.2	The awareness of acting impartially and inclusively in terms of diversity, without discrimination in any matter.
d. INDIVIDUAL AND MANAGERIAL QUALITIES	
MOC-8. Individual and Team Work:	
8.1	The ability to work effectively as a team member or leader, both individually and within teams (face-to-face, remote, or hybrid).
8.2	The ability to work effectively as a team member or leader in multidisciplinary teams (face-to-face, remote, or hybrid).
MOC-9. Verbal and Written Communication:	
9.1	The ability to communicate effectively on technical matters, considering the differences among the target audience (such as education, language, and profession, etc.).
9.2	The ability to communicate effectively in writing on technical matters, considering the differences among the target audience (such as education, language, profession, etc.).
MOC-10. Project Management:	
10.1	The knowledge of business applications such as project management and economic feasibility analysis.
10.2	The awareness of entrepreneurship and innovation.
MOC-11. Life-long Learning:	
11.1	Lifelong learning skills that encompass independent and continuous learning, the ability to adapt to new and emerging technologies, and critical thinking about technological change.
Işık University Mechanical/Mechatronics Engineering Additional Outcome-12. General Knowledge:	
12.1	General knowledge that can help solving problems related to the relevant field of engineering.
MOC: MÜDEK OUTCOME	