

Course Description Form	
Course Code and Name	MM424 Graduation Design Project II
Course Semester	Spring
Catalog Content	The design process. Problem solving and decision making. Modeling and simulation. Use of computers in engineering design and CAD. Project engineering, planning, and management. Design optimization. Economic decision making: cost and reliability. Human and ecological factors in design. Case studies.
Textbook	Engineering Design: A Materials and Processing Approach" by George Ellwood DIETER. Mc Graw Hill Publishing, 2000
Supplementary Textbooks	1. Childs, Peter R. N. <i>Mechanical Design Engineering Handbook</i> . Butterworth-Heinemann, 2014. 2. Budynas, Richard G., and Keith J. Nisbett. <i>Shigley's Mechanical Engineering Design</i> . McGraw-Hill, 2015. 3. Onwubiko, Chinyere Okechi. <i>Introduction to Engineering Design Optimization</i> . Prentice-Hall, 2000.
Credit	7
Prerequisites of the Course (Attendance Requirements)	MM423
Type of the Course	Compulsory
Instruction Language	Turkish
Course Objectives	This course aims to provide students with the competence to design a machine or a mechanical system that performs specific tasks using realistic constraints and using the information they have learned from the courses they have taken during their Mechanical Engineering education.
Course Learning Outcomes	1. Identifies, defines, formulates and solves Mechanical Engineering problems. 2. Applies appropriate analytical methods and modeling techniques to this end. 3. Analyzes a system, system component or process and designs it under realistic constraints to meet the desired requirements. 4. Designs and conducts experiments, collects data, analyzes and interprets results.
Instruction Methods	The mode of delivery of this course is in-class.
Weekly Schedule	1. Design. 2. Design. 3. Design. 4. Design. 5. Design. 6. Design. 7. Design. 8. Design. 9. Design. 10. Design. 11. Design. 12. Evaluation of the results and report writing 13. Evaluation of the results and report writing 14. Preliminary preparation to make a presentation in front of the jury. 15. Preliminary preparation to make a presentation in front of the jury.

<p>Teaching and Learning Methods</p> <p><i>(These are examples. Please fill which activities you use in the course)</i></p>	<p>Reading Activities Internet browsing, library work Designing and implementing materials Report preparing Preparing a Presentation Presentations</p>																																																														
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Contribution Level Between Course Learning Outcomes and Program Outcomes

No	Program Outcomes	1	2	3	4	5
1	Adequate knowledge of subjects specific to mathematics, natural sciences and related engineering disciplines; ability to use theoretical and applied knowledge related to these areas in complex engineering problems.					
2	Ability to identify, define, formulate, and solve complex engineering problems; ability to select and apply appropriate analysis and modeling methods to this end.					x
3	Ability to design a complex system, process, device or product under realistic constraints and conditions to meet specific requirements; ability to apply modern design methods for this purpose.					x
4	Ability to develop, select and use modern techniques and tools required for the analysis and solution of complex problems encountered in engineering practice; ability to use information technologies effectively.					
5	Ability to design and conduct experiments, collect data, analyze and interpret results to investigate complex engineering problems or discipline-specific research topics					x
6	Ability to work effectively in disciplinary and multi-disciplinary teams; ability to work individually.					
7	Ability to communicate effectively in Turkish, both orally and in writing; knowledge of at least one foreign language; the ability to write effective reports and understand written reports, to prepare design and production reports, to deliver effective presentations, to give and receive clear and understandable instructions.					
8	Awareness of the necessity of lifelong learning; the ability to access information, to follow developments in science and technology, and to renew oneself constantly.					
9	Acting in accordance with ethical principles, professional and ethical responsibility; information about standards used in engineering applications.					
10	Information about business life practices such as project management, risk management and change management; awareness of					

		entrepreneurship, innovation; information about sustainable development.					
	11	Knowledge about the universal and social effects of engineering applications on health, environment and safety and the problems of the age reflected in the engineering field; awareness of the legal consequences of engineering solutions.					
The Course's Lecturer(s) and Contact Informations	Academic Staff						