

**School of Engineering and Natural Sciences / Biomedical Engineering (English)**

**2024 - 2025 Academic Year**

**ENGINEERING PROJECT I**

**Syllabus**

<b>Course Description</b>					
<b>Name</b>	<b>Code</b>	<b>Semester</b>	<b>T+A Hour</b>	<b>Credit</b>	<b>ECTS</b>
ENGINEERING PROJECT I	BME4110775	Fall Semester	1+2	2	6
<b>Prerequisites Courses</b>	MATEMATİK II; FİZİK I; FİZİK I LAB; FİZİK II; FİZİK II LAB; AKADEMİK İLETİŞİM BECERİLERİ I; AKADEMİK İLETİŞİM BECERİLERİ II				
<b>Recommended Elective Courses</b>					
<b>Language of Instruction</b>	English				
<b>Course Level</b>	First Cycle (Bachelor's Degree)				
<b>Course Type</b>	Required				
<b>Course Coordinator</b>	Assoc.Prof. Muhammed Fatih TOY				
<b>Name of Lecturer(s)</b>	Prof.Dr. Yasemin YÜKSEL DURMAZ				
<b>Assistant(s)</b>					
<b>Aim</b>	The Capstone Project gives Engineering students the opportunity to put their education into a practical working system that demonstrates how theory is applied. Engineering students, working in small teams, design, build, and present a challenging engineering design project. Challenging projects are proposed and supported by IMU faculty research groups or by industry. Projects typically involve design and implementation in a variety of topics in the field of engineering, including for example biomedical instrumentation, robotics, biomaterials, biological sensors, computational biophysics, image processing systems, and control systems.				
<b>Course Content</b>	This course contains; Choosing a topic for the capstone project, Literature search and designing of the project, Literature search and designing of the project -2, To form a work-timeline plan, Risk analysis for the project, Development of plan B for assessed risks, Determination to success criteria of the project, Semester reporting and presentation, Doing experiment based on prepared project plan, Doing experiment based on prepared project plan-2, Obtain preliminary results, Evaluation of preliminary data and repost the result, Preparation of year end project presentation, Preparation of year end project presentation.				
<b>Course Learning Outcomes</b>		<b>Teaching Methods</b>		<b>Assessment Methods</b>	
Uses the modern tools and techniques for a given project.		10, 14, 17, 2, 21, 3, 5, 6		D, F	
Shows perseverance during difficult moment of project execution.		10, 14, 17, 2, 21, 3, 5, 6		D, F	
Assess the importance of lifelong learning		10, 11, 14, 17, 2, 21, 3, 5, 6		D, F	
Develops oral and written communication skills.		10, 11, 14, 17, 2, 21, 3, 5, 6		D, F	
Takes ethical values into consideration when carrying out a project		10, 11, 14, 17, 2, 21, 3, 5, 6		D, F	
Plans all steps from the design and implementation of a project.		10, 11, 14, 17, 2, 21, 3, 5		D, F	
Analyzes the complete requirements for a given project		10, 14, 17, 2, 21, 3, 5, 6		D, F	
<b>Teaching Methods</b>	10: Discussion Method, 11: Demonstration Method, 14: Self Study Method, 17: Experimental Technique, 2: Project Based Learning Model, 21: Simulation Technique, 3: Problem Based Learning Model, 5: Cooperative Learning, 6: Experiential Learning				
<b>Assessment Methods</b>	D: Oral Exam, F: Project Task				
<b>Lecture Schedule</b>					
<b>Sequence</b>	<b>Topics</b>	<b>Preliminary Preparation</b>			
1	Choosing a topic for the capstone project.	Meeting with academic faculty or industry.			
2	Literature search and designing of the project	Literature search			
3	Literature search and designing of the project -2	Search about literature			
4	To form a work-timeline plan	Identification of the main parts of the project and required time for realization			
5	Risk analysis for the project	Detailed literature search			
6	Development of plan B for assessed risks	Detailed literature search			
7	Determination to success criteria of the project	Detailed literature search			
8	Semester reporting and presentation.	Technical writing and presentation skills to be acquired.			
9	Doing experiment based on prepared project plan	Experimental studies			
10	Doing experiment based on prepared project plan-2	Experimental studies			
11	Obtain preliminary results	Learning the required skills			
12	Evaluation of preliminary data and repost the result	Learning the required program to prepare the report			
13	Preparation of year end project presentation	Going through the provided templates and determine the requirements for good presentation			
14	Preparation of year end project presentation	Rehearsal as a team			
<b>Evaluation Methods</b>		<b>Weight(%)</b>			
Midterm Exam		30			
General Exam		70			
<b>Resources</b>					