



## Undergraduate Research Project (MECE 408) Course Details

Course Name	Course Code	Term	Lecture Hours	Application Hours	Lab Hours	Credit	ECTS
Undergraduate Research Project	MECE 408	Spring	2	2	0	3	6

<b>Pre-requisite Course(s)</b>	
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<b>Course Language</b>	English
<b>Course Type</b>	Compulsory Departmental Courses
<b>Course Level</b>	Bachelor
<b>Mode of Delivery</b>	Face to Face
<b>Learning and Teaching Strategies</b>	
<b>Course Coordinator</b>	

<b>Course Lecturer(s)</b>	
<b>Course Assistants</b>	
<b>Course Objectives</b>	
<b>Course Learning Outcomes</b>	
<b>Course Content</b>	This course involves mainly how to do a research project and how to present. Search of literature survey, constructing the project, research methodology techniques are described in this course. Extensive laboratory work, analytical modeling, design experiences and presentation ability are expected.

## Weekly Subjects and Related Preparation Studies

### Sources

### Evaluation System

<b>Requirements</b>	<b>Number</b>	<b>Percentage of Grade</b>
Attendance/Participation	-	-
Laboratory	-	-
Application	-	-
Field Work	-	-

Special Course Internship	-	-
Quizzes/Studio Critics	-	-
Homework Assignments	-	-
Presentation	-	-
Project	-	-
Seminar	-	-
Midterms Exams/Midterms Jury	-	-
Final Exam/Final Jury	-	-
<b>Total</b>	<b>0</b>	<b>0</b>

<b>Percentage of Semester Work</b>	
<b>Percentage of Final Work</b>	100
<b>Total</b>	100

### Course Category

<b>Core Courses</b>	
<b>Major Area Courses</b>	X
<b>Supportive Courses</b>	
<b>Media and Management Skills Courses</b>	

**Transferable Skill Courses**

**The Relation Between Course Learning Competencies and Program Qualifications**

#	Program Qualifications / Competencies	Level of Contribution				
		1	2	3	4	5
1	Accumulated knowledge on mathematics, science and mechatronics engineering; an ability to apply the theoretical and applied knowledge of mathematics, science and mechatronics engineering to model and analyze mechatronics engineering problems.					X
2	An ability to differentiate, identify, formulate, and solve complex engineering problems; an ability to select and implement proper analysis, modeling and implementation techniques for the identified engineering problems.					X
3	An ability to design a complex system, product, component or process to meet the requirements under realistic constraints and conditions; an ability to apply contemporary design methodologies; an ability to implement effective engineering creativity techniques in mechatronics engineering. (Realistic constraints and conditions may include economics, environment, sustainability, producibility, ethics, human health, social and political problems.)				X	
4	An ability to develop, select and use modern techniques, skills and tools for application of mechatronics engineering and robot technologies; an ability to use information and communications technologies effectively.					X

5	An ability to design experiments, perform experiments, collect and analyze data and assess the results for investigated problems on mechatronics engineering and robot technologies.					X
6	An ability to work effectively on single disciplinary and multi-disciplinary teams; an ability for individual work; ability to communicate and collaborate/cooperate effectively with other disciplines and scientific/engineering domains or working areas, ability to work with other disciplines.					X
7	An ability to express creative and original concepts and ideas effectively in Turkish and English language, oral and written, and technical drawings.					X
8	An ability to reach information on different subjects required by the wide spectrum of applications of mechatronics engineering, criticize, assess and improve the knowledge-base; consciousness on the necessity of improvement and sustainability as a result of life-long learning; monitoring the developments on science and technology; awareness on entrepreneurship, innovative and sustainable development and ability for continuous renovation.					X
9	Consciousness on professional and ethical responsibility, competency on improving professional consciousness and contributing to the improvement of profession itself.			X		
10	A knowledge on the applications at business life such as project management, risk management and change management and competency on planning, managing and leadership activities on the development of capabilities of workers who are under his/her responsibility working around a project.				X	
11	Knowledge about the global, societal and individual effects of mechatronics engineering applications on the human health, environment and security and cultural values and problems of the era; consciousness on these issues; awareness of legal results of engineering solutions.			X		

12	Competency on defining, analyzing and surveying databases and other sources, proposing solutions based on research work and scientific results and communicate and publish numerical and conceptual solutions.					X
13	Consciousness on the environment and social responsibility, competencies on observation, improvement and modify and implementation of projects for the society and social relations and be an individual within the society in such a way that planing, improving or changing the norms with a criticism.	X				

## ECTS/Workload Table

Activities	Number	Duration (Hours)	Total Workload
Course Hours (Including Exam Week: 16 x Total Hours)	16	2	32
Laboratory	14	2	28
Application			
Special Course Internship			
Field Work			
Study Hours Out of Class	14	3	42
Presentation/Seminar Prepration			
Project			
Homework Assignments			
Quizzes/Studio Critics			
Prepration of Midterm Exams/Midterm Jury			

Preparation of Final Exams/Final Jury			
<b>Total Workload</b>			102