



İstanbul Ticaret Üniversitesi
Mühendislik Fakültesi
Elektrik-Elektronik Mühendisliği İngilizce Lisans Programı

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Course		Term	Theory	Application	Credit	ECTS
Name	Code					
Design Project	ENG401	2021-2022 Güz Dönemi	0	4	2	10

Course Duration	2021-09-20 - 2022-01-23
Course Language	İngilizce
Course Type	Zorunlu
Course Level	Lisans
Instructors	Öğr. Gör. Cengiz RİVA Doç. Dr. Serhan YARKAN Doç. Dr. Serhan YARKAN Dr. Öğr. Üyesi Vedat TAVAS Doç. Dr. FATİH ÜSTÜNER Prof. Dr. NEDİM TUTKUN Prof. Dr. MEHMET HAKAN HOCAOĞLU
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Objective of the Course	Course aims at developing skills of students to define, analyze, generate solutions to engineering problems innovatively in a sustainable manner regardless of types of problems.
Course Learning Outcomes (CLO)	<ul style="list-style-type: none"> • Demonstrate self regulation skills. • Communicate effectively. • Working in a team effectively as team leader, and as individual. • Solve engineering problems innovatively, creatively and in sustainable manner. • Produce quality work and engineering designs and communicate results effectively using modern engineering tools. • Demonstrate Innovative learning culture and Lifelog learning skills.
Teaching Methods	Presentation
Course Content (Brief)	Introduction to active learning: teamwork, team dynamics, team norms and communications, effective meetings, quality evaluation. Innovative/creative problem solving skills: problem definition, generating solutions, selection of solutions, heuristics,

	selection strategies, implementation, evaluation. Learning levels and degree of learning. Etique decisions, Work and design notebooks, Reverse engineering and design projects.
Prerequisite(s) / Co-requisites(s)	

Weekly Course Outline

Week 1	Time management, meeting class expectations and taking responsibilities regarding ethical and professional behaviour, demonstrate academic integrity and behavior.
Week 2	Apply techniques of engineering journal, signalling to facilitator, process control and active learning behaviour.
Week 3	Demonstrate the skills for defining and meeting quality expectations of customers.
Week 4	Develop skills for preparing team agenda, defining and following team norms. Develop teaming tools such as Process control.
Week 5	Using tools such as Brain storming, Boggle method, Affinity processes, deployment diagram, multivoting and priority building tools.
Week 6	Problem solving heuristics, potential problem, developing creative/innovative problem solving skills and strategies.
Week 7	Using creative problem solving techniques such as problem identification, present state/desired state diagrams, Dunker diagram, statement/restatement, KT problem analysis, and other techniques in a design project.
Week 8	Osborn's control list, random stimulation, fishbone diagram techniques for innovative idea generation techniques. Using them in design project.
Week 9	Understand situation analysis, problem analysis, decision analysis and potential problem analysis techniques and using them in design project.
Week 10	Gantt chart, deployment diagrams and critical path analysis. Using them in design project.
Week 11	Ethics subjects, Social, Cultural and Ethics subjects to be used in evaluation of design project.
Week 12	Presenting the technical work in written and verbal form by using modern engineering and computer applications.
Week 13	Using Control lists, design notebook, engineering journals.
Week 14	Submission of the projects

Resources	Textbook	1. STRATEGIES FOR CREATIVE PROBLEM SOLVING, Fogler, H.S., LeBlanc, S., E., 2th Ed., 2007, Prentice Hall PTR ISBN 978-0130082794 2. INTRODUCTION TO ENGINEERING DESIGN, McNeill, B. W., Bellamy, L., Burrows, V. A., 2004
	Recommended Books	Other materials
Teaching Equipment		Note slides provided by the lecturer

Evaluation System

Activities during the term	Studiess	Number	Contribution
	Homework	0	0
	Presentation	0	0
	Mid Term Exams	0	0
	Project	0	0
	Laboratory	0	0

Field Study	0	0
Quiz	0	0
Term Project	0	0
Portfolio	1	60
Reports	0	0
Learning Diaries	0	0
Graduate Project	0	0
Seminar	0	0
Others	0	0
Sub Total	1	60
During Term Studies Contribution		60
Final Exam Contribution (>40%)		40
Total		100

Course and Program Learning Outcomes Relationship

Number	Program Learning Outcomes (PLO)	Course Learning Outcomes (CLO)					
		CLO1	CLO2	CLO3	CLO4	CLO5	CLO6
PLO1	Basic sciences and Electrical - Electronic Engineering in the field of theoretical and practical knowledge sufficient level wins.	0	0	0	0	0	0
PLO2	Theoretical and practical knowledge gained in the field of Electrical and Electronics Engineering uses.	0	0	0	0	0	5
PLO3	Experiments in the field of Electrical and Electronics Engineering designs, executes, analyzes the data and interpretations.	0	0	0	5	0	0
PLO4	For the problems it encounters in the field of Electrical and Electronics Engineering Selects and applies appropriate analytical methods and modeling techniques.	0	0	0	4	0	0
PLO5	A system that is believed to be necessary in the field of Electrical and Electronics Engineering, design components or processes.	0	5	0	0	0	0
PLO6	Makes an individual or team work within the discipline and interdisciplinary.	0	0	0	5	0	5
PLO7	Makes access to information and research resource for this purpose, use databases and other information resources.	0	0	0	5	0	0
PLO8	Lifelong learning is a conscious aware of this requirement.	5	0	0	0	0	0
PLO9	Required by the technological innovations of Electrical and Electronics Engineering will follow, predicts that innovations in technology that will be needed, and provides the necessary contributions.	5	0	5	0	0	0
PLO10	At least one foreign language oral and written communication skills, wins the best use of this language.	0	0	0	5	5	5
PLO11	Professional and scientific achievements of learned knowledge and skills in professional communication have much to transfer them to others.	0	0	0	0	5	0

PLO12	Innovative studies in the field of Electrical and Electronics Engineering, field applications, business and human safety, environmental sensitivity issues have the highest awareness and consciousness.	0	0	0	0	0	5
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ECTS- Work Load Table

Activities	Week	Time (hour)	Total Work Load
Course Duration	0	0	0
Out of Classroom Studies Duration	0	0	0
Homework	0	0	0
Presentation	1	20	20
Mid Term Exam	0	0	0
Project	0	0	0
Laboratory	0	0	0
Field Study	0	0	0
Final Exam	0	0	0
Quiz	0	0	0
Term Project	0	0	0
Portfolio Study	1	60	60
Report	2	50	100
Learning Diaries	0	0	0
Graduation Project	1	40	40
Seminar	0	0	0
Other	0	0	0
Total Work Load			
Total Work Load / 25			
Course ECTS			10

Contribution of the Course to the Field / Vocational Education

Approval	Head of The Department	