



T.C. ESKİŞEHİR OSMANGAZİ ÜNİVERSİTESİ
MÜHENDİSLİK MİMARLIK FAKÜLTESİ
MAKİNE MÜHENDİSLİĞİ BÖLÜMÜ

DERS BİLGİ FORMU

DÖNEM	Güz
--------------	-----

COURSE CODE	COURSE NAME	SEMESTER	CREDITS		
151817486	THERMAL ANALYSIS	7-8	T	L	ECTS*
151837486			3		

INSTRUCTOR NAME	LANGUAGE	COURSE TYPE**		
Prof. Dr. L. Berrin Erbay	Turkish	CORE		ELECTIVE
		X		
		Technical	Design	Other
		X		

COURSE EVALUATION				
	ACTIVITY	Number	Percentage (%)	
MID-TERM	Written exam			
	Quiz			
	Homework			
	Project	2	30+30	
	Laboratory			
	Other (.....)			
FINAL	Oral exam			
	Homework + Oral exam			
	Project + Oral exam	1	40	
	Written exam			
	Other (.....)			
MAKE-UP EXAM**	Oral	Written	Oral and Written	Multiple Choice
	X			

COURSE CONTENT	Special subjects including heat transfer, thermodynamics and fluid mechanics, investigation of the energy systems in practice, special topics for future energy systems, insulation of a building for energy savings, insulation for heat -water-sound, application on a real project.
COURSE OBJECTIVES	Combining the knowledge of heat transfer, thermodynamics and fluid mechanics, Understanding the fundamentals and the details of future energy sources and energy conversion systems, studying the energy saving and learning insulation technique for buildings
COURSE AIMS	Following the future energy sources and energy conversion systems easily, adapting new developments of the methods of energy savings to the all engineering systems for optimization.
TEXTBOOK(S)	ÇENGEL, Yunus A. and TURNER Robert H., "Fundamentals of Thermal-Fluid Sciences" 1 st Ed. McGraw-Hill Book Comp., 2001
REFERENCES	Proceedings of Energy Conferences, Catalogs, Standards, TS825 Insulation Law, CDs for insulation projects prepared by companies like İzocam and Demirdöküm

* ECTS (European Credit Transfer System).

** Place (X) as appropriate.

WEEK	SUBJECTS / TOPICS
1	Introduction to thermal analysis
2	Determination of subjects and teams
3	Passive cooling systems and Thorium molten salt reactors
4	Unmanned energy systems, heat pipes
5	Developed refrigeration and refrigerators, Design and optimization of thermal systems
6	Convective heat transfer in curved channels
7	Convective heat transfer in Porous Medium
8	
9	MID TERM
10	Convective heat transfer in Porous Medium
11	“CASE study” Insulation
12	insulation of heat
13	insulation of heat – fire
14	Water insulation
15	Sound insulation
16	Insulation project of a building

OUTCOMES				
S/N	At the end of the course, students will be able to:	Never	Few	Many
1	apply knowledge of mathematics, science, and engineering			X
2	design and conduct experiments as well as to analyze and interpret data		X	
3	design a system, component, or process to meet desired needs		X	
4	function on multi-disciplinary teams			X
5	identify, formulate, and solve engineering problems			X
6	get an understanding of professional and ethical responsibility			X
7	communicate effectively			X
8	understand the broad education necessary to understand the impact of engineering solutions in a global and societal context		X	
9	get a recognition of the need for, and an ability to engage in life-long learning			X
10	gain a knowledge of contemporary issues			X
11	use techniques, skills, and modern engineering tools necessary for engineering practice			X