

MM 539 Introduction To Fluidized Bed Combustion				MECHANICAL ENGINEERING DEPARTMENT					
Semester	Methods of Education							Credits	
	Lecture	Recit.	Lab.	Project/Field Study	Homework	Other	Total	Credit	ECTS credit
1,2	30	12				146	188	3	7.5
Language	Turkish								
Compulsory / Elective	Optional								
Prerequisites	-								
Course Contents	Principles of fluidization, bubbling and circulating fluidized beds, heat transfer in fluidized bed, combustion in fluidized bed. General approach in fluidized bed type boilers. New developments in fluidized bed technology. Problems of fluidized bed combustors.								
Course Objectives	To provide knowledge about design of fluidized bed systems by explaining the principles and the main parts of the system								
Learning Outcomes and Competences	To recognize the fluidized bed systems and to comprehend the boilers with this technology used to produce energy.								
Textbook and /or Reference	1. Fluidization Engineering, D.Kunii and O.Levenspiel, Wiley, New York, ISBN0-88275-542-0, 1983 2. Circulating Fluidized Bed Boilers, P. Basu and S.A.Fraser, Butterworth-Heinemann,USA, ISBN 0-7506-9226-X, 1991								
Assessment Criteria					If any, mark as (X)		Percentage (%)		
	Midterm Exams				X		30		
	Quizzes								
	Homeworks				X		20		
	Projects								
	Term Paper								
	Laboratory Work								
	Other								
	Final Exam				X		50		
Instructors	Assist. Prof. Hüseyin TOPAL								
Week	Subject								
1	Principles of Fluidization.								
2	Types of the Fluidization.								
3	Hydrodynamics of Fluidization.								
4	Regimes of Fluidization.								
5	Bubbling Beds.								
6	Fast and Circulating Beds.								
7	Combustion Process in Fluidized Beds.								
8	Emission Control in Fluidized Bed Combustors.								
9	Heat Transfer.								
10	Design of Fluidized Bed Boilers (Combustion Chamber)								
11	Design of Fluidized Bed Boilers (Heat Transfer Areas)								
12	Design of Fluidized Bed Boilers (Combustion Control)								
13	Problems of Fluidized Beds.								
14	Problems of Fluidized Beds.								