

MM 476 Air Conditioning				DEPARTMENT of MECHANICAL ENGINEERING					
Semester	Methods of Education							Credits	
	Lecture	Recit.	Lab.	Project/Field Study	Homework	Other	Total	Credit	ECTS Credit
7,8	42				25	8	75	3	3.0
Language	Turkish								
Compulsory / Elective	Elective								
Prerequisites	None								
Course Contents	1. The basics of air conditioning 2. Heating, cooling, humidifying, dehumidifying and psychometric diagram 3. Cooling load 4. Air duct design 5. Winter air conditioning systems 6. Summer air conditioning systems 7. Cooling towers 8. Mass transfer								
Course Objectives	Students will learn how to determine the psychometric properties of humid air, air conditioning processes, the cooling load and the basic principles of mass transfer. They will also have the ability of designing an air conditioning system.								
Learning Outcomes and Competences	Students will 1. learn how to determine the psychometric properties of humid air and also heating, cooling, humidifying and dehumidifying processes of humid air. 2. understand how to calculate the cooling and heating load and humidification. 3. desing an air conditioning system. 4. design a air ducts. 5. learn the mass transfer calculations. 6. understand how a cooling tower works.								
Textbook and /or Reference	Yamankaradeniz R., Horuz İ., Coşkun S., Kaynaklı Ö., Yamankaradeniz N. İklimlendirme Esasları ve Uygulamaları. Dora Yayıncılık, 2. Baskı, 2011.								
Assessment Criteria					If any, mark as (x)			Percentage (%)	
	Midterm Exams				X			30	
	Quizzes				-			-	
	Homeworks				-			-	
	Projects				X			20	
	Term Paper				-			-	
	Laboratory Work				-			-	
	Other				-			-	
	Final Exam				X			50	
Instructors	Prof. Dr. İlhami HORUZ								
Week	Subject								
1	Introduction and the basic principles of air conditioning								
2	Psychometric diagram and the psychometric properties of humid air								
3	Psychometric processes (the heating and cooling of air)								
4	Psychometric processes (the humidifying and dehumidifying processes of humid air)								
5	Winter air conditioning systems								
6	Summer air conditioning systems								
7	The steps of air conditioning project								
8	Cooling load calculations								
9	Air duct design								
10	Midterm								
11	The air conditioning project calculations								
12	Mass transfer basics								
13	Mass transfer								
14	Cooling towers								