FUNDAMENTALS OF AIR CONDITIONING

1	Course Title:	FUNDAMENTALS OF AIR CONDITIONING
2	Course Code:	MAK4202
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	4
6	Semester:	8
7	ECTS Credits Allocated:	4.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. RECEP YAMANKARADENİZ
15	Course Lecturers:	Prof.Dr. İlhami Horuz, Doç.Dr. Ömer Kaynaklı
16	Contact information of the Course Coordinator:	recep@uludag.edu.tr, 0224 2941969 Uludağ Üniversitesi Mühendislik – Mimarlık Fakültesi Makine Mühendisliği Bölümü 16059 Görükle/BURSA
17	Website:	
18	Objective of the Course:	Calculate the psychrometric properties, understanding the air-conditioning processes, and basic principles of mass transfer.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	Learning thermodynamic properties of air conditioning.
	2	Calculating heating, cooling humidifying capacities
	3	Designing the air conditioning project
	4	Calculating mass transfer.
	5	Learning main parameters of the cooling tower
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21 Course Content:

Course Content:

Week	Theoretical	Practice
1	Basic concepts of air conditioning	
2	Psychrometric properties and psychrometric chart	
3	Psychrometric processes of air (Heating and cooling)	
4	Psychrometric processes of air (humidification and dehumidification)	

5	Winter air conditioning unit	
6	Summer air conditioning unit	
7	Introduction to project	
8	Calculate of cooling load	
9	Calculate of ventilating duct	
10	Repeating courses and midterm exam	
11	Designing project	
12	Mass Transfer	
13	Mass transfer applications, Cooling towers	
14	Cooling tower application	

22	Textbooks, References and/or Other Materials:	1- Yamankaradeniz R., Horuz İ., Coşkun S., Kaynaklı Ö., Yamankaradeniz N. Fundamentals of Air Conditioning and Applications. Dora Publishing, 2008. 2- Yamankaradeniz, R. Fundamentals of Engineering Thermodynamivs, Volume 1-2, Nobel Publishing, 2004.
23	Assesment	

TERM LEARNING ACTIVITIES	**NUMBER**	**WEIGHT**
Midterm Exam	1	25.00
Quiz	0	0.00
Home work-project	1	25.00
Contribution of Term (Year) Learning Activities to Success Grade		50.00
Contribution of Final Exam to Success Grade		50.00
Total		100.00

Measurement and Evaluation Techniques Used in the Course			
Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	3.00	42.00
Homeworks	1	40.00	40.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	10.00	10.00
Others	0	0.00	0.00
Final Exams	1	15.00	15.00
Total Work Load			149.00
Total work load/ 30 hr			4.97
ECTS Credit of the Course			4.00

25	**CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS**															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	3	4	0	0	0	4	0	4	0	0
ÖK4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ÖK5	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications					
Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**