

# HEAT EXCHANGERS

1	Course Title:	HEAT EXCHANGERS	
2	Course Code:	MAK4020	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	8	
7	ECTS Credits Allocated:	3.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	-	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. Akın Burak Etemoğlu	
15	Course Lecturers:	-	
16	Contact information of the Course Coordinator:	Prof.Dr. Akın B. Etemoğlu e-posta: aetem@uludag.edu.tr telefon: 224 2941976 adres: BUÜMMF, Makine Müh. Blm.	
17	Website:		
18	Objective of the Course:	Upon completion, the students should be able to explain the role of the heat exchanger in industry, be able to identify the parts of the exchanger and heat exchanger performance indicators, and be able to calculate the efficiency and performance parameters of heat exchangers.	
19	Contribution of the Course to Professional Development:	Ability to identify, formulate, and solve complex engineering problems and select and apply proper analysis and modeling methods under realistic constraints and conditions.	
20	Learning Outcomes:		
		1	Use concepts and laws governing heat transfer to heat exchange.
		2	Identify and classify the heat exchangers.
		3	Design and analyse the heat exchangers by using LMTD and epsilon-NTU methods.
		4	Calculate pressure drop and pumping power of the heat exchangers.
		5	Determine and evaluate various alternatives for heat exchangers applications.
		6	
		7	
		8	
		9	
		10	
21	Course Content:		
		<b>Course Content:</b>	
Week	Theoretical	Practice	
1	Principles of heat transfer		

2	Fundamentals of heat exchangers	
3	Classification of heat exchangers, tubular heat exchangers	
4	Plate type heat exchangers	
5	Flow arrangements of heat exchangers	
6	LMTD method	
7	Applications of LMTD	
8	Repeating courses and midterm exam	
9	epsilon-NTU method	
10	Application of epsilon-NTU method	
11	Pressure drop in heat exchangers	
12	Heat exchangers design procedure	
13	Mechanical design of heat exchangers	
14	Manufacturing consideration of heat exchangers	

23	Assesment
----	-----------

Total work load/ 30 hr			3.00
ECTS Credit of the Course			3.00

ÖK5	4	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives    PQ: Program Qualifications																
Contrib ution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			