

AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title Heating Pomp Pr		Practices-I							
Course Code		AET253		Couse Level		Short Cycle (Associate's Degree)			
ECTS Credit	4	Workload	100 <i>(Hours)</i>	Theory	3	Practice	1	Laboratory	0
Objectives of the Course		Obtaining and applying information about heat pumps and their calculations.							
Course Content		Theory of heat pumps, classification, parameters affecting the heat pump, use in buildings and industry, heat pump housing applications, heat for refrigerators.							
Work Placement		N/A							
Planned Learning Activities and Teaching Me		Methods	Explanat	ion (Presenta	tion), Case Stu	ıdy			
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)	
Midterm Examination	1	40	
Final Examination	1	70	

Recommended or Required Reading

1 J. F. Kredier and A. Rabl, (1994) Heating and Cooling of Building-Design for efficiency, McGraw-Hill

Week	Neekly Detailed Course Contents					
1	Theoretical	Introduction to heat pumps				
2	Theoretical	Thermodynamic cycles and analysis				
3	Theoretical	Types of heat pumps				
4	Theoretical	Heat pumps elements				
5	Theoretical	Air to Air Heat Pumps				
6	Theoretical	Ground source heat pumps				
7	Theoretical	Ground source heat pumps				
8	Theoretical	Exam-1				
9	Theoretical	Water source heat pumps				
10	Theoretical	Application examples and sample projects				
11	Theoretical	Refrigerants used in heat pumps				
12	Theoretical	Criteria and economic analysis in system selection				
13	Theoretical	Comparison of heat pumps with other systems, system selection and operation principles				
14	Theoretical	Recent developments in heat pumps				

Workload Calculation

Activity	Quantity	Preparation		Duration		Total Workload
Lecture - Theory	14		1	3		56
Lecture - Practice	14		0	1		14
Assignment	4		2	0		8
Midterm Examination	1		10	1		11
Final Examination	1		10	1		11
Total Workload (Hours) 100						100
	[Total Workload (Hours) / 25*] = ECTS 4					4

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

- 1 Understand the basic concepts of air conditioning and cooling.
- 2 Reads projects related to air conditioning and cooling systems.



3	Recognize and connect electrical control and automatic control elements and circuits used in air conditioning and cooling systems
4	Dimensioning and installation of duct system for ventilation and ducted air conditioning systems.
5	Gains the ability to prepare, present, and participate in scientific research on related topics.

Programme Outcomes (Alternative Energy Sources Technology)

1	Carry out installing work
2	Do mechanical drawing
3	Do pipe welding
4	Do basic electricity works
5	Do Computer assisted design
6	Install solar energy hot water preparation system.
7	Do measurement and calculations practices.
8	Do basic practices of geothermal energy.
9	Install control and automation system.
10	Install domestic water heating system with solar energy.
11	Generate electricity with solar energy
12	Generate electricity with wind power
13	Do geothermal energy practices
14	Install domestic cooling system
15	Do heating pump practices
16	Manage a business
17	SET UP A WORKPLACE/ BUSINESS (pre-requisite)
18	OBEY VOCATIONAL ETHICAL VALUES
19	RESEARCH AND EVALUA0TION/OBSERVATION
20	SELFIMPROVEMENT WITH USING INFORMATION FACILITIES
21	Knows the effects of all energy sources on the environment.
22	Can communicate in a foreign language
23	Ability to use the methods and techniques of career planning and discussing the effects of character traits on career preferences.
24	Ability to plan a career in their own profession.
25	To produce solutions by using the laws of physics in the use or design of tools-machines or devices related to the profession.
26	To provide them with knowledge about substance use and addiction problem and prevention methods.

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5
P14	3	4	4	3	4
P15	5	5	5	5	5

