



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Renewable Energy Resources Laboratory							
Course Code		AEK224		Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	6	Workload	150 (<i>Hours</i>)	Theory	0	Practice	2	Laboratory	4
Objectives of the Course		Alternative Energy Resources Technology program students to make practical applications in the laboratory environment.							
Course Content		In the Renewable Energy Systems Laboratory, studies are being carried out for biofuels, wind and solar energy, which are widely applied in this field. The laboratory provides the opportunity to apply the theoretical knowledge transferred within the scope of associate degree courses and to make experimental observations to the students.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Experiment, Demonstration					
Name of Lecturer(s)									

Assessment Methods and Criteria

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

Recommended or Required Reading

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Week	Weekly Detailed Course Contents	
1	Laboratory	Introduction to the course
2	Laboratory	Measurability of wind energy and speed dependent energy calculations
3	Laboratory	Wind turbine installation and operation
4	Laboratory	Wind energy applications in lighting systems
5	Laboratory	Production and calculations of photovoltaic cells
6	Laboratory	Energy types and converter systems obtained from photovoltaic cells
7	Laboratory	Use of energy from photovoltaic cells in electrical devices
8	Laboratory	Fotovoltaik hücrelerden elde edilen enerjinin elektrikli cihazlarda kullanımı
9	Laboratory	Types and sources of bioenergy
10	Laboratory	Biogas production from vegetable waste
11	Laboratory	Production of various biofuels from forest products
12	Laboratory	Production of fatty acids from vegetable fuels
13	Laboratory	Production of fatty acid esters from vegetable oils
14	Laboratory	Compensation experiments
15	Laboratory	Compensation experiments
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Practice	14	1	4	70
Assignment	5	2	2	20
Project	2	4	4	16
Laboratory	10	1	2	30
Midterm Examination	1	5	2	7



Final Examination	1	5	2	7
Total Workload (Hours)				150
[Total Workload (Hours) / 25*] = ECTS				6
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	
2	
3	
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Programme Outcomes (Alternative Energy Sources Technology)

1	To have knowledge about basic science and technology.
2	To have knowledge about basic energy and alternative energy sources.
3	To have knowledge about basic electrical and electronic laws.
4	To have knowledge about the installation and operation of energy facilities.
5	Learning the methods of recycling of waste and use of energy.
6	To have experience in energy generation and project design.

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

	L1	L2	L3	L4	L5	L6	L7
P1	5	5	5	4	3	3	4
P2	5	5	5	5	5	5	5
P3	5	3	5	5	5	4	3
P4	1	3	3	3	4	1	5
P5	3	3	3	3	3	5	5
P6	4	4	4	4	3	3	3

