



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Energy Production Using Biomass							
Course Code		AEK206		Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	3	Workload	71 ( <i>Hours</i> )	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		Students are expected to learn biomass concept, utility techniques, energy generation and usage.							
Course Content		Biomass concept, energy generation methods, utility areas, power facilities, and sustainability concepts.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Case Study, Individual Study					
Name of Lecturer(s)		Assoc. Prof. Hakan Can SÖYLEYİCİ							

### Assessment Methods and Criteria

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

### Recommended or Required Reading

1	Alternatif Enerji Kaynakları Yazar: Mustafa Acaroğlu
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Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to biomass concept
2	Theoretical	Biomass as source of energy, biomass raw materials and sustainability
3	Theoretical	Photosynthesis of biomass and properties
4	Theoretical	Plant biomass: Energy plants, forests, algae production systems
5	Theoretical	Waste biomass and reusability
6	Theoretical	Physical conversion processes
7	Theoretical	Thermal conversion: Burning
8	Theoretical	Thermal conversion: Pyrolysis and liquidification
9	Theoretical	Thermal conversion: Pyrolysis and liquidification
10	Theoretical	Thermal conversion: gasification
11	Theoretical	Usage examples
12	Theoretical	Usage samples
13	Theoretical	Biomass policies and marketing
14	Theoretical	Biomass and sustainability
15	Theoretical	Biomass and sustainability
16	Final Exam	Final exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	1	1	26
Assignment	5	1	2	15
Project	4	3	1	16
Midterm Examination	1	6	1	7
Final Examination	1	6	1	7
Total Workload (Hours)				71
[Total Workload (Hours) / 25*] = ECTS				3

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	Calculates biomass energy potential.
2	Designs biomass production plant.



3	Estimates biomass reserve capacity.
4	
5	

**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
P1	5	5	5	5	5
P2	4	4	4	4	4
P4		5	5	5	5
P6		5	5	5	5

