



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Energy Producing From Living Things (bioenergy)							
Course Code		ÇS011		Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	3	Workload	73 (Hours)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course		Providing information on solid (compost, fertilizer, etc.), liquid (biodiesel, bioethanol, etc.), gaseous (biogas, syngaz, leangaz, poor gas, etc.) fuel and electricity production facilities (biogas plant, incineration, pyrolysis, gasification plant, etc.) from biomass products and biological agricultural products such as domestic, animal, forester and agricultural wastes.							
Course Content		What are the definitions and types of bioenergy. Bioenergy products and processes.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Demonstration, Discussion, Case Study, Individual Study					
Name of Lecturer(s)		Ins. Adem KESKİN, Lec. Sevil ÖZCAN							

Assessment Methods and Criteria

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

Recommended or Required Reading

1	Mustafa ACAROĞLU, Alternative energy resources. Nobel Publishing
2	Nedim SARAÇOĞLU, Global Climate Change, Bioenergy and Energy Forestry. Elif Publishing
3	http://www.emo.org.tr/ekler/bee909821a8c133_ek.pdf

Week	Weekly Detailed Course Contents	
1	Theoretical	What is Bioenergy? What are Bioenergy Types?
2	Theoretical	What is biogas, what products, how to obtain?
3	Theoretical	Use of vegetable, animal and municipal wastes in obtaining biogas.
4	Theoretical	Energy recovery from wastes and treatment plants.
5	Theoretical	Fermentation technologies and their simple applications.
6	Theoretical	What is biomass energy, what products, how to obtain?
7	Theoretical	Use of agricultural and industrial wastes as biomass.
8	Intermediate Exam	Midterm
9	Theoretical	Use of domestic and forest waste as biomass.
10	Theoretical	Thermal technologies.
11	Theoretical	Compost technologies.
12	Theoretical	Pellet-briquette technologies.
13	Theoretical	Biodiesel and bioethanol production.
14	Theoretical	Laboratory application
15	Theoretical	Laboratory application
16	Final Exam	final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Individual Work	3	5	1	18
Midterm Examination	1	10	1	11
Final Examination	1	15	1	16
Total Workload (Hours)				73
[Total Workload (Hours) / 25*] = ECTS				3

*25 hour workload is accepted as 1 ECTS



Learning Outcomes

1	Know bioenergy products.
2	Know the types of Bio Energy.
3	Knows the processes of obtaining bioenergy.
4	Know the use of plant wastes in obtaining energy.
5	Knows the processes of electricity production from biological products in solid, liquid and gaseous form.

Programme Outcomes (Dialysis)

1	To be able to comprehend the duties and responsibility of dialysis technicians. To be able to work in a team with members of other health professions.
2	To be able to acquire a general knowledge of human anatomy, physiology and biochemistry
3	To be able to gain knowledge of blood-borne infectious diseases, especially infectious diseases such as hepatitis and universal prevention methods
4	To be able to have knowledge of blood-borne infectious diseases, especially infectious diseases such as hepatitis and universal prevention methods
5	To be able to recognize hemodialysis machine, and have knowledge and skills will be used it during operation of dialysis
6	To be able to have the knowledge of application on peritoneal dialysis and skills be able to train patient on this.
7	To be able to acquire dialysate characteristics, have necessary skills on preparation and application
8	To be able to gain the knowledge and skills on the basic principles of water treatment, application methods, and control of purified water as a level of practitioner
9	To be able to comprehend the principles of patient care, complications during dialysis operation what patients may be encounter and perform necessary knowledge and skills to take necessary measures to protect patient from these complications.
10	To be able to gain knowledge and equipment related to educating on problems that the long-term dialysis patients may have.
11	To be able to understand periodic examinations during the follow up dialysis patients and recognize pathologies in the early period, and have the knowledge and skills to take necessary precautions in time
12	To be able to have the knowledge of the dialysis patients, physiological, social and psychological problems, and perform necessary support skills on these issues for the patient
13	In general to be able to comprehend the knowledge of, drugs, dosage, side effects, and toxic effects, routes of administration of drugs and drug use in patients with chronic renal failure
14	To be able to acquire a high level knowledge of fluid and electrolyte problems with general issues nephrology, acid-base balance disorder, nephrology and urology kidney disease, chronic and acute renal failure.
15	To be able to comprehend the methods of diagnosis and treatment of diseases of the system, and have knowledge of fighting and protecting from especially problems that can be seen in dialysis patients as level of practitioner and getting patient compliance.
16	To be able to have knowledge of statistics and research methods as a level of following the developments, monitoring and interpreting scientific publications.
17	To be able to gain the knowledge of foreign language as a level of communicating and following developments.
18	To be able to be willing to self-improvement as an individual committed to the principles and reforms of Atatürk and keeping on the some of the rules of social life, customs and traditions, depending on the interests of the country on their own interests as a member of society,

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	1	1	1	1	1
P2	3	3	3	3	3
P3	2	2	2	2	2
P4	1	1	1	1	1
P5	1	1	1	1	1
P6	1	1	1	1	1
P7	1	1	1	1	1
P8	3	3	5	3	5
P9	1	1	1	1	1
P10	1	1	1	1	1
P11	1	1	1	1	1
P12	1	1	1	1	1
P13	1	1	1	1	1
P14	1	1	1	1	1
P15	1	1	1	1	1



P16	4	4	4	4	4
P17	4	4	4	4	4
P18	4	4	4	4	4

