



**AYDIN ADNAN MENDERES UNIVERSITY
KOÇARLI VOCATIONAL SCHOOL
MECHANICAL AND METAL TECHNOLOGY
AGRICULTURAL MACHINERY
COURSE INFORMATION FORM**

Course Title	Energy Science								
Course Code	TAM126			Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	2	Workload	50 (Hours)	Theory	2	Practice	0	Laboratory	0
Objectives of the Course	The aim of this course is to provide the understanding of energy, energy balance in agriculture, usage of renewable energy sources and energy savings in agriculture								
Course Content	Basic concepts of energy, classification of energy, importance of energy in agriculture, energy usage in agriculture, renewable energy sources used in agriculture.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Individual Study, Problem Solving								
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Hepbaşlı, A., 2010 Enerji Verimliliği ve Yönetim Sistemi Yaklaşımlar ve Uygulamalar, Schneider Electric Enerji Verimliliği Serisi: 1 ISBN: 978-9944-5084-6-9 İstanbul.
2	Yavuzcan, G., 1994. Enerji Teknolojisi. Ankara Üniversitesi Ziraat Fakültesi Publications Number: 1324. ISBN: 975-482-171-2, Ankara.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to the class, definitions and general information about lesson
	Preparation Work	Examining course contents
2	Theoretical	Work, power, energy, definition and units
	Preparation Work	Literature review about the subject
3	Theoretical	Energy sources and classification
	Preparation Work	Literature review about the subject
4	Theoretical	Fossil fuels
	Preparation Work	Literature review about the subject
5	Theoretical	Energy in agriculture, renewable energy sources used in agriculture
	Preparation Work	Literature review about the subject
6	Theoretical	Solar energy and usage possibilities in agriculture
	Preparation Work	Literature review about the subject
7	Theoretical	Solar energy and usage possibilities in agriculture
	Preparation Work	Literature review about the subject
8	Intermediate Exam	Midterm exam
9	Theoretical	Hydraulic energy and usage possibilities in agriculture
	Preparation Work	Literature review about the subject
10	Theoretical	Wind energy and usage possibilities in agriculture
	Preparation Work	Literature review about the subject
11	Theoretical	Geothermal energy and usage in agriculture
	Preparation Work	Literature review about the subject
12	Theoretical	Energy production from agricultural residues and usage methods
	Preparation Work	Literature review about the subject
13	Theoretical	Agricultural electrification
	Preparation Work	Literature review about the subject
14	Theoretical	Energy balance in agricultural production
	Preparation Work	Literature review about the subject



15	Theoretical	Energy savings methods in agriculture
	Preparation Work	Literature review about the subject
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Assignment	1	4	0	4
Midterm Examination	1	7	1	8
Final Examination	1	9	1	10
Total Workload (Hours)				50
[Total Workload (Hours) / 25*] = ECTS				2

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to understand energy information, definition and classification of energy,
2	To be able to understand energy usage in agriculture.
3	To be able to understand the usage of renewable energy sources in agriculture
4	To be able to understand energy production from agricultural residues and usage methods
5	To be able to understand energy saving methods in agriculture

Programme Outcomes (Agricultural Machinery)

1	To be able to comprehend social, cultural and societal responsibility and keep up with national and international up contemporary issues and developments.
2	To be able to be bounded to the Atatürk nationalism, adopted to the national, ethic, spiritual and cultural value of the Turkish Nation, opened to the universal and modern development, adopted the richness, deep seated and productive properties of the Turkish language, having language sympathy and awareness, having reading pleasure and habit and having sufficient foreign language for their vocational necessities, In the directions of the Atatürk Principles and Revolutions,
3	To be able to recognize the basic computer hardware and operating systems , knowledge of internet usage being able to prepare documents, electronic tables and presentation by using office programs.
4	To be able to be aware of ethic responsibility and vocational profession and to have consciousness of a lifelong learning concept
5	To be able to know current vocational issues and to have skill to define and interpret them.
6	To be able to be aware of the universal and social dimensional effects in engineering solutions, and to be able to have knowledge about entrepreneurship and newfangledness.
7	To recognize the materials which used for preparation of agricultural machinery and have skill for the choosing the appropriate material.
8	To be able to acquire the skill of using the necessary tools and equipments which are used in the production and maintenance of agricultural machinery.
9	To be able to prepare the agricultural tools and machineries, to determine the breakdowns and to do periodic maintenance and repairs.
10	To be able to comprehend the picture of the agricultural tools and machinery and their fabrication , and have the skill to draw them via computer.
11	To be able to assemble and to combine machinery pieces by using demountable and nondetachable junction methods.
12	To be able to have the skill of resistance calculations of the agricultural tool and machinery on computer.
13	To be able to test and control the suitability of new machines and mechanic equipment to the definite standarts and technical properties.
14	To be able to have general knowledge of agricultural production.
15	To be able to have knowledge of basic sciences.

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

	L1	L3	L4	L5
P4		4	4	4
P5		3	3	3
P15	4			

