



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

Course Title	Fertilizers and Fertilization								
Course Code	TAM122			Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	3	Workload	75 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course	The objectives of the course are to give information about the concepts of fertilizer (chemical, organic) and fertilization. Additionally fertilizer types, their product methods, their raw materials used in production processes, calculations of applied fertilizer amounts and application methods are also subjects of the course.								
Course Content	Introduction to fertilizer and fertilization concepts. Classification of organiz and chemical fertilizers. Production methods of fertilizers. Fertilization methods. Calculation of the amount of fertilizers applied.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Experiment, Demonstration, Discussion, Case Study, 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	Gübreler ve Gübreleme Tekniği. Burhan Kacar, Vahap Katkat. Vıpaş A.Ş., 1999. ISBN. 975-564-084-3.
2	Gübre Analizleri, Burhan Kacar, Cihat Kütük. Nobel Yayıncılık. 2010. ISBN. 978-605-395-306-7.
3	Bitki Fizyolojisi. Burhan Kacar, Vahap Katkat, Şule Öztürk. 2002. Nobel Yayıncılık. ISBN. 978-975-591-833-4.
4	Bitki Besleme. Burhan Kacar, Vahap Katkat. 1998. Vıpaş Yayınları. ISBN: 975-564-068-1.

Week	Weekly Detailed Course Contents	
1	Theoretical	Description of fertilizer and fertilization concepts. Effect of plantal factors affecting fertilization.
	Practice	land Applications
	Preparation Work	Collection of material on the subject
2	Theoretical	Effects of environmental factors on fertilization.
	Practice	land Applications
	Preparation Work	Collection of material on the subject
3	Theoretical	Production techniques of manure. Its maturation and storage.
	Practice	land Applications
	Preparation Work	Collection of material on the subject
4	Theoretical	Production techniques of other organic materials used in agriculture.
	Practice	land Applications
	Preparation Work	Collection of material on the subject
5	Theoretical	Green fertilizers and green fertilization concepts.
	Practice	land Applications
	Preparation Work	Collection of material on the subject
6	Theoretical	Introduction to chemical fertilizers.
	Practice	land Applications
	Preparation Work	Collection of material on the subject
7	Theoretical	Nitrogen containing chemical fertilizers.
	Practice	land Applications
	Preparation Work	Collection of material on the subject
8	Intermediate Exam	Mid-term exam
9	Theoretical	Nitrogen containing chemical fertilizers.



9	Practice	land Applications
	Preparation Work	Collection of material on the subject
10	Theoretical	Phosphorus and potassium containing chemical fertilizers. Calcium and magnesium containing chemical fertilizers. Sulphur containing chemical fertilizers.
	Practice	land Applications
	Preparation Work	Collection of material on the subject
11	Theoretical	Micro element containing chemical fertilizers.
	Practice	land Applications
	Preparation Work	Collection of material on the subject
12	Theoretical	compound fertilizers
	Practice	land Applications
	Preparation Work	Collection of material on the subject
13	Theoretical	fertilization methods
	Practice	land Applications
	Preparation Work	Collection of material on the subject
14	Theoretical	fertilizer accounts
	Practice	land Applications
	Preparation Work	Collection of material on the subject
15	Theoretical	general assessment
	Practice	land Applications
	Preparation Work	Collection of material on the subject

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Lecture - Practice	14	0	2	28
Midterm Examination	1	7	1	8
Final Examination	1	10	1	11
Total Workload (Hours)				75
[Total Workload (Hours) / 25*] = ECTS				3

\*25 hour workload is accepted as 1 ECTS

### Learning Outcomes

1	To be able to compare the factors which consisted of plantal, environmental and economic factors under optimum fertilization conditions.
2	To be able to compare fertilization methods
3	To be able to explain interactions among fertilizer, soil and plant
4	To be able to identify organic and chemical fertilizers
5	To be able to use technical knowledge and data in fertilization suggestions.

### 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 aable 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	L2	L3	L4	L5
P1	4	2	2	2	2
P2	2	2	2	2	2
P3	2	2	2	2	2
P4	2	2	2	2	2
P14	5	5	5	5	5

