



## AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Mechanization in Internal Agriculture							
Course Code		TAM237		Course Level		Short Cycle (Associate's Degree)			
ECTS Credit	2	Workload	50 (Hours)	Theory	1	Practice	2	Laboratory	0
Objectives of the Course		The aim of this course, is to acquire the mechanization principles of agricultural production in greenhouses and solving questions appropriate for greenhouse climate techniques depending on plant demand. Another aim of this course is to learn all parts of machines of livestock and its working principles							
Course Content		Climatization of greenhouses: heating methods of greenhouses and basic applications, calculation of total heat requirements of greenhouses. Natural and forced ventilation methods of greenhouses and basic applications, calculations of required ventilation of greenhouses. Cooling methods of greenhouses and basic applications. Artificial lighting in greenhouses. Introduction to machinery of livestock husbandry, forage harvesting machinery, concentrate feed preparation machinery, mechanization on feeding, indoor shelter and stables air conditioning, watering technics in livestock husbandry, handling technology of manure at livestock husbandry, milking and milk cooling technology.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Discussion, Case Study, Problem Solving					
Name of Lecturer(s)									

### Assessment Methods and Criteria

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

### Recommended or Required Reading

1	Yağcıoğlu, A., 2009. Sera Mekanizasyonu. E.Ü.Z.F. Press Number. 562, İzmir.
2	Öztürk, H.H., 2008. Sera İklimlendirme Tekniği. Hasad Publishing Limited Company, İstanbul .
3	Sezer, A., Engürülü, B., Çiftçi, Ö., Gölbaşı, M., Başaran, H.Ç. ve Akkurt, M., 2005. Hayvancılıkta Mekanizasyon. Republic of Turkey Ministry of Food, Agriculture and Livestock, Ankara Ziraat Üretim İşletmesi, Personel ve Makine Eğitim Merkezi Müdürlüğü, ISBN:975-407-191-8, Ankara.
4	Yavuzcan, G., 1995. İçsel Tarım Mekanizasyonu. A.Ü.Z.F. Press Number. 1416, Ankara.

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to the class, definitions and general information about lesson
	Practice	Introduction of greenhouses
	Preparation Work	Examining course contents
2	Theoretical	The importance of plant production in greenhouses and overview of greenhouses production in Turkey and World, and greenhouse constructions.
	Practice	Introduction of greenhouses and to solve problems related to the subject
	Preparation Work	Literature review about the subject
3	Theoretical	Heating methods of greenhouses and basic applications.
	Practice	Introduction of greenhouses and to solve problems related to the subject
	Preparation Work	Literature review about the subject
4	Theoretical	Calculation of total heat requirements of greenhouses.
	Practice	Introduction of greenhouses and to solve problems related to the subject
	Preparation Work	Literature review about the subject
5	Theoretical	Natural and forced ventilation methods of greenhouses and basic applications
	Practice	Introduction of greenhouses and to solve problems related to the subject
	Preparation Work	Literature review about the subject
6	Theoretical	Cooling methods of greenhouses and basic applications calculation of evaporative systems.
	Practice	Introduction of greenhouses and to solve problems related to the subject
	Preparation Work	Literature review about the subject
7	Theoretical	Mechanization applications for plant production in greenhouses: Irrigation, harvesting, soil disinfections, some other special mechanization applications in greenhouses.



7	Practice	Introduction of greenhouses and to solve problems related to the subject
	Preparation Work	Literature review about the subject
8	Intermediate Exam	Midterm Exam
9	Theoretical	Introduction to machinery of livestock husbandry
	Practice	Introduction to machinery of livestock husbandry and to solve problems related to the subject
	Preparation Work	Literature review about the subject
10	Theoretical	Mechanization of poultry
	Practice	Introduction of poultry and to solve problems related to the subject
	Preparation Work	Literature review about the subject
11	Theoretical	Mechanization on feeding (Conveying and distribution of feed materials) in livestock husbandry
	Practice	Introduction to machinery of livestock husbandry and to solve problems related to the subject
	Preparation Work	Literature review about the subject
12	Theoretical	Watering mechanization in livestock husbandry
	Practice	Introduction to machinery of livestock husbandry and to solve problems related to the subject
	Preparation Work	Literature review about the subject
13	Theoretical	Handling mechanization of manure in livestock husbandry (solid and liquid manure systems)
	Practice	Introduction to machinery of livestock husbandry and to solve problems related to the subject
	Preparation Work	Literature review about the subject
14	Theoretical	Milking and milk cooling technology, computerized herd management systems
	Practice	Introduction to machinery of livestock husbandry and to solve problems related to the subject
	Preparation Work	Literature review about the subject
15	Theoretical	Practice Exam
	Practice	Explanation of greenhouse and machinery of live stock husbandry in the form of questions and answers
	Preparation Work	Practice Exam preparation
16	Theoretical	Final Exam

### Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	1	14
Lecture - Practice	14	0	2	28
Midterm Examination	1	3	1	4
Final Examination	1	3	1	4
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 define greenhouse constructions.
2	To be able to understand the factors that influence the climate of greenhouse.
3	To be able to solve questions related to greenhouse climate depending on the construction of greenhouses and plant demand.
4	To be able to comprehend the use of technological equipment in greenhouse mechanization, and new production techniques
5	To be able to recognize animal farming, types and agricultural tools and equipment used in animal production.
6	To be able to make appropriate machinery selection for mechanization applications.
7	To be able to apply modern agricultural techniques into livestock farming

### 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 standards 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	L6	L7
P4	3	3	3	3	3	3	4
P5	3	4	4	5	3	4	5
P6	3	4	5	5	3	3	5
P7				5		5	4
P8				5			
P9				5			

