



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Milking Mechanization and Processing Techniques							
Course Code		ZTM612		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	7	Workload	179 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		The purpose of this course, many types of agricultural enterprises by size and with technological developments introduce milking machines. After milking, milk cooling and milk processing chain to gain professional knowledge about the techniques and applications centers.							
Course Content		The elements constituting the kinds of milking machines and machines, portable milking machine, milking facilities, and fixed by the TSE and ISO standards used in the measurement and analysis of structural and functional test equipment, milking systems, new developments, new techniques in dairy processing							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study, Individual Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

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

Recommended or Required Reading

1	Requirements of a milking system. Bray, D.R. University of Florida, Ifas extension, DS3, 5p. USA.
2	ISO 5707. Milking machine installations – construction and performance. Switzerland: Inter. Standards Organization.
3	ISO 6690. Milking machine installations – mechanical tests. Geneva, Switzerland: Inter. Standards Organization.
4	“Süt İşleme Makinaları ve Bakımı (Basılmamış Ders Notu)”. Ünal, H., U.Ü., Teknik Bilimler MYO, Gıda Tekno. Prog., Bursa.
5	“Süt Sağım Makinaları”. Makinalı Süt Sağım Tekniği Eğitim Kursu, (Basılmamış sunu), Ünal, H., SÜTAŞ, Süt Hayvancılığı Eğitim Merkezi, Bursa.
6	Hayvancılıkta Mekanizasyon. Yıldız Y., C. Karaca ve M. Dağtekin, 2008. Hasad Yayıncılık Ltd. Şti. İstanbul.

Week	Weekly Detailed Course Contents	
1	Theoretical	Milking machines and equipment
2	Theoretical	Milking machines and equipment
3	Theoretical	Tests of milking machines and milking facilities
4	Theoretical	Tests of milking machines and milking facilities
5	Theoretical	Milking machines and mastitis relationship
6	Theoretical	New developments in milking systems
7	Intermediate Exam	Midterm Exam
8	Theoretical	New developments in milking systems
9	Theoretical	Milk cooling principle and equipment
10	Theoretical	Machines used for milk pasteurization and sterilization
11	Theoretical	Milk procurement system, milk cooling and transport systems
12	Theoretical	Pasteurized and heat exchanger units
13	Theoretical	Cheese-butter-yogurt and buttermilk production machines
14	Theoretical	New techniques for milk processing
15	Theoretical	New techniques for milk processing
16	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Assignment	14	0	3	42
Term Project	1	0	25	25
Midterm Examination	1	20	1	21



Final Examination	1	20	1	21
Total Workload (Hours)				179
[Total Workload (Hours) / 25*] = ECTS				7
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Learn in detail production of milking technique and milking machine parts to.
2	To learn performance of milking facilities and test conditions in accordance with TSE and ISO standards.
3	Gain the ability to design, develop staff getting to know the specifications pulsator and vacuum pump.
4	To learn the necessary planning and technical calculations for the installation of milking machine.
5	To know in detail milk cooling technique and an important element of the chain of cold milk, the milk cooling tanks on farms
6	Learn the characteristics of milk cooling tanks, design, installation and operation
7	To learn milk processing factories, machinery and equipment used.

Programme Outcomes (Agricultural Machinery Doctorate)

1	Identification, formulation and solving the problems in the field of Agricultural Machinery
2	The ability to use modern engineering tools and techniques
3	The ability to use the information, which is obtained by following the scientific and technological developments, in the academic life and practice.
4	The ability to evaluate multi-faced relationship between them by understanding interaction among agricultural technology, soil, plants and animals
5	Professionalism and ethical responsibility
6	The ability to work in disciplinary and multi-disciplinary teams
7	The ability to communicate effectively
8	The ability to do research for accessing information and to use data base and other resources
9	The ability to do analyze and interpret the experimental results and the design of experiment
10	The ability to identify and interpret knowledge of current professional issues and events
11	The ability to get aware the universal and social effects of engineering solutions and applications
12	Accordance with the requirements of science and technology, ability to use scientific knowledge creative

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
P1	5	5	5	5	5	5	5
P2	5	5	5	5	5	5	5
P3	4	4	4	4	4	4	4
P4	5	5	5	5			
P6			4	4			5
P10	4	4	4	4	4	4	4
P12	5	5	5	5	5	5	5

