



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Dairy Microbiology							
Course Code		ST314		Course Level		First Cycle (Bachelor's Degree)			
ECTS Credit	4	Workload	102 (<i>Hours</i>)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		Teaching the necessary precautions to stop spoilage of dairy products and keep away the pathogens from them by introducing the important microorganism from dairy microbiology point of view. Moreover general properties of microorganisms that are using in production of fermented milk products are also given.							
Course Content		Introduction of important families and genus, lactic acid bacteria, yeasts and moulds, chemistry of spoilage and fermentations, microbial diseases and poisoning							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Individual Study					
Name of Lecturer(s)									

Prerequisites & Co-requisites

Prerequisite	TBB205
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Assessment Methods and Criteria

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

Recommended or Required Reading

1	1. Tunail, N., Köşker, Ö. 1989. Süt Mikrobiyolojisi. Ankara Üniv. Ziraat Fak.Yayınları: 1116 Ders Kitabı No: 320, Ankara Anonymous, 2005.
2	2. Merck Gıda Mikrobiyolojisi Uygulamaları Ed. A.K. Halkman. Başak Matbaacılık Ankara. Marth, E.H., Steele, J. L. 2001.
3	3. Applied Dairy Microbiology Marcel Dekker, Inc. New York Robinson, R.K. 2002.
4	4. Dairy Microbiology Handbook, John Wiley & Sons, Inc. Fernandes, R. 2008.
5	5. Microbiology Handbok Dairy Products. Leatherhead Food International Ltd. Kılıç,S.,2000.
6	6. Süt endüstrisinde laktik asit bakterileri, E.Ü.Z.F Yayınları No:542, 467s.

Week	Weekly Detailed Course Contents	
1	Theoretical	Aim of the course, historical development of dairy microbiology, milk as a microbiological media, composition of milk, raw milk and bacteria
2	Theoretical	Micrococcaceae and Enterobacteriaceae Familia
3	Theoretical	Corynebacteriaceae, Mycobacteriaceae, Bacillaceae Familia
4	Theoretical	Pseudomonaceae, Propionibacteriaceae and Achromabacteriaceae Familia
5	Theoretical	Lactic acid bacteria: Streptococcaceae Familia, Lactobacillaceae Familia, important probiotic bacteria
6	Theoretical	Metabolic activities of lactic acid bacteria, lactose metabolism, importance from dairy technology point of view
7	Theoretical	Important yeasts and moulds in dairy technology, mycotoxins
8	Intermediate Exam	Midterm exam
9	Theoretical	Protozoa and viruses, importance in dairy technology
10	Theoretical	Microbial spoilage in milk and milk products, chemistry of fermentations
11	Theoretical	Microbial spoilage in milk and milk products, chemistry of fermentations
12	Theoretical	Microbial spoilage in fluid milk, concentrated milks and cheese, important microorganisms
13	Theoretical	Microbial spoilage in fermented milks, butter and ice cream, important microorganisms
14	Theoretical	Milk and milk products sourced microbial diseases and toxication
15	Theoretical	Important critical control points
16	Final Exam	Final exam



Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	2	56
Laboratory	14	0	2	28
Individual Work	14	0	1	14
Midterm Examination	1	0	2	2
Final Examination	1	0	2	2
Total Workload (Hours)				102
[Total Workload (Hours) / 25*] = ECTS				4
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	1. Students should be able to; recognize important dairy microorganisms
2	2. comprehend the importance of lactic acid bacteria in manufacture of fermented milk products
3	3. know the biochemical changes happen during microorganism growth in milk and milk products
4	4. Comprehend the effect of milk and milk products sourced pathogens on human health
5	5. know the contamination sources of microorganisms to milk and milk products

Programme Outcomes (Dairy Technology)

1	Having sufficient infrastructure in basic sciences and engineering subjects and ability to use the theoretical and applied info instantly in this field.
2	Determining the modern techniques, tools and information technologies required for applications related with his field and ability to use them efficiently
3	Ability for planning, projecting, and designing, following up, analyzing and finding target-driven solutions related with his field
4	Ability to have professional ethic and awareness.
5	Ability to work, decide, express opinions orally and in written individually
6	Ability to participate team studies, taking responsibility, making leadership.
7	Ability to conceive Atatürk's principles and reforms, to communicate in Turkish and foreign language.
8	Ability to comprehend the necessity to learn for a life time, to monitor developments in science and technology and continuously renew himself.
9	Having sufficient level of information about production and quality control of milk and dairy products and also product development, increasing product quality and food security fields.
10	Ability to detect, define, solve problems related with his field and to select and apply suitable methods and modeling techniques for this purpose.
11	To be conscious about workplace applications, worker health, work security and environment subjects, to have knowledge about legal results of the engineering applications related with his subject.

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

	L1	L2	L3	L4	L5
P9	5	5	5	5	5

