

ADVANCED DAIRY TECHNOLOGY

1	Course Title:	ADVANCED DAIRY TECHNOLOGY
2	Course Code:	GMB6021
3	Type of Course:	Optional
4	Level of Course:	Third Cycle
5	Year of Study:	1
6	Semester:	1
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	Non
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. TÜLAY ÖZCAN
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	Prof. Dr. Tülay ÖZCAN Uludağ Üniversitesi Ziraat Fakültesi Gıda Mühendisliği Bölümü 16059 Görükle/Bursa Tel: 0 224 2941498 Fax: 0 224 2941402 e-posta: : tulayozcan@uludag.edu.tr
17	Website:	
18	Objective of the Course:	The main purpose of this course is informing the students about instruments used in the processing of milk, membrane separation techniques, milk and milk products packaging materials and dairy industry wastes.
19	Contribution of the Course to Professional Development:	The course provides students with knowledge about technologies used in the dairy industry.
20	Learning Outcomes:	
	1	Informing about the homogenizers, heat exchangers, evaporators and dryers used in dairy technology
	2	Informing about the nonthermal milk preservation methods
	3	Informing about the membrane separation techniques and applications in dairy technology
	4	Informing about the evaluation of milk wastes and waste management
	5	Informing about the packaging materials used in milk and milk products
	6	Informing about the milk and milk products quality control and regulation

		7	Informing about the hygiene and sanitation in the dairy industry		
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		10			
21	Course Content:				
	Course Content:				
Week	Theoretical		Practice		
1	Homogenization and Homogenizers in Dairy Technology				
2	Heating and Heat Exchangers for Milk				
3	Standardization of Milk and Calculation of Fat Content in Milk				
4	Evaporation and Evaporators				
5	Drying and Dryers				
6	Non-thermal Milk Preservation Methods -1				
7	Non-thermal Milk Preservation Methods -2				
Activites			Number	Duration (hour)	Total Work Load (hour)
9 Theoretical					
Membrane Separation Techniques and			14	3.00	42.00
Practicals/Labs			0	0.00	0.00
Self study and preparation					
10 Evaluation and Treatment of Industrial			14	2.00	28.00
Homeworks			2	30.00	60.00
Projects			0	0.00	0.00
11 Packaging Materials Used for Milk and Milk			0	0.00	0.00
Field Studies			0	0.00	0.00
Midterm exams			0	0.00	0.00
12 Others			0	0.00	0.00
Final Exams					
13 Quality and Control of Milk and Milk Products			1	50.00	50.00
Total Work Load					180.00
14 Legal Regulations Related to Milk and Milk Products					6.00
Total work load/ 30 hr					6.00
ECTS Credit of the Course					6.00
22	Textbooks, References and/or Other Materials:		Advanced Dairy Technology (Assoc. Prof. Dr. Tülay ÖZCAN, Unpublished Lecturer Note) Milk Technology: Composition of Milk and Processing (Prof. Dr. Mustafa Metin) Advanced Dairy Chemistry (Volume 1,2,3) (Edited by P. F. Fox) Dairy Chemistry and Biochemistry (Edited by P. F. Fox,P. L. H. McSweeney) Dairy Science and Technology (Edited by P. Walstra, J.T.M. Wouters, T.J. Geurts) Advanced Dairy Chemistry: Vol, 1, 2, 3 (Edited by P. L. H. McSweeney, P. F. Fox) Cheese: General aspects 3 (Edited by P. F. Fox) Milk and Milk Products: Technology, Chemistry, and Microbiology (Edited by A.H. Varnam, J.P. Sutherland)		

23	Assesment	
TERM LEARNING ACTIVITIES	NUMBE R	WEIGHT
Midterm Exam	0	0.00
Quiz	0	0.00
Home work-project	2	40.00
Final Exam	1	60.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		Homework is given and a final exam is made.

24	ECTS / WORK LOAD TABLE
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25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	5	5	5	4	5	5	3	0	0	0	0	0	0	0	0	0
ÖK2	5	5	5	4	5	5	3	0	0	0	0	0	0	0	0	0
ÖK3	5	5	5	4	5	5	3	0	0	0	0	0	0	0	0	0
ÖK4	5	5	4	4	5	5	3	0	0	0	0	0	0	0	0	0
ÖK5	4	4	5	5	5	3	3	0	0	0	0	0	0	0	0	0
ÖK6	5	5	4	5	4	3	3	0	0	0	0	0	0	0	0	0
ÖK7	5	5	5	5	4	3	3	0	0	0	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contribution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							