



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Dairy Chemistry and Biochemistry							
Course Code		GMP525		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	8	Workload	200 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Definition of milk, milk components biosynthesis of structural organization of the components of milk, the chemistry of the main constituents of milk; milk fat characteristics, milk proteins, milk sugar. Vitamins, enzymes, other ingredients. The nutritional value of milk.							
Course Content		Milk production and use, milk composition; lactose, milk fat, milk protein, mineral substances of milk, vitamins, milk and dairy products, milk, water in dairy products. Milk and dairy products enzymology, heat-induced changes in the milk. Chemistry and biochemistry of cheese and fermented dairy products. The physical properties of the milk.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Discussion, Case Study, Individual Study					
Name of Lecturer(s)		Lec. Selda BULCA							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	25
Final Examination	1	55
Assignment	1	20

Recommended or Required Reading

1	Dairy Chemistry and Biochemistry. P.F. Fox and P.L.H. McSweeney, 1998
2	Belitz, H. D, Grosch, W, Schieberle, P, 2009. Food Chemistry, Springer Verlag Berlin, Heidelberg
3	Varnam, A. H., Sutherland J. P. 1994. Milk and Milk Products Technology, chemistry and microbiology (is available as e-book in ADU-library)
4	Walstra, P., Wouters, J.T.M., Geurts, T.J. 2006. Dairy Science and Technology. 2nd Edition, CRC Press (is available as e-book in ADU-library)
5	Dairy Processing Handbook, Tetra Pak Processing Systems AB, Second, revised edition, 2003

Week	Weekly Detailed Course Contents	
1	Theoretical	Production and use of milk
2	Theoretical	Milk components
3	Theoretical	Lactose
4	Theoretical	Milk fat
5	Theoretical	Milk proteins
6	Theoretical	Minerals of Milk
7	Theoretical	Vitamins of milk and milk products
8	Theoretical	Water in Milk and Milk Products
9	Theoretical	Enzymology of milk and milk products
10	Theoretical	Enzymology of milk and milk products
11	Theoretical	Influence of heating on the changing of milk components
12	Theoretical	Chemistry and Biochemistry of cheese and fermented milk products
13	Theoretical	Physical properties of milk
14	Theoretical	Physical properties of milk

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	9	2	154
Quiz	2	6	1	14
Midterm Examination	1	15	1	16



Final Examination	1	15	1	16
Total Workload (Hours)				200
[Total Workload (Hours) / 25*] = ECTS				8
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	
2	
3	
4	
5	

Programme Outcomes (Food Engineering Master)

1	To provide further training and research opportunities to food engineers to meet the needs of the food industry
2	To develop and deepen the current and advanced knowledge in the field of food engineering with original thought and / or research at the level of expertise, based on the qualifications of the master
3	To identify, define, formulate and solve problems in applications related to Food Engineering and gain the ability to select and apply appropriate analytical methods and modeling techniques
4	To gain the ability to evaluate the accuracy of the data obtained from food analysis
5	To educate students having research, entrepreneur qualifications

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	3	3	3	1	1
P2	3	3	4		
P3	4	4	3		
P4	4	4	3		
P5	3	4	4		

