BIOCHEMISTRY OF DAIRY PRODUCTS

1	Course Title:	BIOCHEMISTRY OF DAIRY PRODUCTS
2	Course Code:	GMB5337
3	Type of Course:	Optional
4	Level of Course:	Second 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 Bursa 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 purpose of this course that students are informed about the chemical and bio-chemical changes occurring during manufacturing of milk products.
19	Contribution of the Course to Professional Development:	The course builds on students' knowledge of chemical and biochemical changes in milk.
20	Learning Outcomes:	

	1	Informing about physical properties of milk
	2	Informing about chemistry of casein and coagulation mechanism of milk
	3	Informing about the chemical and bio-chemical changes (glycolysis, proteolysis and lipolysis) occurring during manufacturing of milk products
	4	Informing about rheological and textural properties of the milk
	5	Informing about trace elements of milk (vitamins and minerals etc.)
	6	Informing about contaminants in milk and milk products (aflotoxin Mı, antibiotic, pesticides and remains etc.)
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Formation of milk	
2	Physical Properties of Milk -1	
3	Physical Properties of Milk -2	
4	Milk Lipids and Changes in Lipids	
5	Milk Proteins and Changes in Proteins	
6	Lactose and Its Reactions	
7	Chemistry of Casein and Coagulation Mechanism of Milk	
8	Glycolysis, Proteolysis and Lipolysis in Milk and Milk Products	
9	Minerals in Milk	
10	Vitamins in Milk	
11	Milk Enzymes	
12	Microbial Changes in Milk and Milk Products	
13	Aflotoxin M, Antibiotic, Pesticides and Remains etc.	
14	Physical Properties of Milk	
15	Chemical Properties of Milk	
16	Milk Products	
17	Milk Products	
18	Milk Products	
19	Milk Products	
20	Milk Products	
21	Milk Products	
22	Milk Products	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	14	2.00	28.00
Self-study and preparation	14	2.00	28.00
Homeworks	4	10.00	40.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm Exams	0	0.00	0.00
Others	0	0.00	0.00
Final Exams	1	50.00	50.00
Total Work Load			174.00
Total work load/ 30 hr			5.80
ECTS Credit of the Course			6.00

22	Textbooks, References and/or Other Materials:
	Physics and Chemistry of Milk and Milk Products (Assoc. Prof. Tülay ÖZCAN, Unpublished Lecturer Note)
	Dairy Chemistry and Biochemistry (Edited by P.F. Fox, P.L.H. McSweeney)
	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	**NUMBER**	**WEIGHT**
Midterm Exam	0	0.00
Quiz	0	0.00
Home work-project	4	50.00
Final Exam	1	50.00
Total	5	100.00
Contribution of Term (Year) Learning Activities to Success Grade		50.00

Contribution of Final Exam to Success Grade	50.00
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

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	5	5	4	4	4	3	4	0	0	0	0	0	0
ÖK2	5	5	5	5	5	4	4	4	3	4	0	0	0	0	0	0
ÖK3	5	5	5	5	5	4	4	4	3	4	0	0	0	0	0	0
ÖK4	5	5	5	5	5	4	4	4	3	4	0	0	0	0	0	0
ÖK5	5	5	5	5	5	4	4	4	3	4	0	0	0	0	0	0
ÖK6	5	5	5	5	5	4	4	4	3	4	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**