

ENZYMES IN FOOD INDUSTRY

1	Course Title:	ENZYMES IN FOOD INDUSTRY
2	Course Code:	GMB5031
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):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	2
11	Prerequisites:	
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. OZAN GÜRBÜZ
15	Course Lecturers:	
16	Contact information of the Course Coordinator:	Uludağ Üniversitesi Ziraat Fakültesi Gıda Mühendisliği Bölümü 16059 Görükle/Bursa Tel: 0224 2941500 Fax: 0224 2941402 e-posta: ozang@uludag.edu.tr
17	Website:	
18	Objective of the Course:	Informing about enzyme structure, types, systematics and usage of enzymes in food industry
19	Contribution of the Course to Professional Development:	The course provides students with knowledge about enzymes used in the food industry.
20	Learning Outcomes:	
	1	The students will be able to learn enzyme chemistry
	2	The students will be able to learn systematics, denomination and classification of enzymes
	3	The students will be able to learn enzyme kinetics
	4	The students will be able to learn factors effecting enzyme velocity
	5	The students will be able to learn commercial enzyme production and isolation of enzymes
	6	The students will be able to learn purification of enzymes
	7	The students will be able to learn enzyme usage in starch and candy industry, bakery, beverage technology, milk and dairy industry, oil industry
	8	Learning about enzyme usage and applications in beverage industry
	9	Learning about the use of enzymes in the dairy industry and the role of enzymes in determining milk quality
	10	Learning about the use of enzymes in the oil industry and the role of enzymes in obtaining oil from oilseeds.
21	Course Content:	
	Course Content:	
Week	Theoretical	Practice

1	Explanation of objective and content of the lecture	
2	Enzyme chemistry	
3	Systematics, denomination and classification of enzymes	
4	Enzyme kinetics	
5	Factors effecting enzyme velocity	
6	Commercial enzyme production and isolation of enzymes	
7	Purification of enzymes	
8	Enzyme usage in starch and candy industry	
9	Enzyme usage in bakery	
10	Enzyme usage in beverage technology	
11	Enzyme usage in milk and dairy industry	
12	Enzyme usage in oil industry	
13	Enzyme applications in food industry	
14	Microbial enzyme production	

22	Textbooks, References and/or Other Materials:	• Powerpoint presentation • Belitz,H.D, Grosch, W. Food Chemistry, 1999, Springer, Inc. • Gıda Kimyası: İ. Saldamlı (ed.) Hacettepe Ü. • Gıda Kimyası: M. Demirci, Namık Kemal Ü.
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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	1.00	14.00
Homeworks		1	50.00	50.00
Projects		0	0.00	0.00
Midterm Exam	0	0	0.00	0.00
Field Studies		0	0.00	0.00
Midterm exams		0	0.00	0.00
Home work project	1	50.00	0.00	0.00
Others		0	0.00	0.00
Final Exams		2	55.00	55.00
Total				
Total Work Load				175.00
Success Grade/ 30 hr				5.83
ECTS Credit of the Course				6.00

Total	100.00
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Measurement and Evaluation Techniques Used in the Course	For evaluation; a homework is given and the final exam is done.
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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	3	5	4	5	4	4	5	4	5	5	0	0	0	0	0	0
ÖK2	4	4	3	3	3	4	4	3	5	3	0	0	0	0	0	0

ÖK3	4	5	2	4	3	3	5	4	5	2	0	0	0	0	0	0
ÖK4	5	3	2	3	3	5	5	5	3	2	0	0	0	0	0	0
ÖK5	4	4	5	4	5	4	4	4	3	4	0	0	0	0	0	0
ÖK6	5	3	3	3	4	5	3	3	3	3	0	0	0	0	0	0
ÖK7	4	2	4	3	5	2	2	5	4	5	0	0	0	0	0	0
ÖK8	4	4	3	5	4	3	4	4	3	3	0	0	0	0	0	0
ÖK9	5	3	4	4	5	5	2	3	5	5	0	0	0	0	0	0
ÖK10	3	5	4	4	3	3	2	5	3	5	0	0	0	0	0	0
LO: Learning Objectives PQ: Program Qualifications																
Contrib ution Level:	1 very low			2 low			3 Medium			4 High			5 Very High			