

# LACTIC ACID BACTERIA AND BIOTECHNOLOGICAL APPLICATIONS OF LACTIC ACID BACTERIA

1	Course Title:	LACTIC ACID BACTERIA AND BIOTECHNOLOGICAL APPLICATIONS OF LACTIC ACID BACTERIA	
2	Course Code:	GMB6027	
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:		
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. VİLDAN UYLAŞER	
15	Course Lecturers:	Prof. Dr. Vildan UYLAŞER	
16	Contact information of the Course Coordinator:	Bursa Uludağ Üniversitesi Ziraat Fakültesi Gıda Mühendisliği Bölümü 16059 Görükle/Bursa Tel: 0224 2941499 Fax: 0224 2941402 e-posta: uylaserv@uludag.edu.tr	
17	Website:		
18	Objective of the Course:		
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	To learn the the cytology and nutrition of lactic acid bacteria.
		2	To have information about the development processes of lactic acid bacteria.
		3	To understand the importance of lactic acid fermentation and formation mechanisms
		4	To gain knowledge of the usage possibilities of lactic acid bacteria in the food industry.
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21	Course Content:		
		<b>Course Content:</b>	
Week	Theoretical	Practice	
1	General characteristics of lactic acid bacteria		
2	Cytology of lactic acid bacteria		

3	Nutritional and growth properties of lactic acid bacteria	
4	Classification of lactic acid bacteria	
5	Examination of studies using Lactobacillus, Pediococcus, Lactococcus, Streptococcus, Leuconostoc, Cornobacterium, Enterococcus, Bifidobacterium and other lactic acid bacteria	
6	Description of lactic acid fermentations	
7	Investigation of formation mechanisms of lactic acid fermentation	
8	Examination of products resulting from lactic acid fermentation	
9	General characteristics of probiotic lactic acid bacteria	
10	Starter cultures used in the food industry	
11	Uses of lactic acid bacteria in food industry	
12	Antimicrobial metabolites of lactic acid bacteria and mode of action	
13	Metabolic substances produced by lactic acid bacteria	
14	Lactic acid bacteria found in traditional fermented foods	

Activities		Number	Duration (hour)	Total Work Load (hour)
Theoretical		14	3.00	42.00
Practicals/Labs		0	0.00	0.00
Self study and preparation		14	3.00	42.00
Homeworks		1	50.00	50.00
<b>PERIODIC LEARNING ACTIVITIES</b>		<b>NUMBER</b>	<b>WEIGHT</b>	
Field Studies		0	0.00	0.00
Midterm Exam		0	0.00	0.00
Midterm exams		0	0.00	0.00
Quiz		0	0.00	0.00
Others		0	0.00	0.00
Home work/project		1	50.00	50.00
Final Exams		1	60.00	60.00
Total Work Load				184.00
Total work load/ 30 hr		6		6.13
Contribution of Term (Year) Learning Activities to		10.00		
ECTS Credit of the Course				6.00

Measurement and Evaluation Techniques Used in the Course	
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25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS
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ÖK2	5	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0
ÖK3	4	3	3	5	4	3	4	0	0	0	0	0	0	0	0	0	0
ÖK4	4	4	4	4	4	4	4	0	0	0	0	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				