ENZYME TECHNOLOGY

1	Course Title:	ENZYME TECHNOLOGY
2	Course Code:	BYL4087
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	4
6	Semester:	7
7	ECTS Credits Allocated:	4.00
8	Theoretical (hour/week):	2.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. Elif Demirkan
15	Course Lecturers:	Prof. Dr. Elif Demirkan
16	Contact information of the Course Coordinator:	edemirkan@uludag.edu.tr Tel: (0224)2941794 Uludağ Üniversitesi Fen-Edebiyat Fakültesi, Biyoloji Bölümü, B Blok Görükle Kampüsü, Nilüfer/BURSA 16059 /Uludag University, Faculty of Science&Letters, Department of Biology, Nilufer/BURSA 16059
17	Website:	
18	Objective of the Course:	The course will provide an overview of the enzymes used in large scale industrial processes.
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	To be able see the continuity of the relationship between the environment and living
	2	The ability to effectively employ communication technologies
	3	To earn the ability to transfer information
	4	The ability to win the professional and ethical responsibility awareness
	5	To have sufficient knowledge in areas of Natural Sciences for which one might be consulted
	6	Be aware of scientific innovation
	7	To comprehend the position and responsibility of human beings in nature
	8	To be able to reach up to date information
	9	
	10	

21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	The nature of enzymes	
2	Historical uses of enzymes	

3	General characteristics of technical enzymes: how enzymes work	
4	General characteristics of technical enzymes:enzyme structure and mechanism	
5	Enzyme sources: Microorganisms (Bacteria, fungi and yeast)	
6	Industrial strain selection, reproductive parameters	
7	Enzyme technology, Enzyme production methods	
8	Production of industrial enzymes by Recombinant DNA Technology	
9	Enzyme isolation, purification and charaterization	
10	Enzyme immobilization and methods	
11	Technical enzymes and application fields Amylase, protease, lipase, phytase	
12	Enzymes in textiles,in juice and winemaking	
13	Enzymes in paper and other industries	
14	Fungal Technology	

22	Textbooks, References and/or Other Materials:	E.Demirkan, Enzyme Technology Lecture Notes H.Uhling , Industrial Enzymes and Their Applications.1998

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	15	6.00	90.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	1.00	1.00
Others	0	0.00	0.00
Final Exams	1	1.00	1.00
Total Work Load			120.00
Total work load/ 30 hr			4.00
ECTS Credit of the Course			4.00

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	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
ÖK2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0
ÖK4	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0

ÖK5	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0
ÖK7	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0
ÖK8	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**