BACTERIOPHAGE AND BACTERIOCIN APPLICATION IN FOOD TECHNOLOGY

1	Course Title:	BACTERIOPHAGE AND BACTERIOCIN APPLICATION IN FOOD TECHNOLOGY
2	Course Code:	VBH5029
3	Type of Course:	Optional
4	Level of Course:	Second Cycle
5	Year of Study:	1
6	Semester:	1
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:	Doç. Dr. ARTUN YIBAR
15	Course Lecturers:	Yok
16	Contact information of the Course Coordinator:	Mail: artunyibar@uludag.edu.tr Tel: 02242941359 Adres: Bursa Uludağ Ünv. Veteriner Fak. Besin Hijyeni ve Teknolojisi Anabilim Dalı
17	Website:	http://saglikbilimleri.uludag.edu.tr
18	Objective of the Course:	Information on the use and benefits of bacteriophages and bacteriocins in food technology
19	Contribution of the Course to Professional Development:	Because of the aim of the course is to explain the use of bacteriophages and bacteriocins, it will contribute to the knowledge of the graduates who will work in the sector and in the field of food.
20	Learning Outcomes:	
	1	Learning the protection methods used in food technology
	2	Bacteriophages used in food technology and their knowledge of food safety
	3	Bacteriocins used in food technology and their knowledge of food safety
	4	Understanding bacteriophage and bacteriocin concepts
	5	Learning morphological properties of bacteriophages
	6	Learning serological features of bacteriophages for food safety and improving food quality
	7	Understanding the mutation in bacteriophages
	8	Learning phage infections
	9	Understanding phage using areas
	10	Learning potential benefits of bacteriophages used in food technology
21	Course Content:	

Course Content:

Week	Theoretical	Practice
1	What is bacteriophage?	
2	Structural properties of bacteriophages	
3	Classification of phages	

4	Serological characteristics of phages	
5	Proliferation of phages	
6	Adsorption and penetration	
7	Mutation in phage	
8	Phage infection types	
9	Locations and isolations of bacteriophages	
10	Counting bacteriophages	
11	Bacteriocins and their properties	
12	Bacteriophage and bacteriocins use in the food technology	
13	Problems caused by bacteriophages	
14	Future uses of bacteriophages ve bacteriosins	

22	Textbooks, References and/or Other Materials:	Mc, G. S., & Sinderen, D. . (2007). Bacteriophage: Genetics and molecular biology. Norfolk, UK: Caister Academic Press. Ha¨usler, T. (2008). Viruses vs. superbugs: A solution to the antibiotics crisis?. London: Macmillan. In Abedon, S. T. (2008). Bacteriophage ecology: Population growth, evolution, and impact of bacterial [illegible] Bacteriophages: Methods and Protocols. Calendar, Richard. (2012). The Bacteriophages. Springer Verlag Robert Derit, Sandra M. Roy and Margaret A. Riley (2016) Prospects. Caister Academic Press.

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	14	4.00	84.00
Homeworks	0	0.00	0.00
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 Exam	1	1.00	1.00
Total Work Load			113.00
Total work load/ 30 hr			3.77
ECTS Credit of the Course			4.00

23	Assessment	R	
	Midterm Exam	0	0.00
	Quiz	0	0.00
	Home work-project	0	0.00
	Final Exam	1	100.00
	Total	1	100.00
	Contribution of Term (Year) Learning Activities to Success Grade		0.00
	Contribution of Final Exam to Success Grade		100.00
	Total		100.00
	Measurement and Evaluation Techniques Used in the Course		In order to determine the students' level of knowledge and skills in the field of Bacteriophages and Bacteriocins Used in the Food Sector, a test is carried out as a final exam on UKEY as a measurement activity.

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	4	4	1	4	5	5	5	5	5	4	0	0	0	0	0	0
ÖK2	4	3	0	5	4	3	4	4	4	5	0	0	0	0	0	0
ÖK3	5	5	0	5	4	4	5	4	5	5	0	0	0	0	0	0
ÖK4	4	4	1	5	5	4	4	5	4	4	0	0	0	0	0	0
ÖK5	5	5	4	4	4	5	5	5	4	5	0	0	0	0	0	0
ÖK6	5	4	5	5	5	4	4	4	5	5	0	0	0	0	0	0
ÖK7	5	5	5	5	4	3	5	3	3	4	0	0	0	0	0	0
ÖK8	4	4	3	5	5	4	4	3	5	5	0	0	0	0	0	0
ÖK9	5	4	4	5	5	4	5	5	5	5	0	0	0	0	0	0
ÖK10	5	4	4	4	5	3	4	4	4	3	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**				