AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Biotechnology in Food Industry								
Course Code	VBH542		Couse Level	Second Cycle (Master's Degree)					
ECTS Credit	4	Workload	100 *(Hours)*	Theory	2	Practice	0	Laboratory	0
Objectives of the Course	To have information about the history of biotechnology, application areas of biotechnology, gene transfer technique and health relation, benefits and risks of genetically modified foods								
Course Content	Definition and history of biotechnology, application areas, methods used in the analysis of genetically modified organisms, evaluation of potential risks, benefits and health hazards of genetically modified foods, legal regulations.								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion								
Name of Lecturer(s)	Lec. Pelin KOÇAK KIZANLIK, Prof. Filiz KÖK								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading	
1	Aran N, Gıda Biyoteknolojisi, 2010, Ankara
2	Lee BH, Fundamentals of Food Biotechnology, 2015, UK

Week	Weekly Detailed Course Contents	
1	Theoretical	Definition and history of biotechnology, Application areas of biotechnology
2	Theoretical	Use of microorganisms in the food industry
3	Theoretical	Biochemistry and molecular biology (Nucleic acids, carbohydrates, lipids, proteins and enzymes)
4	Theoretical	Molecular biological methods
5	Theoretical	Fermentation technology in the food industry
6	Theoretical	Application areas of enzymes in food industry
7	Theoretical	Fermented meat products
8	Intermediate Exam	Midterm exam
9	Theoretical	Fermented milk products, probiotic organisms and cheese
10	Theoretical	Waste management in the food industry and evaluation of by-products
11	Theoretical	Biotechnological applications in lipids and structured lipids
12	Theoretical	Aroma biotechnology
13	Theoretical	Plant biotechnology
14	Theoretical	Genetically modified foods
15	Theoretical	Food bioreservation (bacteriocins, protective cultures, current studies)
16	Final Exam	Final exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	0	2	28
Reading	14	0	2	28
Midterm Examination	1	15	2	17
Final Examination	1	25	2	27
			Total Workload (Hours)	100
			[Total Workload (Hours) / 25*] = **ECTS**	4
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	To know the definition and history of biotechnology
2	To have knowledge about application areas of biotechnology
3	To have knowledge about gene transfer technique
4	To learn the methods used to detect genetically modified organisms
5	To have knowledge about the benefits and damages of genetically modified foods
6	To gain knowledge about evaluating health risks of GMOs

Programme Outcomes *(Food Hygiene and Technology (Veterinary Medicine) Master)*	
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Contribution of Learning Outcomes to Programme Outcomes *1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High*

	L2	L4	L6
P1		5	
P2		5	
P3		5	
P4		5	
P5		5	5
P6	5	5	