



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Food Biotechnology							
Course Code		MBTK623		Couse Level		Third Cycle (Doctorate Degree)			
ECTS Credit	10	Workload	247 (Hours)	Theory	2	Practice	2	Laboratory	0
Objectives of the Course		The aim of this course is give an information about role and applicatins of biotechnology in food industry							
Course Content		Fermentation Technologies in food industry, fermented meat and milk products, bewerages, by-products in food industry, genetically modified foods, foodborne pathogens, patent regulations.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Discussion, Individual Study					
Name of Lecturer(s)									

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	60

Recommended or Required Reading

1	Gıda biyoteknolojisi
2	Food Biotechnology
3	Microbial Diversity and Biotechnology in Food Security

Week	Weekly Detailed Course Contents	
1	Theoretical	Fermentation Technologies in food industry
2	Theoretical	Fermentation microbiology, preparation of equipments
3	Practice	Fermentatiom media and starter cultures
4	Practice	Monitoring and controlling of productive phase
5	Practice	Analysis of metabolic products and biomass in fermentation
6	Practice	Citric acid production
7	Practice	Single cell protein production
8	Intermediate Exam	Midterm exam
9	Theoretical	Yoghurt production in small scale with different starter cultures
10	Theoretical	Genetically modified foods
11	Theoretical	Antibody production for oral vaccines
12	Theoretical	Biopreservation and microbial analysis during storage of the fermented products.
13	Theoretical	Food ingredients have impact on microbiota, patent regulations
14	Theoretical	Ethanol production from yeast
15	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	0	2	26
Lecture - Practice	13	0	2	26
Seminar	5	0	15	75
Term Project	4	0	6	24
Laboratory	5	0	4	20
Individual Work	13	0	4	52
Quiz	6	0	3	18
Midterm Examination	1	0	3	3



Final Examination	1	0	3	3
Total Workload (Hours)				247
[Total Workload (Hours) / 25*] = ECTS				10
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Be able to get knowledge about fermented foods
2	Be able to recognize biotechnology discipline
3	Be able to understand uses of food by-products
4	Be able to get knowledge about genetically modified foods
5	Be able to understand foodborne pathogens and analyse methods
6	Be able to understand patent regulations

Programme Outcomes (Molecular Biotechnology(English) Interdisciplinary Doctorate)

1	Ability to identify, analyze and understand problems related to molecular biotechnology and finding valid conclusions with basic knowledge in biotechnology
2	Ability to appropriately use laboratories and their associated equipment as part of research and observation activities through various branches of sciences
3	Ability to understand and interpret biological processes at cell, tissue, organ, system and organism levels
4	Ability to decide and apply appropriate tools and techniques in biotechnological manipulation
5	Ability to comprehend fundamentals of genetics and molecular biology and carry out basic methods in relevant applications
6	Ability to apply the fundamentals of protein and DNA chemistry, and immunology to techniques in biotechnology
7	Ability to understand and practice basics of applied biotechnology, with acquired knowledge on problem solving approaches
8	Ability to understand and interpret basics of molecular applications within medical, agriculture, veterinary and forensic sciences
9	Ability to perceive biological existence at the global and regional scales, together with comprehension of associated problems
10	Acquiring appropriate knowledge in the field of basic sciences to support perception, analysis and interpretation of biological facts, and ability to use and practice relevant methods for this goal
11	Ability to develop proficiency in laboratory management, including maintenance of an orderly work environment, inventory and ordering, and set up or maintenance of equipment
12	Ability to learn essential methods in microbiology and basic skills in a microbiology laboratory
13	Ability to demonstrate proficiency with standard techniques in liquid measurement, recombinant DNA technology, protein purification and identification, and cell culture

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

	L1	L2	L3	L4	L5	L6
P1	5	5	5	5	5	5
P2	5	5	5	5	5	5
P3	3	3	3	3	3	3
P4	5	5	4	4	4	4
P5	5	5	4	4	4	4
P6	3	3	3	3	3	3
P7	4	4	5	5	5	5
P8	4	4	5	5	5	5
P9	4	4	5	5	5	5
P10	4	4	5	5	5	5
P11	3	3	3	3	3	3
P12	3	3	3	3	3	3
P13	5	5	5	5	5	5

