AYDIN ADNAN MENDERES UNIVERSITY
COURSE INFORMATION FORM

Course Title	Industrial Biotechnology								
Course Code	TBY308		Couse Level	First Cycle (Bachelor's Degree)					
ECTS Credit	3	Workload	78 *(Hours)*	Theory	2	Practice	0	Laboratory	0
Objectives of the Course	Explaining the main stages and techniques of the basic products produced in industry, the chemical and biochemical events occurring in these stages and comparing, scaling and evaluating the biotechnological processes to be substituted.								
Course Content	Importance and principles of industrial technology, raw materials, fuel and power requirements, water use in industry and preparation of boiler feed water, waste water treatment, yeasts, bacteria, algae, cheese, yogurt, wine, vinegar, beer, juice technology								
Work Placement	N/A								
Planned Learning Activities and Teaching Methods	Explanation (Presentation), Discussion, Case Study								
Name of Lecturer(s)	Lec. Zehra Burcu BAKIR								

Assessment Methods and Criteria		
Method	Quantity	Percentage (%)
Final Examination	1	100

Recommended or Required Reading	
1	Austin, G.T., Shreve's Chemical Process Industries, 5th ed., McGraw Hill, 1984.

Week	Weekly Detailed Course Contents	
1	Theoretical	MAIN APPLICATION AREAS OF BIOTECHNOLOGY
2	Theoretical	Prokaryotic biological systems
3	Theoretical	Blue-green algae and biotechnological importance
4	Theoretical	Yeast
5	Theoretical	Yeast biotechnology
6	Theoretical	Use of yeast in industrial products
7	Theoretical	Enzymes in Food Biotechnology
8	Intermediate Exam	Overview
9	Theoretical	Molds and its use in biotechnology
10	Theoretical	Industrial products produced by molds
11	Theoretical	Protista and biotechnological importance
12	Theoretical	Biotechnology in milk and dairy products
13	Theoretical	Vinegar, Juice, Wine, Biotechnological processes used in pickling
14	Theoretical	Prokaryotic and eukaryotic cell cultures and their use in biotechnology
15	Final Exam	Exam

Workload Calculation				
Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	3	2	75
Final Examination	1	2	1	3
			Total Workload (Hours)	78
			[Total Workload (Hours) / 25*] = **ECTS**	3
**25 hour workload is accepted as 1 ECTS*				

Learning Outcomes	
1	Gains broad knowledge about cell biology, biochemistry, genetic principles, molecular genetics and biotechnology.
2	Obtains the application skills related to tissue culture, recombinant DNA techniques, molecular breeding and fermentation technologies.
3	Students will be able to perceive biotechnology applications both technically and socially.
4	Can reach new developments in the field by using information technologies.

5	Gains the ability to communicate with the other sections of the society on the subjects related to the branch of science.

Programme Outcomes *(Agricultural Biotechnology)*	
1	To be able to develop skills in identifying, modeling and solving problems in agricultural biotechnology
2	To be able to synthesize life and engineering sciences for the effective resource planning of agricultural biotechnology applications
3	To be able to interpret about living organisms structure, metabolic and physiological processes in order to propose biotechnological solutions to the agricultural problems
4	To be able to analyze genomic, metabolomic and proteomic information via bioinformatic tools.
5	To have the ability to analyze collected data and interpret the results.
6	To have the ability of individual working ability and to make independent decisions, to work in inter-disciplinary and interdisciplinary teamwork, to communicate by expressing their ideas orally and in writing, clearly and concisely
7	To have the awareness of professional liabilities and ethics
8	To be able to follow current national and international problems

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

	L1	L2	L3	L4	L5
P1	3	4	5	4	3
P2	5	5	5	4	4
P3	5	5	5	4	5
P4	3	5	4	3	2
P5	5	4	5	4	5
P6	4	4	5	4	5
P7	4	4	5	5	5
P8	4	4	4	5	4