



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Microbial Ecology							
Course Code		TBY206		Couse Level		First Cycle (Bachelor's Degree)			
ECTS Credit	4	Workload	100 (<i>Hours</i>)	Theory	2	Practice	0	Laboratory	2
Objectives of the Course		The aim of the course is to get the students acquainted with the feeding factors controlling the breeding and distribution of microorganisms, habitat types of microorganisms, dispersal, and microbial assessment, relations of microorganisms and microbial toxins and pollution.							
Course Content		The characterization of microorganisms in different habitats and community with one another and with the environment interactions, bioremediation , agricultural microbiology							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Experiment, Discussion					
Name of Lecturer(s)		Lec. Zehra Burcu BAKIR							

Assessment Methods and Criteria

Method	Quantity	Percentage (%)
Midterm Examination	1	40
Final Examination	1	70

Recommended or Required Reading

1	Brock Microorganisms Biology
2	Microbial Ecology

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction and some of the terms of microbial ecology
2	Theoretical	Factors affecting the growth and dispersal of microorganisms in nature: Physical factors (Temperature, Hydrostatic pressure, osmotic pressure, surface tension, visible radiation, Ultraviolet irradiation, ionising radiation)
3	Theoretical	Habitat types of Microorganisms: Terrestrial environments
4	Theoretical	Habitat types of Microorganisms: Aquatic environments
5	Theoretical	Atmospherical Environments Biological Environments
6	Theoretical & Practice	Detecting the hand flora
7	Theoretical & Practice	detecting the load of microorganisms different environment
8	Intermediate Exam	Midterm exam
9	Theoretical	Microbial Interactions: Competition, Succession in an ecosystem
10	Theoretical	The role of Antimicrobial substances, toxins and organic inhibitors in the formation of a community
11	Theoretical	Microbial toxins in our environment: Bacterial Toxins,Algal Toxins,Fungal Toxins(Aflatoxins). The utilization of microbial toxins as insecticides.
12	Theoretical	Biogeochemical cycles (Carbon cycle, Nitrogen cycle)
13	Theoretical	Biogeochemical cycles (sulfur cycle, Phosphorus cycle)
14	Theoretical	Environmental problems and utilization of microorganisms
15	Final Exam	Final exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	13	1	2	39
Lecture - Practice	13	1	2	39
Midterm Examination	1	10	1	11



Final Examination	1	10	1	11
Total Workload (Hours)				100
[Total Workload (Hours) / 25*] = ECTS				4
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	Apprehending the relationship of microorganisms among themselves and all other creatures and comprehending the microbial interactions
2	Learning the biogeochemical cycles (carbon, nitrogen, sulphur, phosphorus)
3	Being able to implement his wins of microbial ecology and share them orally and in written.
4	Learning the basic concepts of microbial ecology
5	Learning some of the aspects of microbial nutrition
6	Comprehending the physical and chemical factors
7	Understanding the habitat types (terrestrial and aquatic environments)

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	L6	L7
P1	4	3	3	4	5	3	4
P2	3	4	4	3	4	4	5
P3	4	4	5	3	3	3	3
P4	3	4	3	4	3	3	3
P5	4	5	4	3	4	3	4
P6	3	4	3	4	3	5	5
P7	3	3	4	3	4	5	5
P8	4	4	3	4	3	4	4

