



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Eutrophication and Its Effect on Water Systems							
Course Code		BİO641		Course Level		Third Cycle (Doctorate Degree)			
ECTS Credit	7	Workload	180 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		Description of eutrophication and understanding of its effect on living organisms and non-living material in waters. Eutrophication problems of waters, eutrophication process, water management. Understanding how does water biota is effected by eutrophication?. Variation of algal growth and population in relation to eutrophication.							
Course Content		Description of eutrophication and understanding of its effect on living organisms and non-living material in waters. Eutrophication problems of waters, eutrophication process, water management. Understanding how does water biota is effected by eutrophication?. Variation of algal growth and population in relation to eutrophication.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), 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	Eutrophication of freshwaters. David Harper, 1992; D.W. Sutcliffe ve J.G. Jones, 1992
2	Ecology of freshwaters. B. Moss, 1991
3	Algal assays and monitoring eutrophication. P. Marvan, S. Pribil, O. Lhtosky. 1979 ve internet

Week	Weekly Detailed Course Contents	
1	Theoretical	Introduction to Eutrophication
2	Theoretical	Nutrients responsible for Eutrophication and their sources
3	Theoretical	Bio-chemical cycle of Eutrophication: nutrient recycle from living organisms and sediment
4	Theoretical	Biological effect of Eutrophication
5	Theoretical	Engeneering, economical and social effects of Eutrophication
6	Theoretical	Modeling and estimation of cause and effects of Eutrophication
7	Theoretical	Reduction of effect of Eutrophication and its management
8	Intermediate Exam	Mid term exam
9	Theoretical	Effect of Eutrophication on Biota
10	Theoretical	Eutrophication and biological experiments
11	Theoretical	Eutrophication and Macrophytes
12	Theoretical	Eutrophication experiments on lakes
13	Theoretical	Modeling of Eutrophication
14	Theoretical	Two eutrophic lake case histories and examining them
15	Theoretical	A shallow eotrophic lake example
16	Theoretical	Effects of eutrophication on plankton, bethos and fish
17	Final Exam	Final Examination

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	15	6	3	135
Reading	10	2	1	30
Midterm Examination	1	6	1	7



Final Examination	1	6	2	8
Total Workload (Hours)				180
[Total Workload (Hours) / 25*] = ECTS				7
*25 hour workload is accepted as 1 ECTS				

Learning Outcomes

1	To learn terminology of eutrophication
2	To understand causes of eutrophication and its effect on water systems
3	To understand the effect of eutrophication on aquatic life (plankton, benthos, macrophytes, fish)
4	To understand application of eutrophication and management
5	

Programme Outcomes (Biology Doctorate)

1	To have enough scientific background knowledge towards a specific study and research area
2	To have an ability to identify, evaluate and develop a solution for a problem on biological aspects
3	To be able to evaluate scientific observations and results of experiments using statistical analysis methods
4	To have basic skills in areas related to field of biological studies
5	To have the ability to develop cooperation with different disciplines with the high level of social communication required for studies
6	To have knowledge of technology and use of methods and means used in biological researches
7	To have an ethical understanding which will be a guide for their investigations and publications
8	For PhD; to have European Language Portfolio C1 general level language skill
9	To be able to present and discuss own research results in accordance with scientific discipline using technological tools in scientific research environments
10	To be able to detect and evaluate economic and social impacts of an own original research results
11	To be equipped with ability of carrying out independent study in biological field
12	To be able to publish at least one an international/national peer reviewed scientific paper and/or produce or interpret an original work related to biology in order to expand the frontiers of knowledge
13	To be able to develop new approaches or adaptations to be used in solving scientific and biological problems
14	To be able to develop new understanding and approaches in order to explain a new phenomenon or a biological event under investigation
15	To have abilities and experience to create new search area through inspiration gained from subject searched

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	4				
P2		4			
P5					2
P13				4	
P14			3		

