	WATER POLLUTION		ENVIRONMENTAL EFFECTS						
1	Course Title:	WATER	POLLUTION AND ENVIRONMENTAL EFFECTS						
2	Course Code:	BYL0520							
3	Type of Course:	Optional							
4	Level of Course:	First Cyc	cle						
5	Year of Study:	2							
6	Semester:	4							
7	ECTS Credits Allocated:	3.00							
8	Theoretical (hour/week):	2.00							
9	Practice (hour/week):	0.00							
10	Laboratory (hour/week):	0							
11	Prerequisites:	none							
12	Language:	Turkish							
13	Mode of Delivery:	Face to face							
14	Course Coordinator:	Doç. Dr. NURHAYAT DALKIRAN							
15	Course Lecturers:								
16	Contact information of the Course Coordinator:	Fen-Edebiyat Fakültesi, Biyoloji Bölümü, F Blok Görükle Kampüsü, 16059 Nilüfer/Bursa 0.224.2941866/e-posta: dalkiran@uludag.edu.tr							
17	Website:								
18	Objective of the Course:	The aim of the course is to provide to understanding of the causes and environmental effects of key types of water pollution. The goals are to teach the specific water pollutant types and their damage of ecosystem.							
19	Contribution of the Course to Professional Development:								
20	Learning Outcomes:								
		1	Obtains information about actual water pollution problems and their solutions.						
		2	Defines the basic concepts of aquatic toxicology.						
		3	Obtains information about water pollution types.						
		4	Obtains information about the effects of water pollution on aquatic organisms and human being.						
		5	Obtains information about the effects of water pollution on aquatic ecosystems.						
		6	Understand the importance of the protection of water sources.						
		7	Takes responsibility for the protection of water sources.						
		8							
		9							
		10							
21									
14/		Durse Content:							
Week	Ineoretical		Practice						

1	Introduction to water pollution in aquatic ecosystems; the reasons and types of water pollution; , Hydrologic cycle; The status and usage of water sources; Environmental legislations, acts and laws			
2	Introduction to aquatic toxicology; Acute and chronic toxicity; Lethal and effective concentrations; additive, antagonistic and synergic effects of toxic matters; bioaccumulation of toxic matters			
3	Heavy metals; the types toxic heavy metals; the toxicity (acute, chronic) of heavy metals; mercury, cadmium and lead venenation; the biomagnification of mercury; the impacts heavy metals to human health and aquatic organisms;			
4	Organic pollution; general view of organic pollutants types (Persistent and biodegradable organic pollutants); Persistent Organic Pollutants (POPs) and effect on aquatic ecosystems;			
5	The types of biocide and pesticide; the damage and toxicity of pesticides; the transfer of pesticides in food chain; the bioaccumulation of pesticides;			
6	DDT and DDT like pesticides; Biomagnification of DDT; the effects on aquatic organisms in nature; pesticide			
Activit	es	Number	Duration (hour)	Total Work Load (hour)
Theore	Water bodies; transmission of waterborne	14	2.00	28.00
Practic	als/Labs	0	0.00	0.00
Self stu	The definition and types of eutrophication;	14	2.00	28.00
Homew	vorks	1	5.00	5.00
Project	Free effects of sedimentation in aquatic second sec	0	0.00	0.00
Field S	tudies	0	0.00	0.00
Mi ble rn	Qiker lution; importance oil pollution	1	15.00	15.00
Others		0	0.00	0.00
Final E	and aquatic ecosystems; the clean up oil spill	1	15.00	15.00
Total W	/ork Load			106.00
Total w	onglanasim30amid ecosystems; the reasons and			3.03
ECTS	Credit of the Course			3.00
12	The effects of nuclear pollution in aquatic ecosystems; the effects of radiation on organisms; Examples; Chernobil and Fukhushima catastrophes;			
13	The effects of air pollution to aquatic ecosystems; The damage of acid rains in aquatic ecosystems;			
14	The protection of water sources; Rapid Bioassessment Techniques, Monitoring studies, biomonitoring; The effects of water pollution to diversity and species richness of aquatic organisms; Bioindicator species and relation to water pollution.			

22	Textl Mate	(tbooks, References and/or Other terials:								Burk A.R. (Ed) (2005). Water pollution: new research. Nova Science Publishers. Akman, Y. A. Düzenli ve F. Geven (1996). Çevre Kirliliği ve Ekolojik Etkileri,								
23	Asse	esment																
TERM LEARNING ACTIVITIES NUMBE R							EWE	WEIGHT										
Midterm Exam 1							30.	30.00										
Quiz 0							0.0	0.00										
Home work-project 1						10.	10.00											
Final Exam 1						1	60.	60.00										
Total							3	3	10	100.00								
Contribution of Term (Year) Learning Activities to Success Grade							40.	40.00										
Contrib	oution	of F	inal E	xam to	o Suco	cess G	rade		60.	60.00								
Total									10	100.00								
Measurement and Evaluation Techniques Used i						ed in th	ie											
24	ECT	rs /	WO	RK L	OAD	TAB	LE		I									
25				CON	TRIE	BUTIO	N O	F LE	ARN	ING	ουτα	COME	S TO I	PROG	RAMI	ME		
								C	QUA	LIFIC	ATIO	NS						
	F	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ1 0	PQ11	PQ12	PQ1 3	PQ14	PQ15	PQ16	
ÖK1	()	1	0	0	0	0	0	0	3	0	0	5	0	0	0	0	
ÖK2	C)	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	
ÖK3	C	C	0	0	0	0	0	0	0	2	0	0	5	0	0	0	0	
ÖK4	C	C	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	
ÖK5	C)	0	0	0	0	0	0	0	0	4	0	5	0	0	0	0	
ÖK6	C	C	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	
ÖK7	C)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
LO: Learning Objectives PQ: Program Qualifications																		
Contrib 1 very low ution Level:		2 low 3 M			Medi	edium 4 High			5 Very High									