

# WATER POLLUTION AND HUMAN HEALTH

<b>1</b>	Course Title:	WATER POLLUTION AND HUMAN HEALTH	
<b>2</b>	Course Code:	BYL2404	
<b>3</b>	Type of Course:	Optional	
<b>4</b>	Level of Course:	First Cycle	
<b>5</b>	Year of Study:	1	
<b>6</b>	Semester:	1	
<b>7</b>	ECTS Credits Allocated:	3.00	
<b>8</b>	Theoretical (hour/week):	2.00	
<b>9</b>	Practice (hour/week):	0.00	
<b>10</b>	Laboratory (hour/week):	0	
<b>11</b>	Prerequisites:	None	
<b>12</b>	Language:	Turkish	
<b>13</b>	Mode of Delivery:	Face to face	
<b>14</b>	Course Coordinator:	Doç. Dr. NURHAYAT DALKIRAN	
<b>15</b>	Course Lecturers:		
<b>16</b>	Contact information of the Course Coordinator:	<p>Uludağ Üniversitesi Fen-Edebiyat Fakültesi Biyoloji Bölümü Görükle Kampüsü, Nilüfer/BURSA 16059 e-posta: dalkiran@uludag.edu.tr Telefon: 0 224 294 1866</p> <p>Uludag University Faculty of Arts and Science Department of Biology Gorukle Campus, Nilufer/BURSA 16059 e-mail: dalkiran@uludag.edu.tr Phone: 0 224 294 1866</p>	
<b>17</b>	Website:		
<b>18</b>	Objective of the Course:	The aim of the course is to provide to understanding of the effects on human health of key types of water pollution. The goals are to teach the specific water pollutant types, their damage of ecosystem and relationships with human health.	
<b>19</b>	Contribution of the Course to Professional Development:		
<b>20</b>	Learning Outcomes:		
		<b>1</b>	Explains actual water pollution problems and their solutions.
		<b>2</b>	Defines the basic concepts of aquatic toxicology.
		<b>3</b>	Explains water pollution types.
		<b>4</b>	Explains the effects of water pollution on aquatic organisms and human being.
		<b>5</b>	Explains the effects of water pollution on aquatic ecosystems.
		<b>6</b>	Understands protecting water resources protects human health
		<b>7</b>	Explains the protection of water sources.
		<b>8</b>	
		<b>9</b>	
		<b>10</b>	
<b>21</b>	Course Content:		

Course Content:			
Week	Theoretical	Practice	
1	Introduction to water pollution, Hydrologic cycle; The status and usage of water sources; some properties of water to support of life;		
2	Water pollution in aquatic ecosystems, water pollution reasons and types, stream, lake, wetland, marine and ground-water pollution		
3	Aquatic toxicology, toxic pollution types and resources, Lethal and effective concentrations; the sensibility of organisms to toxic matters;		
4	Bioconcentration and Biomagnification in water sources		
5	Heavy metals; the environmental problems in aquatic ecosystems and the effects on human health, Health problems caused by Mercury and Cadmium in human and other aquatic organisms in water resources		
6	Heavy metals; Health problems caused by Lead and Arsenic in human and other aquatic organisms in water resources		
7	Organic pollution; Biodegradation of organic pollutants; decomposers (bacteria fungi, slime molds, earthworms); types, origin and importance of organic pollutants in aquatic ecosystems; the sewage types lead to organic pollution in water bodies;		
8	repetition of subjects		
9	Organic pollution and waterborne diseases; microbial pollution in water bodies; transmission of waterborne diseases;		
10	Toxin production on algae, Algal toxin types tipleri (Neurotoxin, Hepatotoxin, Dermotoxin etc.)and effects on human health		
11	Persistent organic pollutants (POPs) in water sources and their toxic effects		
12	Persistent organic pollutants (POPs): The history of DDT pollution and the effect of aquatic organisms and human health		
13	Persistent organic pollutants (POPs): Polichlorinated biphenilys (PCBs) and Dioxins		
14	Pesticides pollutions in aquatic ecosystems, Types of biocide and pesticides; the damage and toxicity of pesticides on human health and aquatic organisms		
22	Textbooks, References and/or Other Materials:	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	Assesment		
TERM LEARNING ACTIVITIES		NUMBE R	WEIGHT
Midterm Exam		1	30.00
Quiz		0	0.00
Home work-project		1	10.00

Final Exam	1	60.00
Total	3	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		
<b>24</b>	<b>ECTS / WORK LOAD TABLE</b>	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	3.00	42.00
Homeworks	1	10.00	10.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	15.00	15.00
Others	0	0.00	0.00
Final Exams	1	20.00	20.00
Total Work Load			130.00
Total work load/ 30 hr			3.83
ECTS Credit of the Course			3.00

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	3	0	0	0	0	0	0	0	4	0	0
ÖK5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>LO: Learning Objectives    PQ: Program Qualifications</b>																
<b>Contribution Level:</b>	<b>1 very low</b>			<b>2 low</b>			<b>3 Medium</b>			<b>4 High</b>			<b>5 Very High</b>			