

BALIKESIR UNIVERSITY
FACULTY OF ENGINEERING
UNIVERSITY ELECTIVE COURSE PROPOSAL FORM

Department / Program	Environmental Engineering/Environmental Technology					
Course Title	USD0XXX- Water Management and Conservation Strategies					
Semester	Fall ☐			Spring ☐		
Language	Turkish ☐			English ☐		
Credits	Theory 2	Application		Total 2		
ECTS	3					
Type of Program	University Elective Course			Normal Education		
Course Objectives	The aim of this course is to provide students with basic knowledge and awareness about the sustainable use, protection, and efficient management of water resources; to contribute to the development of water conservation awareness at both individual and societal levels; and to enable them to evaluate the environmental, economic, and social dimensions of water.					
Course Content	This course will address the status of water resources at global and local scales, the natural water cycle, and areas of water use, as well as the concepts of water scarcity and water stress. It will focus on the protection of water resources, sustainable water management approaches, and water conservation methods. Domestic, agricultural, and industrial water use will be examined, along with the losses and efficiency issues occurring in these sectors. An introduction will be provided to key pollutants affecting water quality and drinking water safety. In addition, the concept of the water footprint, the environmental impacts of individual water consumption, and water use strategies for sustainable living will be evaluated.					
Course Prerequisites	No prerequisite required.					
Instructor	Asst. Prof. Dr. Tülay YILMAZ			mail : tulay.yilmaz@balikesir.edu.tr		
Course Assistants	-					
Course Internship Status	No internship required.					
Course Resources	Metcalf & Eddy, A. E. C. O. M. (2014). <i>Wastewater engineering treatment and resource recovery</i> . McGraw-Hill Education. Mays, L. W. (2010). <i>Water resources engineering</i> . John Wiley & Sons. Muslu, Y. (2001). <i>Su ve atıksu mühendisliği</i> . Türkiye Su Vakfı. UNESCO – WWDR					
Course Category	Natural Sciences					
Planned Learning Activities and Methods	Theoretical instruction, midterm exam, final exam.					
Course Evaluation Criteria			Course ECTS Calculation Content			
Semester Studies	Quantity	Contribution (%)	Activity	Quantity	Duration	Total Work Load (hour)
Midterm	1	40	Course Length	14	2	28
Quiz			Out-of-Class Work Time	14	1	14
Research Homework			Homework	1	20	20
Continuation			Semester Project	1	20	20
Application			Total Work Load : 82			

Project			ECTS Credits : 3	
Semester Final Exam	1	60		
Learning Outcomes		1. Explains the global and local distribution and importance of water resources. 2. Defines the concepts of water scarcity, water stress, and water crisis, and evaluates their main causes. 3. Explains basic approaches to the sustainable use and protection of water resources. 4. Compares the environmental impacts of domestic, agricultural, and industrial water use. 5. Applies and suggests water conservation methods in daily life. 6. Explains the concept of the water footprint and evaluates individual water consumption. 7. Develops awareness of the main pollutants affecting water quality. 8. Interprets the relationship between water resource management and sustainable living.		
Course Topics				
Week	Topic		Pre-Study	Materials
1	Introduction		Preliminary Research on the Relevant Topic	Course Resources and Presentations
2	Distribution of Water Resources			
3	Water Cycle			
4	Water Use			
5	Water Scarcity and Stress			
6	Water Crisis and Sustainability			
7	Midterm Exam			
8	Sustainable Water Management			
9	Domestic Water Conservation			
10	Agricultural Water Management			
11	Industrial Water Management			
12	Water Pollution and Water Quality			
13	Wastewater Management			
14	Water Footprint			
15	General Review, Student Presentations, and Course Evaluation			
Contribution of the Course to Program Outcomes		This course makes a high-level contribution particularly to program outcomes related to sustainability awareness, environmental protection approaches, and the efficient management of water resources. Students gain the ability to analyze current environmental problems such as water scarcity, water stress, and water management, and develop problem-solving and engineering approaches. In addition, by evaluating domestic, agricultural, and industrial water use, students develop interdisciplinary thinking skills. The course supports the adoption of environmental awareness, professional responsibility, and sustainable living principles, contributing at both moderate and high levels to the program outcomes.		