

Course Title-Course Code: ÇEV-519 WASTEWATER TREATMENT					Name of Programme: ENVIRONMENTAL SCIENCES				
Semester	Teaching Methods							Credits	
	Lecture	Recite	Lab.	Projects	Term Paper	Other	Total	Credit	ECTS Credit
1-2	42				100	46	188	3	7,5
Language	Turkish								
Compulsory / Elective	Elective								
Prerequisites	Basic environmental engineering knowledge								
Course Contents	Unit operations in wastewater treatment; physical, chemical and biological processes for treatment of wastewater. Sludge treatment and disposal. Design and operation of a wastewater treatment plant.								
Course Objectives	Preliminary desing of the most widely used wastewater treatment unit operations and organization of these operations into running system. To provide experiences in realistic enviromental engineering desing practice. To develop teamwork and communication skills required for multi-disciplinary enviromental engineering objectives.								
Learning Outcomes and Competences	This course contributes primarily to the students knowledge of engineering topics and does provide desing experience. This course integrates science and engineering principles to design a water treatment facility. The application of scientific and engineering knowledge in solving engineering problems associated with the design and operation of a wastewater treatment plant is exercised to provide experiences in design practice.								
Textbook and /or References	<ul style="list-style-type: none"> Wastewater Engineering: Treatment, Disposal and Reuse. Metcalf and Eddy. Inc.. 3rd Edition. McGrawhill. 1991. Hammer MJ. Hammer MJ. Jr. Water and Wastewater Technology. Prentice Hall. 1996. 								
Assessment Criteria								If any, mark as (X)	Percent (%)
	Midterm Exams							X	30
	Quizzes								
	Homeworks								
	Projects								
	Term Paper							X	20
	Laboratory Work								
	Other							X	10
	Final Exam							X	40
Instructors	Prof.Dr. Metin GÜRÜ								
Week	Subject								

1	Source of Wastewater, Unit Operations and Treatment Methods in Wastewater Treatment (The principles of Wastewater Treatment, Pumping and Equalization, Unit Operations ve Processes, Alternatives of wastewater Treatment System, Sludge Treatment and Disposal Systems)
2	Biological Treatment Systems, Quantity and Quality of Wastewater
3	Design of physical treatment units (Screens, Grit Chambers, Primary Sedimentation Tanks), Design Principles and Examples
4	Chemical Methods in Wastewater Treatment
5	Biological Treatment- Activated Sludge Systems (Design Principles and Examples)
6	Extended Aeration Systems (Design Principles and Examples)
7	Sludge Treatment and Disposal
8	Examination I
9	Biofilm Systems – Trickling Filter (Design Principles and Examples)
10	Biological Contactors (Design Principles and Examples)
11	Simple Treatment System – Design of Mechanical Aerated Tanks
12	Design of Facultative Lagoons and Stabilization Ponds
13	Design of Anaerobic Lagoons, Examples of Wastewater Treatment Systems in Turkey
14	Examination II