

Course Title-Course Code:					Name of Programme:				
ENV 516 GROUNDWATER CONTAMINATION					ENVIRONMENTAL SCIENCES				
Semester	Teaching and Learning Methods (Hours per Semester)							Credits	
	Lecture	Recite	Lab.	Projects	Term paper	Other	Total	Basic Credit	ECTS Credit
1-2	42				100	46	188	3	7,5
Language	Turkish								
Compulsory / Elective	Optional								
Prerequisites	-								
Course Contents	Elements of surface hydrology. Origin, occurrence and movement of groundwater. Waterbear properties of rocks and solids. Well hydraulics. Groundwater exploration. Regional groundwater flow. Groundwater budget.. Fundementel of groundwater modelling and contamination.. Tran equation and dispersion coefficient. Analytical and numerical solution of groundwater pollution problems.. Groundwater quality and sea water intrusion.								
Course Objectives	This course tells the importance of groundwater, theoretical and practical information about groundwater contamination.								
Learning Outcomes and Competences	After this course students can attend groundwater contamination projects with help of theoretical and practical information of this corse.								
Textbook and /or References	1-Contaminant Hydrogeology 2- Erguvanlı, K., Yüzer, E., 1973, Yeraltı Suları Jeolojisi, İTÜ, İstanbul. 3- Edward, E., 1966, Groundwater and Wells, Minnesota, USA. 4- Freeze, R.A., Cherry, J.A., 1979, Groundwater, Prentice Hall, New York, USA. 5- Todd, D.K., 1960, Groundwater Hydrology. 6- Walton, W,C., 1970, Groundwater Resource Evaluation, Mc Graw Hill, New York. Erguv								
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. Nail ÜNSAL								
Week	Subject								
1									
2	Introduction								
3	Origin, occurrence groundwater.								

4	Movement of groundwater.
5	Hydrogeochemical processes and groundwater quality.
6	Fundamental concept of groundwater contamination.
7	Examination
8	Sources and composition of groundwater contaminants
9	Examination
10	Contaminant transport groundwater systems.
11	Transportation equation and dispersion coefficient
12	Fundamental of groundwater modelling and contamination.
13	Sea-water intrusion in coastal aquifer
14	Modelling sea-water intrusion
15	Contaminated groundwater remediation
16	II.Examination