

IM 438 IRRIGATION AND DRAINAGE		CIVIL ENGINEERING	
Spring Semester	Credit Structure		
	Lecture	Recitation	Laboratory
8	3.	0	0
Language	Turkish		
Compulsory / Elective	Elective		
Prerequisites	-		
Catalog Description	Irrigation water demand. Irrigation methods. Irrigation project and network types. Classical irrigation networks. Irrigation systems, estimation of discharge. Design of canals. Drainage canal, maximum velocity and tractive force approach in designing canal. Design of canal. Elements of pressurized irrigation networks, siphon, drop, aqueduct, tunnel, gallery, inlet, check, side weir, automatic siphon.		
Course Objectives	Knowledge of irrigation water demand, irrigation methods and design of irrigation and drainage networks and elements of networks.		
Course Outcomes	Design of irrigation and drainage project and application of hydraulics to irrigation project and hydraulic structures		
Textbook and /or References	“Irrigation and Drainage” by Tülay ÖZBEK and national and international references		
Assessment Criteria		Quantity	Percentage
	Midterm Exams	2	40
	Quizzes	-	-
	Homeworks	5	10
	Projects	-	-
	Term Paper	-	-
	Laboratory Work	-	-
	Other	-	-
	Final Exam	1	50
Course Category by Content (%)	Mathematics and Basic Sciences	20	
	Engineering Science	40	
	Engineering Design	40	
	Social Sciences	-	
Instructors	Prof. Dr. Tülay Özbek		

COURSE PLAN	
Week	Topics
1	Irrigation water demand. Design of canals and elements of canals such as siphon, drop, aqueduct, tunnel, gallery, inlet, check, side weir, automatic siphon.
2	Irrigation project and network types
3	Irrigation methods and systems
4	Estimation of discharge of irrigation and drainage channels
5	Estimation of discharge of irrigation and drainage channels
6	1. Midterm
7	Irrigation networks with open channels
8	Irrigation networks with open channels
9	Drainage channels and stable cross-section approaches.
10	Irrigation networks with canals
11	Pipes and pressurized irrigation networks
12	Hydraulic structures on irrigation network
13	Hydraulic structures on irrigation network
14	2. Midterm

RELATIONSHIP BETWEEN THE COURSE AND DEPARTMENT CURRICULUM				
	Program Outcomes	1	2	3
1	An ability to apply knowledge of mathematics, science, and engineering			x
2	An ability to design and conduct experiments, as well as to analyze and interpret data	x		
3	An ability to design a system, component, or process to meet desired needs			x
4	An ability to function on multi-disciplinary teams		x	
5	An ability to identify, formulate, and solve engineering problems			x
6	An understanding of professional and ethical responsibility			x
7	An ability for effective written and oral communication in Turkish and English	x		
8	The broad education necessary to understand the impact of engineering solutions in a global and societal context		x	
9	A recognition of the need for, and ability to engage in life-long learning			x
10	A knowledge of contemporary issues		x	
11	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice		x	
Contribution of the course : 1:None 2:Partially 3:Completely				