

IM 372 HYDROLOGY		CIVIL ENGINEERING	
Semester	Credit Structure		
	Lecture	Recitation	Laboratory
6	3	0	0
Language	English		
Compulsory / Elective	Compulsory		
Prerequisites	No		
Catalog Description	Hydrologic cycle, precipitation measurement. Hyetograph. Average precipitation depth. Depth area duration curves. Intensity duration curves. Evapotranspiration calculations. Infiltration and index of infiltration. Discharge, elevation, velocity and evaluation. Key curves for discharges. Hydrograph analysis. Flow components. Unit hydrograph, separation of hydrograph, transposition and S-curve techniques, flood computations. Floods with different return periods., statistical analysis of floods and evaluation of data. Statistical parameters. Normal, Log normal, Pearson type-III, Extreme value-I and empirical distributions. Correlation, linear and non-linear regression.		
Course Objectives	The objective of this course is provide the basic hydrological information & tools which are essential in the design of hydraulic structures.		
Course Outcomes	The main hydrological concepts, methodologies and information are provided to assess the design data of hydraulic structures.		
Textbook and /or References	Mc. Cuen, R.H., 1998, Hydrologic Analysis and Design, Prentice Hall, Second Ed. USA.		
Assessment Criteria		Quantity	Percentage
	Midterm Exams	2	40
	Quizzes	-	-
	Homeworks	6	10
	Projects	-	-
	Term Paper	-	-
	Laboratory Work	-	-
	Other	-	-
	Final Exam	1	50
Course Category by Content (%)	Mathematics and Basic Sciences	20	
	Engineering Science	70	
	Engineering Design	10	
	Social Sciences	0	
Instructors	Prof. Dr. Can E. BALAS, Yrd. Doç. Dr. Önder Koçyiğit		

COURSE PLAN

Week	Topics
1	Introduction, hydrologic cycle, water balance
2	Statistical methods in hydrology
3	Statistical methods in hydrology
4	Watershed characteristics
5	Precipitation
6	Stream flow measurements
7	Frequency analysis
8	Frequency analysis, peak discharge estimation
9	Hydrograph analysis and synthesis
10	Hydrograph analysis and synthesis
11	Water yield and snowmelt runoff
12	Evaporation
13	Infiltration
14	Flood routing

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				