


College of Engineering Department of Civil Engineering			
<h2>CE 424 Hydrology</h2>			
Credit and Contact hours	2/ 2 (Lectures), 1 (Tutorials), 0 (Laboratory)		
Required, or Elective	Required for a BSCE degree		
Course Description	Design of inlet structures of irrigation canals, cross structures, culverts, siphons and aqueducts, energy dissipation below hydraulic structures, spillways, and design of dams.		
Prerequisites or Co-requisites	Hydraulics (CE 324)		
Course Learning Outcomes	Students completing this course successfully will be able to		
	Course Learning Outcomes		Related Student Outcomes (SO)
	CLO1. Apply the hydrological cycle as an essential tool in the planning, design, and operation of water recourse systems		SO1
	CLO2. Identify of the elements of the hydrological cycle.		SO1
	CLO3. Conduct appropriate methods to analyze precipitation data.		SO6
	CLO4. Calculate the evaporation and evapotranspiration through experiments and empirical methods.		SO6
	CLO5. Model the stream flow though conducting direct method and modeling unite hydrograph		SO6
	CLO6. Estimate the infiltration by implementing the experiments and empirical methods.		SO6
	CLO7. Apply the principle of groundwater to calculate the groundwater movements.		SO1
Student Outcomes related to this Course	SO1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. [ABET 1] and using modern engineering tools. SO6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. [ABET 6]		

Topics Covered	List of Topics		Related CLOs
	1. Hydrologic cycle and water budget		CLO1
	2. Weather and hydrology		CLO2
	3. Precipitation and rainfall analysis		CLO3
	4. Evaporation Process		CLO4
	5. Stream flow and hydrograph		CLO5
	6. Infiltration Process		CLO6
	7. Groundwater and well hydraulics		CLO7
Textbook(s) and Other Required Material	Engineering Hydrology, Nurunnsisa Usul, Metu Press. Turkey, March 2009.		
Grading System	Two Mid-term exams	40 %	
	Quizzes, Attendance	10%	
	Assignments	10%	
	Final Exam:	40%	
Instructors	Prof. Abdulmohsen A. AlShaikh (2A68), email; amshaikh@ksu.edu.sa		
Date of Review	November, 2020		