

COURSE SYLLABI

Course Code and Name	CE452 Hydrology and water resources			
Credits hours	3 Credit hours			
Contact hours	Contact	Lecture	Lab.	Tutorial
	4	3	0	1
Instructor name	Eng. Faris Hamdi			
Textbook	Subramanya, K. <i>Engineering Hydrology</i> , 3rd Edition, Tata-McGraw Hill, 2008			
Other supplemental materials	The journal of hydrology, journal of hydrological sciences and journal of hydrological processes may be referred to by the students interested in advanced research in the field of hydrology and water resources engineering - Digital library of jazan university, http://deanships.jazanu.edu.sa/lib/Pages/Default.aspx			
Specific course information				
a. Catalog description	This course is designed to teach concepts and physical principles of water flow as well as the techniques that can be used to solve hydrologic problems. The occurrence and distribution of water on Earth is driven by the hydrological cycle, which consists of a set of linked processes that cycle water between the ocean, atmosphere, and land surface. A major objective of the course is to study the individual components of the hydrologic cycle, as well as interactions between these components and their influence on water systems. The physical concepts and methods will be addressed from the perspective of practical applications in water management and associated environmental and infrastructure management. Knowledge of engineering, hydrology is required for the design of water distribution, drainage systems, reservoirs, and for the management of flooding. The skills and knowledge required carrying out the hydrologic analyses and designs that are often encountered in engineering practice will be provided.			
b. Prerequisite	Fluid mechanics			
c. Required / Elective	Required			
Course Specific Goals & Course Learning Outcomes (CLOs)				

Course Learning Outcomes (CLOs)	By the end course: CLO#1 Student able to recognize principles of Hydrology. CLO#2 Students able to estimate the infiltration through soil CLO#3 Students able to develop Unit Hydrographs CLO#4 Students able to calculate reservoir characteristics, evaporation losses and flood routing Self-learn for specific topics CLO#5 Students are able to demonstrate different technique for measuring discharge, velocity and water depth	
Student outcomes that addressed by the course	The following student outcomes are addressed by the course: SO1: An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. So2: An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. SO3: An ability to communicate effectively with a range of audiences.	
Topics to be covered		
Topic		Number of weeks
Introduction to hydrology and the components of hydrological cycle		2
Precipitation (Forms- methods of estimation of mean rainfall over an area)		1
Evaporation and Transpiration		2
Infiltration process—Horton low		2
Stream flows measurement - Velocity measurement		3
Hydrographs – unit hydrographs		3
Reservoir capacity, Flood routing		2
Schedule of Assessment Tasks for Students During the Semester		
Assessment task (i.e., essay, test, quizzes, group project, examination, speech, oral presentation, etc.)	Week due	Proportion of Total Assessment
Homework- Reports	Along semester	10%
Quizzes	Along semester	10%
Midterm-exam	6 th and 8 th week	30%
Activity	Final Exam	20%
Final Exam	Final week	30%

CLO-SO Map							
	S01	S02	S03	S04	S05	S06	S07
CLO 1	√						
CLO 2	√						
CLO 3	√						
CLO4		√					
CLO 5			√				