



Course Weekly Outline

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Course name	Engineering Hydrology		
General course objective	1-Preparing and qualifying specialized engineers to meet the requirements of the labor market in the private and public sectors in civil engineering through diversification of methods of learning and education and training students to apply the acquired knowledge and skills to solve real problems. 2- Providing distinguished academic programs in the field of civil engineering, both theoretical and practical, that comply with international standards of academic quality and meet the needs of the labor market.		
Course description / special objectives	This course serves as an introduction to the field of engineering hydrology. It covers fundamentals such as the hydrological cycle, catchment, hyetographs, losses, and hydrographs. Design topics covered will be selected from: flood frequency analysis, determination of design rainfall intensity and hyetographs, peak flow estimation, design hydrograph estimation, and groundwater process.		
References	Engineering hydrology / E. M. Wilson		
External sources	Engineering hydrology/ Subramanya		
Course assessment	Assignments and quizzes	Midterm Exam	Final exam
	40	10	50
General notes			



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Week No.	Theoretical	Unit-chapter	Aims
1	Introduction and Hydrologic Cycle		This course covers a wide range of different construction methods, their optimal conditions and design methods with the aim of enriching the knowledge base of the civil engineer in the field of construction engineering in a way that enables him to solve potential engineering problems in this field effectively.
2	Precipitations: Forms of Precipitations, Rainfall intensity, Measurement of Precipitation		
3	Precipitations: Mean Areal Depth of Precipitation, Frequency of Point Rainfall		
4	Losses: Evaporation		
5	Losses: Infiltration:		
6	Runoff: Methods of estimation of runoff		
7	Flow Measurement: Water Stage Measurement, Measurements of Discharge		
8	Flow Measurement: Stage-Discharge rating curve, Reservoir mass curve and storage		
9	Hydrographs: components of a hydrograph, factors affecting hydrograph, hydrograph separation		
10	Hydrographs: unit hydrograph, the average unit-hydrograph, the unit-hydrograph from multi-period storms		
11	Hydrographs: The Conversion of U-H Duration, Synthetic UH		
12	Flood Routing: Hydrologic Storage Routing		
13	Flood Routing: Hydrologic Channel Routing		
14	An introduction to Groundwater Hydrology		
15	An introduction to Groundwater Hydrology		