

Lesson Plan

Name of the Faculty: Aakash Shrivastva

Discipline: CIVIL ENGINEERING

Semester: 5th

Subject: HYDROLOGY (CE-305N)

Work Load (Lecture/Practical) per week (in hours): Lectures- , Practicals-

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1 st	1 st	UNIT-I Introduction;	1 st	
	2 nd	Hydrologic cycle,		
	3 rd	scope and application of hydrology to engineering problems		
	4 th	, drainage basins and its characteristics		
2 nd	5 th	, drainage basins and its characteristics	2 nd	
	6 th	stream geometry,		
	7 th	hypsometric curves. Precipitation: Forms and types of precipitation, characteristics of precipitation in India		
	8 th			
3 rd	9 th	, measurement of Precipitation, recording and non-recording rain gauges	3 rd	
	10 th	, rain gauge station, rain gauge network,		
	11 th	estimation of missing data, presentation of rainfall data, mean precipitation,		
	12 th	estimation of missing data, presentation of rainfall data, mean precipitation,		
4 th	13 th	estimation of missing data, presentation of rainfall data, mean precipitation,	4 th	
	14 th	depth-area –duration relationship, frequency of point rainfall		
	15 th	, frequency of point rainfall,		
	16 th	frequency of point rainfall,		
5 th	17 th	intensity-duration- frequency curves, probable max. precipitation.	5 th	

	18 th	UNIT-II Evaporation & Transpiration:		
	19 th	Process, evaporimeters and empirical relationships,		
	20 th	empirical relationships,		
6 th	21 st	analytical method	6 th	
	22 nd	, reservoir evaporation and methods of its control, transpiration,		
	23 rd	evapotranspiration and its measurement		
	24 th	, Penman's equation and potential evapotranspiration.		
7 th	25 th	Infiltration	7 th	
	26 th	Infiltration process,		
	27 th	initial loss, infiltration capacity and		
	28 th	measurement of infiltration,		
8 th	29 th	infiltration indices	8 th	
	30 th	UNIT-III Runoff: Factor affecting run-off,		
	31 st	estimation of runoff,		
	32 nd	rainfall-run off relationships,		
9 th	33 rd	measurement of stage-staff gauge, wire gauge,	9 th	
	34 th	automatic stage recorder and stage hydrograph, measurement of velocity-current meters,		
	35 th	floats, area velocity method, moving boat and slope area method		
	36 th	, electromagnetic, ultra-sonic and dilution methods of stream flow measurement,		
10 th	37 th	stage discharge relationship.	10 th	
	38 th	stage discharge relationship.		
	39 th	Floods and Flood Routing		
	40 th	: Flood frequency studies, recurrence interval		
11 th	41 st	, Gumbel's Method,	11 th	
	42 nd	flood routing,		
	43 rd	reservoir flood routing		
	44 th	, channel flood routing and flood plain mapping.		
12 th	45 th	Hydrograph Discharge hydrograph,	12 th	
	46 th	components and factors affecting shape of hydrograph,		
	47 th	effective rainfall,		
	48 th	unit hydrograph and its derivation,		
13 th	49 th	unit hydrograph of different durations,	13 th	

	50th	use and limitations of UH,		
	51st	triangular UH, Snyder's synthetic UH, floods		
	52nd	, rational methods		
	53rd	empirical formulae.		
14th	54th	UNIT-IV Ground Water: Occurrence, types of aquifers, compressibility of aquifers	14th	
	55th	, water table and its effects on fluctuations ,		
	56th	wells and springs, movement of ground water, Darcy's law, permeability and its determination, porosity,		
15th	57th	specific yield and specific retention, storage coefficient, transmissibility	15th	
	58th	Ground Water Quality: Indian and International standards,		
	59th	pollution of ground water and possible source,		
	60th	remedial and preventive measures.		