PCI5J001-Water Resources Engineering (3-1-0)

LESSON PLAN

Semester- 5th

Branch/Course- Civil Engineering

1	1	Hydrologic cycle
2		Rain gauges
3		Non-Recording and Recording type
4		watershed, Rainfall and its characteristics
5		Average rainfall over a catchment
6		Evapo-transpiration, Pan evaporation, Pan coefficient
7		Infiltration
8		W-Index and Φ-Index
9	2	Stream gauging, Flow rating curve
10		Use of current meters for velocity measurement
11		Dye-dilution method of discharge measurement
12		Estimation of discharge
13		Surprise Test-1
14	3	Characteristics of a Run off hydrograph
15		Unit hydrograph
16		S-hydrograph
17		Instantaneous Unit hydrograph
18		Synthetic Unit hydrograph
19		Duration Curve, Mass flow hydrograph
20		Flood flows, Frequency studies
21		Statistical analysis for flood prediction
22		Method of flood control
23		Reservoir routing and Channel routing
24		River training works
25	4	Definition, Uniform flow
26		Chezy's Kutter's equation
27		Most economical section, specific energy
28		critical, subcritical, supercritical flow
29		Non-uniform flow, Gradual varied flow
30		Hydraulic jump
31		Surprise Test-2

Course Outcome

Course Outcome	Descriptions (Students will be able to)
CO1	Become familiar with different water resources terminology like hydrology, hydrological processes and flow in open channel.
CO2	Understand precipitation processes, spatial and temporal distribution of rainfall, and conduct data analysis.
CO3	Understand factors affecting runoff, rational method, SCS Curve Number Method, and hydrographs.
CO4	Familiar with storm water storage facilities and able to compute storage volumes.
CO5	Understand channel routing process and conduct reservoir routing.
CO6	Become familiar with open channel cross sections, hydrostatic pressure distribution and Manning's law and determine water surface profiles for gradually varied flow in open channels, hydraulic jump.