

Lesson Plan (Practical) – 60 Hours

Weekly Duration: 4 Hours

Total Duration: 15 Weeks


Course: ~~Fluid Mechanics~~, Hydraulics & Irrigation Engineering Practical

Faculty- Smt Bijayalaxmi Hembram and Mr. Siphon Pandey

Week	Hours	Practical Topic / Experiment	Teaching–Learning Activities
1	4	1. Use piezometer to measure pressure at a given point	Introduction of pressure measurement, demonstration of piezometer setup, observation and calculation
2	4	2. U-tube differential manometer to measure pressure difference between two points	Demonstration, reading of manometer levels, calculation of pressure difference
3	4	3. Bernoulli's apparatus – verification of Bernoulli's theorem and energy line	Study of apparatus, measurement of pressure heads, preparation of energy line
4	4	4. Friction factor apparatus – determination of friction factor of pipe	Measurement of head loss, discharge calculation, friction factor determination
5	4	5. Minor losses due to sudden contraction and sudden enlargement	Study of fittings, measurement of head loss, calculations
6	4	6. Minor losses due to bend and elbow	Experimental setup, observation of pressure loss, result analysis
7	4	7. Calibration of Venturi meter for discharge measurement	Demonstration of Venturi meter, discharge measurement, calibration curve preparation
8	4	8. Calibration of Orifice meter for discharge through tank	Measurement of head and discharge, calculation of coefficient of discharge
9	4	9. Current meter to measure velocity of flow in open channel	Field/lab demonstration, velocity measurement, calculations

10	4	10. Pitot tube to measure velocity of flow	Study of Pitot tube principle, observations and calculations
11	4	11. Triangular/Rectangular notch to measure discharge in open channel	Demonstration, discharge measurement, analysis of results
12	4	12. Calculation of average rainfall using Arithmetic Mean, Isohyetal and Thiessen Polygon methods	Rainfall data analysis, preparation of rainfall maps, calculations
13	4	13. Computation of catchment yield and crop water requirement estimation	Study of catchment data, runoff calculation, irrigation water requirement
14	4	14. Estimation of canal capacity and reservoir capacity	Canal design calculations, reservoir storage calculation, data interpretation
			<input type="checkbox"/> Masonry/Earthen dam section <input type="checkbox"/> Gravity dam profile <input type="checkbox"/> Diversion head works & Cross drainage works
15	4	15. Drawing and model preparation of hydraulic structures	<input type="checkbox"/> Irrigation structure model Drawing practice, field visit discussion, model preparation using suitable materials Develop understanding of irrigation structures and their components

Faculty Civil:


12/12/25

HOD Civil:

