



MAHARAJA POLYTECHNIC, GAMEI, BHUBANESWAR.
LESSON PLAN

NAME OF FACULTY:-LAXMAN MAJHI
SUBJECT NAME:-HYDRAULIC & IRRIGATION ENGG.
BRANCH & SEMESTER:-CIVIL ENGG& 4th SEM
TOTAL NO. OF STUDENT IN THE CLASS:-29
TOTAL NO. OF CLASSES REQUIRED:-60
SESSION:-2022-23

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Sl. No.	Topics to be covered	Topics covered on date	Total no. of students present	Verified by HOD	Verified by the principal	Remark
	UNIT:1 HYDROSTATICS					
1	Properties of fluid: density, specific gravity, surface tension, capillarity, viscosity and their uses	10.03.22 - 11.03.22	18 22	<i>[Signature]</i>	<i>[Signature]</i>	
2	Pressure and its measurements: intensity of pressure; atmospheric pressure, gauge pressure, absolute pressure and vacuum pressure; relationship between atmospheric pressure, absolute pressure and gauge pressure; pressure head; pressure gauges.	14.03.22 - 15.03.22	20 19	<i>[Signature]</i>	<i>[Signature]</i>	
3	Pressure exerted on an immersed surface: Total pressure, resultant pressure, expression for total pressure exerted on horizontal & vertical surface. UNIT:2 KINEMATICS OF FLUID FLOW	18.03.22 - 22.03.22	19 22	<i>[Signature]</i>	<i>[Signature]</i>	
4	Basic equation of fluid flow and their application: Rate of discharge, equation of continuity of liquid flow, total energy of a liquid in motion-potential, kinetic & pressure, Bernoulli's theorem and its limitations. Practical applications of Bernoulli's equation.	28.03.22 - 04.04.22	25 18	<i>[Signature]</i>	<i>[Signature]</i>	
5	Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs, Discharge through different types of notches and weirs-their application (No Derivation)	04.04.22 - 08.04.22	19 19	<i>[Signature]</i>	<i>[Signature]</i>	

6	Types of flow through the pipes: uniform and non uniform; laminar and turbulent; steady and unsteady; Reynold's number and its application	9.4.22	18		
7	Losses of head of a liquid flowing through pipes: Different types of major and minor losses. Simple numerical problems on losses due to friction using Darcy's equation, Total energy lines & hydraulic gradient lines (Concept Only).	11.4.22	18		
8	Flow through the Open Channels: Types of channel sections-rectangular, trapezoidal and circular, discharge formulae- Chezy's and Manning's equation, Best economical section.	12.4.22	20		
	UNIT:3 PUMPS	13.4.22	20		
	Type of pumps	14.4.22	20		
9	Centrifugal pump: basic principles, operation, discharge, horse power & efficiency.	19.4.22	20		
10	Reciprocating pumps: types, operation, discharge, horse power & efficiency	20.4.22	20		
	UNIT (B):1 Hydrology	21.4.22	19		
11	Hydrology Cycle	22.4.22	20		
12	Rainfall: types, intensity, hyetograph	23.4.22	25		
13	Estimation of rainfall, rain gauges, Its types(concept only),	24.4.22	25		
14	Concept of catchment area, types, run-off, estimation of flood discharge by Dicken's and Ryve's formulae	25.4.22	25		
	UNIT (B):2 Water Requirement of Crops	26.4.22	21		
15	Definition of irrigation, necessity, benefits of irrigation, types of irrigation	15.5.22	21		
16	Crop season	16.5.22	21		
17	Duty, Delta and base period their relationship, overlap allowance, kharif and rabi crops	17.5.22	15		
18	Gross command area, culturable command area, Intensity of Irrigation, irrigable area, time factor, crop ratio	18.5.22	25		
	UNIT (B):3 FLOW IRRIGATION	19.5.22	25		
19	Canal irrigation, types of canals, loss of water in canals	20.5.22	21		
20	Perennial irrigation	21.5.22	21		

21	Different components of irrigation canals and their functions	28.5.22	17			
22	Sketches of different canal cross-sections	28.5.22	17			
23	Classification of canals according to their alignment, Various types of canal lining - Advantages and disadvantages	28.5.22	20			
24	UNIT (B):4 WATER LOGGING AND DRAINAGE					
25	Causes and effects of water logging, detection, prevention and remedies	29.5.22	21			
	UNIT (B):5 DIVERSION HEAD WORKS AND REGULATORY STRUCTURES	30.5.22	21			
26	Necessity and objectives of diversion head works, weirs and barrages	2.6.22	22			
27	General layout, functions of different parts of barrage	3.6.22	22			
28	Silting and scouring	4.6.22	18			
29	Functions of regulatory structures	4.6.22	18			
	UNIT (B):6 CROSS DRAINAGE WORKS					
30	Functions and necessity of Cross drainage works - aqueduct, siphon, super-passage, level crossing	5.6.22	20			
31	Concept of each with help of neat sketch	5.6.22	20			
	UNIT (B):7 DAMS					
32	Necessity of storage reservoirs, types of dams	6.6.22	19			
33	Earthen dams: types, description, causes of failure and protection measures.	5-6.22	20			
34	Gravity dam- types, description, Causes of failure and protection measures.	6.6.22	20			
35	Spillways- Types (With Sketch) and necessity.					

SIGN OF FACULTY

SIGN OF HOD

SIGN OF PRINCIPAL

Signature
15.06.22

Signature
15/06/22

Signature
15/06/22