



GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR

BRANCH:- CIVIL ENGINEERING

SEMESTER:- 4th

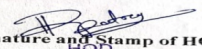
SUBJECT:- Th2. HYDRAULICS & IRRIGATION ENGINEERING

Name of the Faculty - ER. SRIDHAR SAHU & ER. MAMINI GOUDA

			TOPICS TO BE TAKEN			ACTUALLY TOPIC TAKEN		
Sl. No	Topic/Module	No. of period	Details of the topics	Date	Topic No.	Topic Name	Date	Remarks
PART: A (HYDRAULICS & MACHINES)								
1	Hydrostatics	12	1.1 Properties of fluid: density, specific gravity, surface tension, capillarity, viscosity and their uses. 1.2 Pressure and its measurements. 1.3 Pressure exerted on an immersed surface: Total pressure, resultant pressure, expression for total pressure exerted on horizontal & vertical surface.	16.01.2024-03.02.2024	1.1 1.2 1.3	Properties of fluid: density, specific gravity, surface tension, capillarity, viscosity and their uses. Pressure and its measurements. Pressure exerted on an immersed surface: Total pressure, resultant pressure, expression for total pressure exerted on horizontal & vertical surface.	18.01.2024 19.01.2024 25.01.2024 31.01.2024 01.02.2024 07.02.2024 08.02.2024 13.02.2024	
2	Kinematics Of Fluid Flow	18	2.1 Basic equation of fluid flow and their application. 2.2 Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs, Discharge through different types of notches and weirs-their application. 2.4 Losses of head of a liquid flowing through pipes: Different types of major and minor losses. 2.5 Flow through the Open Channels.	05.02.2024-26.02.2024	2.1 2.2 2.4 2.5	Basic equation of fluid flow and their application. Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs, Discharge through different types of notches and weirs-their application. Losses of head of a liquid flowing through pipes: Different types of major and minor losses. Flow through the Open Channels.	20.02.2024 21.02.2024 23.02.2024 06.03.2024 12.03.2024 19.03.2024 21.03.2024 28.03.2024 02.04.2024	

3	Pumps	5	3.1 Type of pumps 3.2 Centrifugal pump: basic principles, operation, discharge, horse power & efficiency. 3.3 Reciprocating pumps: types, operation, discharge, horse power & efficiency	27.02.2024-02.03.2024	3.1 3.2 3.3	Type of pumps Centrifugal pump: basic principles, operation, discharge, horse power & efficiency. Reciprocating pumps: types, operation, discharge, horse power & efficiency	04.04.2024 05.04.2024	
PART: B (IRRIGATION ENGINEERING)								
1	Hydrology	4	1.1 Hydrology Cycle 1.2 Rainfall: types, intensity, hyetograph 1.3 Estimation of rainfall, rain gauges, Its types. 1.4 Concept of catchment area, types, run-off, estimation of flood discharge by Dicken's and Ryve's formulae	04.03.2024-09.03.2024	1.1 1.2 1.3 1.4	Hydrology Cycle Rainfall: types, intensity, hyetograph Estimation of rainfall, rain gauges, Its types. Concept of catchment area, types, run-off, estimation of flood discharge by Dicken's and Ryve's formulae	24.01.2024 02.02.2024 09.02.2024 15.02.2024	
2	Water Requirement Of Crops	4	2.1 Definition of irrigation, necessity, benefits of irrigation, types of irrigation 2.2 Crop season 2.3 Duty, Delta and base period their relationship, overlap allowance, kharif and rabi crops 2.4 Gross command area, culturable command area, Intensity of Irrigation, irrigable area, time factor, crop ratio	11.03.2024-14.03.2024	2.1 2.2 2.3 2.4	Definition of irrigation, necessity, benefits of irrigation, types of irrigation Crop season Duty, Delta and base period their relationship, overlap allowance, kharif and rabi crops Gross command area, culturable command area, Intensity of Irrigation, irrigable area, time factor, crop ratio	22.02.2024 07.03.2024	
3	Flow Irrigation	7	3.1 Canal irrigation, types of canals, loss of water in canals 3.2 Perennial irrigation 3.3 Different components of irrigation canals and their functions 3.4 Sketches of different canal cross-sections 3.5 Classification of canals according to their alignment, Various types of canal lining – Advantages and disadvantages	15.03.2024-22.03.2024	3.1 3.2 3.3 3.4	Canal irrigation, types of canals, loss of water in canals Perennial irrigation Different components of irrigation canals and their functions Sketches of different canal cross-sections Classification of canals according to their alignment, Various types of canal lining – Advantages and disadvantages	14.03.2024 20.03.2024 27.03.2024 03.04.2024	

4	Water Logging And Drainage	2	4.1 Causes and effects of water logging, detection, prevention and remedies	23.03.2024-27.03.2024	4.1	4.1 Causes and effects of water logging, detection, prevention and remedies	10.04.2024	
5	Diversion Head Works And Regulatory Structures	8	5.1 Necessity and objectives of diversion head works, weirs and barrages 5.2 General layout, functions of different parts of barrage 5.3 Silting and scouring 5.4 Functions of regulatory structures	28.03.2024-08.04.2024	5.1 5.2 5.3 5.4	Necessity and objectives of diversion head works, weirs and barrages General layout, functions of different parts of barrage Siltling and scouring Functions of regulatory structures	12.04.2024 16.04.2024 18.04.2024	
6	Cross Drainage Works	7	6.1 Functions and necessity of Cross drainage works - aqueduct, siphon, superpassage, level crossing 6.2 Concept of each with help of neat sketch	09.04.2024-18.04.2024	6.1 6.2	Functions and necessity of Cross drainage works - aqueduct, siphon, superpassage, level crossing Concept of each with help of neat sketch	19.04.2024 23.04.2024	
7	Dams	8	7.1 Necessity of storage reservoirs, types of dams 7.2 Earthen dams: types, description, causes of failure and protection measures. 7.3 Gravity dam- types, description, Causes of failure and protection measures. 7.4 Spillways- Types (With Sketch) and necessity.	19.04.2024-26.04.2024	7.1 7.2 7.3 7.4	Necessity of storage reservoirs, types of dams Earthen dams: types, description, causes of failure and protection measures. Gravity dam- types, description, Causes of failure and protection measures. Spillways- Types (With Sketch) and necessity.	24.04.2024 25.04.2024 26.04.2024	


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