PNS SCHOOL OF ENGINEERING &TECHNOLOGY

LESSION PLAN

BRANCH-CIVIL	SEMESTER-4TH	NAME OF THE FACULTY-Er.GAYATREE SAHOO
SUBJECT- HYDRAULICS & IRRIGATION ENGG	NO OF DAYS PER WEEK -6 CLASS ALLOTTED-75	SEMESTER FROM 13.02.2023 TO 24.05.2023
WEEK	CLASS DAY	CLASS DAY
FREBUARY-3RD	1ST	HYDROSTATICS:INTRODUCTION
	2ND	Properties of fluid: density, specific gravity, surface tension,
	3RD	capillarity,viscosity and their uses
	4TH	2 Pressure and its measurements: intensity of pressure, atmospheric pressure, gauge pressure, absolute pressure and vacuum pressure;
	5TH(2CLASS)	; relationship between atmospheric pressure, absolute pressure and gauge pressure; pressure head; pressure gauges
4TH	1ST	Pressure exerted on an immersed surface: Total pressure, resultant pressure, expression for total pressure exerted on horizontal & vertical surface
	2ND	CONTINUE
	3RD	KINEMATICS OF FLUID FLOW:INTRODUCTION
	4TH	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
	5TH(2CLASS	Practical applications of Bernoulli's equation
5TH	1ST	CONTINUE
	2ND	CONTINUE
MARCH -1ST	1ST	2 Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs,
	2ND	Discharge through different types of notches and weirs-their application (No Derivation)
	3RD	3 Types of flow through the pipes: uniform and non uniform; laminar and turbulent
	4TH	steady and unsteady; Reynold's number and its application
2ND	1ST	Losses of head of a liquid flowing through pipes: Different types of major and minor losses.
	4TH	Simple numerical problems on losses due to friction using Darcy's equation, Total energy lines & hydraulic gradient lines
	5TH(2CLASS)	Flow through the Open Channels: Types of channel sections-rectangular, trapezoidal and circular,
	1ST	discharge formulae- Chezy's and Manning's equation, Best economical section.

3RD	2ND	PUMPS: Type of pumps
	3RD	Centrifugal pump: basic principles, operation, discharge, horse power & efficiency
	4TH	3 Reciprocating pumps: types, operation, discharge, horse power & efficiency
	5TH(2CLASS)	CONTINUE
4TH	1ST	Hydrology: Hydrology Cycle
	2ND	Rainfall: types, intensity, hyetograph
	3RD	Estimation of rainfall, rain gauges, Its types(concept only)
	4TH	Concept of catchment area, types, run-off, estimation of flood discharge by Dicken's and Ryve's formulae
	5TH(2CLASS)	CONTINUE
5TH	1ST	Water Requirement of Crops Definition of irrigation, necessity, benefits of irrigation, types of irrigation
	2ND	Crop season
	3RD	Duty, Delta and base period their relationship, overlap allowance, kharif and rabi crops
	5TH(2CLASS)	Gross command area, culturable command area, Intensity of Irrigation, irrigable area, time factor, crop ratio
APRIL-2ND	1ST	FLOW IRRIGATION: Canal irrigation, types of canals, loss of water in canals
	2ND	Perennial irrigation
	3RD	Different components of irrigation canals and their functions
	4TH	Sketches of different canal cross-sections
3RD	1ST	Classification of canals according to their alignment, Various types of canal lining – Advantages and disadvantages
	2ND	WATER LOGGING AND DRAINAGE :1 Causes and effects of water logging
	3RD	detection, prevention and remedies OF water logging
	4TH	DIVERSION HEAD WORKS AND REGULATORY STRUCTURES: Necessity and objectives of diversion head works, weirs and barrages
4TH	1ST	CONTINUE
	2ND	2 General layout, functions of different parts of barrage
	3RD	Silting and scouring
	4TH	Functions of regulatory structures
	5TH(2CLASS)	CONTINUE
5TH	1ST	CROSS DRAINAGE WORKS :INTRODUCTION
	2ND	Functions and necessity of Cross drainage works
	3RD	aqueduct, siphon, superpassage, level crossing
	4TH	CONTINUE
	5TH(2CLASS)	CONTINUE
MAY-1ST	1ST	Concept of each with help of neat sketch
	2ND	CONTINUE
	3RD	DAMS:INTRODUCTION

	4TH	Necessity of storage reservoirs, types of dams
2ND	1ST	CONTINUE
	2ND	Earthen dams: types, description
	3RD	causes of failure and protection measures
	4TH	3 Gravity dam- types, description
	5TH(2CLASS)	Causes of failure and protection measures
3rd	1ST	CONTINUE
	2ND	Spillways- Types (With Sketch)
	3RD	CONTINUE
	4TH	Necesity of spillway
	5TH(2CLASS)	CONTINUE
4TH	1ST	CONTINUE
	2ND	Discuss about previous year qustions
	3RD	Discuss about previous year qustions

Gayatri Sahoo

SIGN OF LECTURE

Sudeepta Mishra

SIGN OF HOD