

LESSON PLAN (2023-2024)-(S)					
ACADEMIC SESSION-23-24(S-24)					
BRANCH-CIVIL ENGG			Name of The Teaching Faculty: -Anita Pradhan		
Subject-HYDRAULICS& IRRIGATION ENGINEERING (TH-II)			Semester From Date:16-01-2024 To Date 26-04-2024		
SEMESTER-4TH			No. Of Weeks:17		5P/WEEK
No. of Days/week class allotted:05period per week(Mon,Tues, Wed,Thu &Sat -1 Period each)					TOTAL PERIOD-75
MONT H	Week	DATE	DAYS	Syllabus to be covered	NO. OF PERIODS AVAILABLE
				PART: A (Hydraulics)	
				1 HYDROSTATICS:(12P)	12
J A N U A R Y	3rd	16.01.2024	TUE	Properties of fluid: density, specific gravity, surface tension.	1
		17.01.2024	WED	capillarity,viscosity and their uses	1
		18.01.2024	THUS	Pressure and its measurements: intensity of pressure, atmospheric pressure	1
		20.01.2024	SAT	Pressure and its measurements: intensity of pressure, atmospheric pressure	1
	4th	22.01.2024	MON	Gauge pressure, absolute pressure and vacuum pressure.	1
		24.01.2024	WED	Gauge pressure, absolute pressure and vacuum pressure.	1
		25.01.2024	THUS	Rrelationship between atmospheric pressure, absolute pressure and gauge pressure;	1
		27.01.2024	SAT	Relationship between atmospheric pressure, absolute pressure and gauge pressure;	1
	5th	29.01.2024	MON	Pressure head; pressure gauges.	1
		30.01.2024	TUE	Pressure exerted on an immersed surface: Total pressure,	1
		31.01.2024	WED	Resultant pressure, expression for total pressure exerted on horizontal & vertical surface.	1
		1st	1.2.2024	THUS	Resultant pressure, expression for total pressure exerted on horizontal & vertical surface.
				KINEMATICS OF FLUID FLOW: (18P)	18
3.02.2024			SAT	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,	1
5.02.2024		MON	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	1	

FEBRUARY

2nd	6.02.2024	TUE	Bernoulli's theorem and its limitations. Practical applications Bernoulli's equation.	1
	7.02.2024	WED	Bernoulli's theorem and its limitations. Practical applications Bernoulli's equation.	1
	8.02.2024	THUS	Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs,	1
	10.02.2024	SAT	Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs,	1
3rd	12.02.2024	MON	Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs,	1
	13.02.2024	TUE	Discharge through different types of notches and weirs-their application (No Derivation)	1
	15.02.2024	THUS	Discharge through different types of notches and weirs-their application (No Derivation)	1
	17.02.2024	SAT	Types of flow through the pipes:uniform and non uniform; laminar and turbulent flow.	1
4th	19.02.2024	MON	Uniform and non uniform; laminar and turbulent flow.	1
	20.02.2024	TUE	Turbulent; steady and unsteady; Reynold's number and its application	1
	21.02.2024	WED	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	1
	22.02.2024	THUS	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 Darcys equation.	1
	24.02.2024	SAT	Total energy lines & hydraulic gradient lines (Concept Only).	1
5th	26.02.2024	MON	Flow through the Open Channels: Types of channel sections- rectangular, trapezoidal and circular, discharge formulae- Chezy's and Manning's equation,	1
	27.02.2024	TUE	Flow through the Open Channels: Types of channel sections- rectangular, trapezoidal and circular, discharge formulae- Chezy's and Manning's equation,	1
	28.02.2024	WED	Best economical section.	1
			CHAPTER -3 PUMPS (5P)	5
	29.02.2024	THUS	Type of pumps	1

M A R C H	1st	2.03.2024	SAT	3.2 Centrifugal pump: basic principles, operation, discharge, horse power & efficiency.	1
	2nd	4.03.2024	MON	Centrifugal pump: basic principles, operation, discharge, horse power & efficiency.	1
		6.03.2024	WED	Reciprocating pumps: types, operation, discharge, horse power & efficiency	1
		7.03.2024	THUS	Reciprocating pumps: types, operation, discharge, horse power & efficiency	1
				PART: B (Irrigation Engineering)	
				Hydrology (4P)	4
		9.03.2024	SAT	Hydrology Cycle	1
	3rd	11.03.2024	MON	Rainfall: types, intensity, hyetograph	1
		12.03.2024	TUE	Estimation of rainfall, rain gauges, Its types(concept only),	1
		13.03.2024	WED	Concept of catchment area, types, run-off, estimation of flood discharge by Dicken's and Ryve's formulae	1
				2. WATER REQUIREMENT OF CROPS (4P)	4
		14.03.2024	THUS	Definition of irrigation, necessity, benefits of irrigation, types of irrigation	1
	4th	16.03.2024	SAT	Crop season	1
		18.03.2024	MON	Duty, Delta and base period their relationship, overlap allowance, kharifand rabi crops	1
		19.03.2024	TUE	Gross command area, culturable command area, Intensity of Irrigation,irrigable area, time factor, crop ratio	1
				3.FLOW IRRIGATION (7P)	7
		20.03.2024	WED	Canal irrigation, types of canals, loss of water in canals	1
		21.03.2024	THUS	Canal irrigation, types of canals, loss of water in canals	1
		23.03.2024	SAT	Perennial irrigation	1
	5th	27.03.2024	WED	Different components of irrigation canals and their functions	1
		28.03.2024	THUS	Sketches of different canal cross-sections	1
		30.03.2024	SAT	Classification of canals according to their alignment, Various types of canal lining – Advantages and disadvantages	1
		1st	2.04.2024	TUE	Classification of canals according to their alignment, Various types of canal lining – Advantages and disadvantages
				4.WATER LOGGING AND DRAINAGE (2P)	2
	3.04.2024		WED	Causes and effects of water logging, detection, prevention and remedies	1
	4.04.2024		THUS	prevention and remedies	1
				5.DIVERSION HEAD WORKS AND REGULATORY	8
6.04.2024	SAT		Necessity and objectives of diversion head works, weirs and barrages	1	
8.04.2024	MON	Necessity and objectives of diversion head works, weirs and barrages	1		

A P R I L	2nd	9.04.2024	TUE	General layout, functions of different parts of barrage	1
		10.04.2024	WED	General layout, functions of different parts of barrage	1
		13.04.2024	SAT	Definitions of management	1
	3rd	15.04.2024	MON	General layout, functions of different parts of barrage	1
		16.04.2024	TUE	Silting and scouring	1
		18.04.2024	THUS	Functions of regulatory structures	1
				6.CROSS DRAINAGE WORKS(7P)	7
		20.04.2024	SAT	Functions and necessity of Cross drainage works - aqueduct, siphon, superpassage, level crossing	1
		22.04.2024	MON	Functions and necessity of Cross drainage works - aqueduct, siphon, superpassage, level crossing	1
		23.04.2024	TUE	Functions and necessity of Cross drainage works - aqueduct, siphon, superpassage, level crossing	1
	4th	24.04.2024	WED	siphon, superpassage, level crossing	1
		25.04.2024	THUS	Concept of each with help of neat sketch	1
				Concept of each with help of neat sketch	1
				Concept of each with help of neat sketch	1
			7 DAMS	8	
			Necessity of storage reservoirs, types of dams	1	
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		Earthen dams: types, description, causes of failure and protection measures.	1		
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		Gravity dam- types, description, Causes of failure and protection measures.	1		
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		Spillways- Types (With Sketch) and necessity.	1		
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