

LESSON PLAN (2022-23)-(S)					
ACADEMIC SESSION-22-23(S-23)					
BRANCH-CIVIL ENGG			Name of The Teaching Faculty: -Anita Pradhan		
Subject-HYDRAULICS& IRRIGATION ENGINEERING (TH-II)			Semester From Date:14-02-2023 To Date 23-05-2023		
SEMESTER-4TH				No. Of Weeks:	5P/WEEK
No. of Days/week class allotted:05period per week(Mon,Tues, Wed,Thu &Fri 1 Period each)					TOTAL PERIOD-75
MONTH	Week	DATE	DAYS	Syllabus to be covered	NO. OF PERIODS AVAILABLE
				PART: A (Hydraulics)	
				1 HYDROSTATICS:(12P)	12
FEB	3rd	14/02/2023	Tuesday	Properties of fluid: density, specific gravity, surface tension.	1
		15/02/2023	Wednesday	capillarity,viscosity and their uses	1
		16/02/2023	Thursday	Pressure and its measurements: intensity of pressure, atmospheric pressure	1
		17/02/2023	Friday	Pressure and its measurements: intensity of pressure, atmospheric pressure	1
	4th	20/02/2023	Monday	Gauge pressure, absolute pressure and vacuum pressure.	1
		21/02/2023	Tuesday	Gauge pressure, absolute pressure and vacuum pressure.	1
		22/02/2023	Wednesday	Rrelationship between atmospheric pressure, absolute pressure and gauge pressure;	1
		23/02/2023	Thursday	Relationship between atmospheric pressure, absolute pressure and gauge pressure;	1
		24/02/2023	Friday	Pressure head; pressure gauges.	1
	5th	27/02/2023	Monday	Pressure exerted on an immersed surface: Total pressure,	1
		28/02/2023	Tuesday	Resultant pressure, expression for total pressure exerted on horizontal & vertical surface.	1
	1st	01/03/2023	Wednesday	Resultant pressure, expression for total pressure exerted on horizontal & vertical surface.	1
			KINEMATICS OF FLUID FLOW: (18P)	18	
02/03/2023		Thursday	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	
03/03/2023		Friday	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	
2nd		06/03/2023	Monday	Bernoulli's theorem and its limitations. Practical applications Bernoulli's equation.	1
		09/03/2023	Thursday	Bernoulli's theorem and its limitations. Practical applications Bernoulli's equation.	1

MAR		10/03/2023	Friday	Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs,	1
	3rd	13/03/2023	Monday	Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs,	1
		14/03/2023	Tuesday	Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs,	1
		15/03/2023	Wednesday	Discharge through different types of notches and weirs-their application (No Derivation)	1
		16/03/2023	Thursday	Discharge through different types of notches and weirs-their application (No Derivation)	1
		17/03/2023	Friday	Types of flow through the pipes:uniform and non uniform; laminar and turbulent flow.	1
		20/03/2023	Monday	Uniform and non uniform; laminar and turbulent flow.	1
	4th	21/03/2023	Tuesday	Turbulent; steady and unsteady; Reynold's number and its application	1
		22/03/2023	Wednesday	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
		23/03/2023	Thursday	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
		24/03/2023	Friday	Total energy lines & hydraulic gradient lines (Concept Only).	1
		5th	27/03/2023	Monday	Flow through the Open Channels: Types of channel sections-rectangular, trapezoidal and circular, discharge formulae- Chezy's and Manning's equation,
	28/03/2023		Tuesday	Flow through the Open Channels: Types of channel sections-rectangular, trapezoidal and circular, discharge formulae- Chezy's and Manning's equation,	1
	29/03/2023		Wednesday	Best economical section.	1
				CHAPTER -3 PUMPS (5P)	5
	31/03/2023		Friday	Type of pumps	1
	2nd	03/04/2023	Monday	3.2 Centrifugal pump: basic principles, operation, discharge, horse power & efficiency.	1
		04/04/2023	Tuesday	Centrifugal pump: basic principles, operation, discharge, horse power & efficiency.	1
		05/04/2023	Wednesday	Reciprocating pumps: types, operation, discharge, horse power & efficiency	1
		06/04/2023	Thursday	Reciprocating pumps: types, operation, discharge, horse power & efficiency	1
				PART: B (Irrigation Engineering)	
				Hydrology (4P)	4
		10/04/2023	Monday	Hydrology Cycle	1
		11/04/2023	Tuesday	Rainfall: types, intensity, hyetograph	1

APR	3rd	12/04/2023	Wednesday	Estimation of rainfall, rain gauges, Its types(concept only),	1	
		13/04/2023	Thursday	Concept of catchment area, types, run-off, estimation of flood discharge by Dicken's and Ryve's formulae	1	
	4th			2 Water Requirement of Crops (4P)	4	
		17/04/2023	Monday	Definition of irrigation, necessity, benefits of irrigation, types of irrigation	1	
		18/04/2023	Tuesday	Crop season	1	
		19/04/2023	Wednesday	Duty, Delta and base period their relationship, overlap allowance, kharifand rabi crops	1	
		20/04/2023	Thursday	Gross command area, culturable command area, Intensity of Irrigation,irrigable area, time factor, crop ratio	1	
				3.FLOW IRRIGATION (7P)	7	
		21/04/2023	Friday	Canal irrigation, types of canals, loss of water in canals	1	
		24/04/2023	Monday	Canal irrigation, types of canals, loss of water in canals	1	
		25/04/2023	Tuesday	Perennial irrigation	1	
		26/04/2023	Wednesday	Different components of irrigation canals and their functions	1	
	5th	27/04/2023	Thursday	Sketches of different canal cross-sections	1	
		28/04/2023	Friday	Classification of canals according to their alignment, Various types of canal lining – Advantages and disadvantages	1	
	MAY	1st	01/05/2023	Monday	Classification of canals according to their alignment, Various types of canal lining – Advantages and disadvantages	1
					4.WATER LOGGING AND DRAINAGE (2P)	2
02/05/2023			Tuesday	Causes and effects of water logging, detection, prevention and remedies	1	
03/05/2023			Wednesday	prevention and remedies	1	
				5.DIVERSION HEAD WORKS AND REGULATORY STRUCTURES (8P)	8	
2nd		04/05/2023	Thursday	Necessity and objectives of diversion head works, weirs and barrages	1	
		08/05/2023	Monday	Necessity and objectives of diversion head works, weirs and barrages	1	
		09/05/2023	Tuesday	General layout, functions of different parts of barrage	1	
		10/05/2023	Wednesday	General layout, functions of different parts of barrage	1	
		11/05/2023	Thursday	Definitions of management	1	
		12/05/2023	Friday	General layout, functions of different parts of barrage	1	
		3rd	15/05/2023	Monday	Silting and scouring	1
			16/05/2023	Tuesday	Functions of regulatory structures	1
					6.CROSS DRAINAGE WORKS(7P)	7
			17/05/2023	Wednesday	Functions and necessity of Cross drainage works - aqueduct, siphon, superpassage, level crossing	1
18/05/2023			Thursday	Functions and necessity of Cross drainage works - aqueduct, siphon, superpassage, level crossing	1	
4th		22/05/2023	Monday	Functions and necessity of Cross drainage works - aqueduct, siphon, superpassage, level crossing	1	
		23/05/2023	Tuesday	Functions and necessity of Cross drainage works - aqueduct, siphon, superpassage, level crossing	1	
EXTRA CLASS ES				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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