

PROGRAMME : CIVIL ENGINEERING COURSE NAME : H&IE COURSE CODE : TH-2 SEMESTER : 4th sem PERIODS/WEEK: 5 TOTAL PERIODS: 75	NAME OF THE FACULTY: MANASI PRADHAN SESSION : 2020-2021 DATE : 05-04-2021 to 30-06-2021
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WEEK	CLASS	TOPICS
1	1	HYDROSTATICS: Properties of fluid
	2	density, specific gravity, surface tension, capillarity
	3	viscosity and their uses
	4	Pressure and its measurements
	5	intensity of pressure, atmospheric pressure, gauge pressure, absolute pressure and vacuum pressure;
2	1	relationship between atmospheric pressure, absolute pressure and gauge pressure
	2	pressure head; pressure gauges. Pressure exerted on an immersed surface
	3	Total pressure, resultant pressure, expression for total pressure exerted on horizontal & vertical surface
	4	KINEMATICS OF FLUID FLOW
	5	Basic equation of fluid flow and their application
3	1	Rate of discharge, equation of continuity of liquid flow, total energy of a liquid in motion
	2	potential, kinetic & pressure, Bernoulli's theorem and its limitations.
	3	Practical applications of Bernoulli's equation.
	4	Flow over Notches and Weirs
	5	Notches, Weirs, types of notches and weirs, Discharge through different types of notches and weirs-their application
4	1	Types of flow through the pipes: uniform and non uniform, laminar and turbulent; steady and unsteady; Reynold's number and its application
	2	Losses of head of a liquid flowing through pipes: Different types of major and minor losses.
	3	Simple numerical problems on losses due to friction using Darcy's equation, Total energy lines & hydraulic gradient lines
	4	Flow through the Open Channels: Types of channel sections-rectangular, trapezoidal and circular,
	5	discharge formulae- Chezy's and Manning's equation, Best economical section.
5	1	Irrigation Engineering: Hydrology
	2	Hydrology Cycle, Rainfall: types, intensity, hyetograph
	3	Estimation of rainfall, rain gauges, Its types
	4	Concept of catchment area, types, run-off, estimation of flood discharge by Dicken's and Ryve's formulae

	5	Water Requirement of Crops, Definition of irrigation, necessity
6	1	benefits of irrigation, types of irrigation
	2	Crop season, Duty, Delta and base period.
	3	Relationship between duty delta base.
	4	overlap allowance, kharif and rabi and kharif crops
	5	Gross command area, culturable command area, Intensity of Irrigation,
7	1	irrigable area, time factor, crop ratio
	2	FLOW IRRIGATION: Canal irrigation, types of canals
	3	loss of water in canals Perennial irrigation, Different components of irrigation canals and their function
	4	Sketches of different canal cross-sections, Classification of canals according to their alignment
	5	Various types of canal lining – Advantages and disadvantages
8	1	WATER LOGGING AND DRAINAGE : Causes and effects of water logging,
	2	detection, prevention and remedies of water logging.
	3	PUMPS: Type of pumps
	4	Centrifugal pump: basic principles, operation, discharge
	5	horse power & efficiency.
9	1	Reciprocating pumps: types, operation, discharge, horse power & efficiency.
	2	DIVERSION HEAD WORKS AND REGULATORY STRUCTURES
	3	Necessity and objectives of diversion head works, weirs and barrages
	4	General layout, functions of different parts of barrage Silting and scouring, Functions of regulatory structures
	5	Functions and necessity of Cross drainage works
10	1	types of dams
	2	Earthen dams: types
	3	description, causes of failure and protection measures
	4	Gravity dam- types
	5	Gravity dam- description
11	1	Causes of failure and protection measures.
	2	Spillways
	3	Types of spillways
	4	necessity of spillways
	5	Revision of chapter-1&2
12	1	Revision of chapter-3
	2	Revision of chapter-4&5
	3	Revision of chapter-6&7
	4	Revision of chapter-8
	5	Revision of chapter-9
13	1	Revision of chapter-10
	2	Discussion of most probable questions (short types)
	3	Discussion of most probable questions (long types)
	4	Discussion of most probable questions (short types)
	5	Discussion of most probable questions (long types)
14	1	Discussion of previous year question papers
	2	Discussion of previous year question papers
	3	Discussion of previous year question papers

	4	Discussion of previous year question papers
	5	Discussion of previous year question papers
15	1	Discussion of previous year question papers
	2	Class test-short type questions
	3	Class test-long types questions
	4	Class test- both short and long types questions
	5	Class test-long types questions