



RAAJDHANI ENGINEERING COLLEGE, BHUBANESWAR
Department of Civil Engineering

LESSON PLAN

2023-2024

Session : March 2024- Aug 2024
Course Type : Theory
Semester/Branch :: 4th Semester, Civil Engineering
Subject (with code) :: Hydraulics & Irrigation Engineering (Th.2)
Contact hours/week :: 5 hours
Name of Faculty :: Dr. Amaresh Tripathy

S L. N O.	CLASS ID	COURSECONTENT	EXHIBIT/REFERENCE
1	1.1	Properties of fluid: density, specific gravity,	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
2	1.2	Surface tension, capillarity, viscosity and their uses	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
3	1.3	Pressure and its measurements: intensity of pressure.	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
4	1.4	Atmospheric pressure, gauge pressure, absolute pressure and vacuum pressure;	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
5	1.5	Relationship between atmospheric pressure, absolute pressure and gauge pressure; pressure head; pressure gauges.	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
6	1.6	Pressure exerted on an immersed surface: Total pressure, resultant pressure, expression for total pressure exerted on horizontal & vertical surface.	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
7	2.1	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,	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh

8	2.2	Kinetic & pressure, Bernoulli's theorem and its limitations. Practical applications of Bernoulli's equation	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
9	2.3	Flow over Notches and Weirs: Notches, Weirs, types of notches and weirs,	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
10	2.4	Discharge through different types of notches and weirs-their application.	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
11	2.5	Types of flow through the pipes: uniform and non uniform;	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
12	2.6	laminar and turbulent; steady and unsteady; Reynold's number and its application	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
13	2.7	Losses of head of a liquid flowing through pipes: Different types of major and minor losses	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
14	2.8	Simple numerical problems on losses due to friction using Darcy's equation,	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
15	2.9	Total energy lines & hydraulic gradient lines (Concept Only). through the Open Channels: Types of channel sections-rectangular	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
16	2.10	Trapezoidal and circular, discharge formulae- Chezy's and Manning's equation, Best economical section.	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
17	3.1	Type of pumps	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
18	3.2	Centrifugal pump: basic principles, operation, discharge, horse power & efficiency.	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh

19	3.3	Reciprocating pumps: types, operation, discharge, horse power & efficiency,	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
20	4.1	Hydrology Cycle, Rainfall: types, intensity, hyetograph	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
21	4.2	Estimation of rainfall, rain gauges, Its types(concept only) Concept of catchment area, types, run-off, estimation of flood discharge by Dicken's and Ryve's formulae	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
22	4.3	Definition of irrigation, necessity, benefits of irrigation, types of irrigation, Crop season	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
23	4.4	Duty, Delta and base period their relationship, overlap allowance, kharif and rabi crops	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
24	4.5	Gross command area, culturable command area, Intensity of Irrigation, irrigable area, time factor, crop ratio	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
25	4.6	Canal irrigation, types of canals, loss of water in canals, Perennial irrigation	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
26	4.7	Different components of irrigation canals and their functions, Sketches of different canal cross-sections	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
27	4.8	Classification of canals according to their alignment, Various types of canal lining – Advantages and disadvantages	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
28	4.9	Causes and effects of water logging, detection, prevention and remedies	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
29	5.1	Necessity and objectives of diversion head works, weirs and barrages,	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh

30	5.2	General layout, functions of different parts of barrage,	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
31	5.3	Silting and scouring	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
32	5.4	Functions of regulatory structures	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
33	5.5	Class test	
34	6.1	Functions and necessity of Cross drainage works	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
35	6.2	Concept of each with help of neat sketch	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
36	7.1	Necessity of storage reservoirs	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
37	7.2	Types of dams	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
38	7.3	Earthen dams: types,	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
39	7.4	Description, causes of failure and protection measures.	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
40	7.1	Gravity dam- types,	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
41	7.2	Description, Causes of failure and protection measures,	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh

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42	7.3	Class Test	
43	7.4	Spillways,	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
44	7.5	Types (With Sketch) and necessity	https://www.youtube.com/playlist?list=PLfq4fiRrJSn4JauYohNvYRjdp6wRpLjXx https://www.youtube.com/playlist?list=PLbRMhDVUMngdyecGEkCH8BmO8N781CVqh
45		CLASS TEST	
46		MONTHLY CLASS TEST	
47		PRIVIOUS YEAR QUESTION DISCUSSION	

