

GOPALAN COLLEGE OF ENGINEERING AND MANAGEMENT

Department of civil Engineering

Academic Year: **2016-17**

Semester: **EVEN**

COURSE PLAN

Semester: **VI**

Subject Code& Name: **10CV65 & HYDRAULIC STRUCTURES AND IRRIGATION DESIGN DRAWING**

Name of Subject Teacher: **SHREYAS H C**

Name of Subject Expert (Reviewer): **KALYANI**

For the Period: From: **1-02-17 to 19-05-17**

Details of Book to be referred:

Text Books	<p>T1: Text book of irrigation engineering and Hydraulic Structures- R K Sharma, Oxford and IBH publishing Co., New Delhi (2002).</p> <p>T2: Irrigation and Water resources engineering- G L Asawa, New Age International Publishers, New Delhi (2005)</p> <p>T3: Irrigation, Water Resources and Water power engineering- P N Modi, Standard Book House, New Delhi.</p>
Reference Books	<p>R1: Irrigation Engineering and Hydraulic Structures- Garg S K, Khanna publishers, New Dehli.</p> <p>R2: Hydraulic Structures and Irrigation Design Drawing- Dr.N Balasubramanya, Tata Mcgraw-Hill Education Pvt Ltd., New Delhi.</p>

Lecture NO	Topic Planned	Practical Applications & Brief objectives	Book referred with Pg No.	Planned Date	Executed Date	Deviation Reasons thereof	How Made Good / Reciprocate arrangement	Remarks by HOD
1.	Introduction to the subject	<p>Objective: To study the basics on reservoir planning, and its purpose along with design</p> <p>Application: Hydraulics works while storage of water and other purpose.</p> <p>OUTCOME: Students will be able to know the concept of reservoir</p>						
2.	UNIT-1 RESERVOIR PLANNING Introduction to Reservoir Planning, Classification of Reservoirs		T1: 1.1-1.4					
3.	Storage Zones of a Reservoir, Mass Curve		T1: 3.1-3.2 & 13.2-13.4					
4.	Fixing Capacity of a Reservoir,		T1: 3.4-3.5					
5.	Safe Yield ,Problems		T1: 3.5					
6.	Problem		T1: 3.5-3.6					
7.	Life of a Reservoir, Density Currents, Trap Efficiency,		T1: 6.1-6.4					
8.	Reservoir Sedimentation,		T1: 6.5-6.14					
9.	Economic Height of a dam, Problems		T1: 7.1-8.7					
10.	problems		T1: 9.1-9.7					
11.	Problems, Environmental Effects of Reservoirs	T1: 10.1-10.3						
12.	Tutorial	T1: 10.3-10.7 & 10.2						
13.	SURPLUS WEIR WITH STEPPED APRON Introduction	T1: 11.1-11.2						

14.	Design data required and Design procedure.	Application: Track fittings and fastening Hauling capacity of a track OUTCOME: Students will be able to calculate material for a unit length of track	T1: 11.3-11.4					
15.	Problem		T1: 22.4					
16.	Drawing		T1: 5.1-5.3					
17.	Drawing	Objective: To study the various geometrical aspects of a ideal railway track. To study safe speed on various criteria Application: Transition curves Grade compensation OUTCOME: Students will be able to calculate required cant and safe speed based on various criteria	T1: 15.1					
18.	Drawing		T1: 15.5					
19.	Tutorial		T1: 15.3-15.4					
20.	TANK SLUICE WITH TOWER HEAD Introduction		T1: 15.3-15.4					
21.	Design data required and Design procedure		T1: 15.6-15.8					
22.	Problem		T1: 15.2					
23.	Drawing		T1: 15.5					
24.	Drawing	Objective: To study the various factors for the selection of an ideal airport and aircraft characteristics Application: Regional planning, Federal Aviation Administration OUTCOME:	T3:Pg 374-395					
25.	Drawing		T3:Pg 129-149					
26.	Tutorial		T3:Pg 109-119					
27.	NOTCH TYPE CANAL DROP Introduction		T3:Pg 164-173					
28.	Design data required and Design procedure.		T3:Pg 170-172					
29.	Problems		T3:Pg 166-168					

30.	Drawing	Students will be able to solve wind rose problems						
31.	Drawing	<p>Objective: Study of various tunneling methods Study of tunnel ventilation</p> <p>Application: Transferring centre line and gradient from surface, Weisbach triangle</p> <p>OUTCOME: Able to understand Surveying- Transferring centre line and gradient from surface to inside the tunnel working face, Weisbach triangle</p>	T4: Pg 213-217 & 257-260					
32.	Drawing		T4: Pg 229-217					
33.	Tutorials		T4: Pg 229-217					
34.	CANAL CROSS REGULATOR Introduction		T4: Pg 321-333					
35.	Design data required and Design procedure		T4: Pg 268-275					
36.	Problem		T4: Pg 282-285 & 364-377					
37.	Drawing		T4: Pg 385-396					
38.	Drawing		T4: Pg 324-325 & 329-334					
39.	Drawing		T4: Pg 334-337					
40.	Tutorial	<p>Objective: Study of various types of harbours and docks</p> <p>Application: Location and design of the harbour.</p> <p>OUTCOME: Able to understand various components of a harbor and a dock</p>	T4: Pg 4-14					
41.	UNIT-2 GRAVITY DAMS Introduction to Gravity Dams, Forces acting on gravity dams		T4: Pg 44-53					
42.	Stress Analysis in Gravity Dams		T4: Pg 33-44					
43.	Problems		T4: Pg 60-102					
44.	Combination of Forces for Design		T4: Pg 152-164					
45.	Elementary and Practical Profiles of a Gravity Dam		T4: Pg 114-119					

46.	Stability Analysis (without earth quake forces)		T4: Pg 132-133					
47.	Problems		T4: Pg 180-182					
48.	Bolted Galleries in gravity dams		T4: Pg 176-180					
49.	Tutorial	<p>Objective: Study of Components of a turnout, Details of points and crossings Study of Signaling and level crossings</p> <p>Application: Design of turnouts Track defects and maintenance</p> <p>OUTCOME: Able to understand various of track junctions- Diamond and crossover, Station and types</p>	T1: 16.1-16.4 & 16.6					
50.	UNIT-3 EARTH DAMS Introduction of Earth Dams, Types of Earth Dams		T1: 16.7-16.8					
51.	Construction Methods of Earth Dams		T1: 16.5-16.6					
52.	Design Criteria for Earth Dams		T1: 17.1-17.3					
53.	Causes of Failure of Earth Dams		T1: 18.8 & 20.1-20.13					
54.	Selection of Dam, Preliminary Design Criteria		T1: 19.1-19.16					
55.	Problems		T1: 18.9&24.1					
56.	Control of Seepage through Earth Dams, Safety Measures		<p>Objective: Study of Runway geometrics, Taxiway, exit way</p> <p>Application: Design of , Basic runway ,taxiway, exit taxiway</p> <p>OUTCOME: Able to understand various runway geometrics</p>	T3: Pg 173-186				
57.	Tutorials	T3: Pg 187-193 &						
58.	UNIT-4 SPILLWAYS Introduction and Essentials of a Spillway,	T3: Pg 231-237 & 238-242						
59.	Spillway Components,	T3: Pg 237-238 & 242-244						
60.	Factors affecting type and design of spillways.	T3: Pg 406-414						

61.	Ogee Spillway (Simple Design Problems)		T3: Pg 414-422 & 432-437					
62.	Energy dissipation below spillways (hydraulic jump - No Design)	Solving VTU Question Paper						
63.	Problems							
64.	Tutorial							
65.	AQUEDUCT Introduction							
66.	Design data required and Design procedure							
67.	Problem							
68.	Drawing							
69.	Drawing							
70.	Tutorial							

Prepared By: _____
(Faculty)
Date & Sign _____

Reviewed by: _____
(Sub. expert)
Date & Sign _____

Approved by: _____
(HOD)
Date & Sign _____

Approved by: _____
(Principal/ Acad. Co)
Date & Sign _____