VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA

LESSON PLAN

Branch: **Civil Engineering**

Semester: **6th B.Tech** Subject: **Fluid Dynamics**

Name of the Faculty: **Dr. Anil Kumar Kar**

Class No.	Module No.	Topics to be Covered	Remarks / Sign of Faculty Member
1	I	Model Analysis, Applications, What is a Model, Selection of Scale	
2	I	Distorted Model, Scale effect, Similitude	
3	I	Discussion about Reynold, Froud, Mach, Weber Laws, Numerical Examples	
4	I	Resistance to motion partially submerged body, Numerical Examples	
5	I	Boundary layer theory concept, Applications,	
6	I	Thickness of BL, Numerical Examples	
7	I	Drag Force on a flat plate due to BL	
8	I	Common forms of velocity distribution and its coefficients, Numerical Examples	
9	I	Separation of BL, Methods of controlling BL	
10	I	Navier Stokes Equation, significance of body force	
11	I	Boundary condition, Viscous force, Limiting cases	
12	I	Application of N-S eqn.	
13	I	Drag and Lift concept, Numerical Examples	
14	I	Drag on a sphere, Cylinder, Numerical Examples	
15	I	Development of Lift on an airfoil,	
16	II	Turbulent flow in pipe,	
17	II	Shear stress in turbulent flow	
18	II	Prandtl mixing length theory, Velocity distribution	
19	II	Hydro-dynamically smooth and rough boundaries, Numerical Examples	
20	II	Velocity Distribution,	
21	II	Resistance of smooth and rough pipes.	
22	II	Non uniform flow in Open channel,	
23	II	Specific Energy	
24	II	Specific Energy Curve.	
25	II	Salient points on Specific Energy	
26	III	Hydraulic Jump explanation, Numerical Examples	
27	III	Gradually varied flow	
28	III	Back water curve, Flow profiles	
29	III	Impact of Jet on Stationary flat plate	

30	III	Inclined plate, Curved vane	
31	III	Impact of jet on moving plate, Inclined plate	
32	III	Curved vane, Numerical Examples	
33	IV	Radial curved vane, velocity triangle	
34	IV	Turbines, Reaction, Impulse, Inward, mixed flow Turbine	
35	IV	Francis, Kaplan, Pelton wheel, Physical description	
36	IV	Governing principle, Numerical Examples	
37	IV	Centrifugal pump, Classification	
38	IV	Blade angle, Velocity triangle, Efficiency	
39	IV	Reciprocating pump, Principle of Working	
40	IV	Slip, Work done, Example	

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY BURLA

CLASS DIARY

Branch: **Civil Engineering** Section:

Semester: **2nd M.Tech** Subject: **GIS Applications in WRE**

Name of the Faculty: **Dr. Anil Kumar Kar**

Class No.	Module No.	Date	Topics to be Covered	Remarks / Sign of Faculty Member
1	I	03.01.2017	Introduction RS & GIS	Completed/
2	I	04.01.2017	Scope of RS & GIS in water resources and environmental system	Completed/
3	I	05.01.2017	Scope of RS & GIS in water resources and environmental system	Completed/
4	I	09.01.2017	Scope of RS & GIS in water resources and environmental system	Completed/
5	I	10.01.2017	Scope of RS & GIS in water resources and environmental system	Completed/
6	I	16.01.2017	Geomorphological mapping	Completed/
7	I	17.01.2017	Hydrological mapping	Completed/
8	I	18.01.2017	Hydrological mapping	Completed/
9	I	19.01.2017	Landuse mapping	Completed/
10	I	24.01.2017	Landuse mapping	Completed/
11	II	25.01.2017	Evaluation of water resources potential	Completed/
12	II	31.01.2017	Rainfall-Runoff modelling using RS inputs	Completed/
13	II	01.02.2017	Rainfall-Runoff modelling using RS inputs	Completed/
14	II	06.02.2017	Flood studies	Completed/
15	II	07.02.2017	Drought studies	Completed/
16	II	08.02.2017	Drought studies	Completed/
17	II	09.02.2017	Drought assessment and monitoring	Completed/
18	II	13.02.2017	Command area studies, cropping pattern, crop condition	Completed/
19	II	14.02.2017	Irrigation system performance	Completed/
20	II	15.02.2017	Crop yield estimation	Completed/
21	III	16.02.2017	Introduction of GIS	Completed/
22	III	21.02.2017	Hydrology and Resources management	Completed/
23	III	27.02.2017	Hydrology and Resources management	Completed/
24	III	28.02.2017	Watershed development	Completed/
25	III	01.03.2017	Watershed development	Completed/
26	III	02.03.2017	Management options, inventory	Completed/
27	III	03.03.2017	Management options, inventory, Q & A discussion	Completed/
28	III	13.03.2017	Remote sensing in snow cover studies	Completed/
29	III	14.03.2017	Remote sensing in snow cover studies	Completed/
30	III	15.03.2017	Snowmelt runoff	Completed/
31	IV	16.03.2017	Reservoir sedimentation	Completed/
32	IV	21.03.2017	Erosion and deposition	Completed/
33	IV	22.03.2017	Erosion and deposition	Completed/
34	IV	23.03.2017	Catchment area treatment	Completed/
35	IV	29.03.2017	Catchment area treatment	Completed/
36	IV	30.03.2017	Estimation of sediment load	Completed/
37	IV	03.04.2017	Estimation of sediment load	Completed/
38	IV	04.04.2017	Estimation of sediment load	Completed/

39	IV	05.04.2017	Use of Sediment Models	Completed/
40	IV	06.04.2017	Use of Sediment Models	Completed/
41		10.04.2017	Revision classes	To be completed
42		11.04.2017	Revision classes	To be completed
43		12.04.2017	Revision classes	To be completed
44		17.04.2017	Revision classes	To be completed
45		18.04.2017	Revision classes	To be completed

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA

CLASS DIARY

Branch: **Civil Engineering** Section: **A1**

Semester: **4th B.Tech** Subject: **Hydraulics Lab**

Name of the Faculty: **Dr. Anil Kumar Kar**

Class No.	Date	Topics to be Covered	Remarks / Sign of Faculty Member
1	09.01.2017	Study of Hydraulic Instruments	Completed/
2	16.01.2017	Determination of Metacentric height	Completed/
3	23.01.2017	Determination of Darcy Weisbach coefficient for pipe friction	Completed/
4	06.02.2017	Verification of Bernoulli's Theorem	Completed/
5	13.02.2017	Determination of Coefficient of Discharge for venturimeter	Completed/
6	27.02.2017	Determination of Coefficient of Discharge (Cd) for Open channel flume	Completed/
7	10.04.2017	Determination of Chezzy and Manning's constant in Open Channel flume, Forced Vortex	
8	17.04.2017	Determination of Cd of orifice meter, Explanation of Laminar and Turbulent flow using Reynold's Test Apparatus	
		Report Submission and Viva	

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY, BURLA

CLASS DIARY

Branch: **Civil Engineering** Section: **A2**

Semester: **4th B.Tech** Subject: **Hydraulics Lab**

Name of the Faculty: **Dr. Anil Kumar Kar**

Class No.	Date	Topics to be Covered	Remarks / Sign of Faculty Member
1	11.01.2017	Study of Hydraulic Instruments	Completed/
2	18.01.2017	Determination of Metacentric height	Completed/
3	25.01.2017	Determination of Darcy Weisbach coefficient for pipe friction	Completed/
4	08.02.2017	Verification of Bernoulli's Theorem	Completed/
5	15.02.2017	Determination of Coefficient of Discharge for venturimeter	Completed/
6	22.02.2017	Determination of Coefficient of Discharge (Cd) for Open channel flume	Completed/
7	15.03.2017	Determination of Chezzy and Manning's constant in Open Channel flume	Not done/ no power
8	22.03.2017	Determination of Chezzy and Manning's constant in Open Channel flume	Completed/
9	29.03.2017	Forced Vortex	Completed/
10	05.04.2017	Determination of Cd of orifice meter	Completed/
11	12.04.2017	Explanation of Laminar and Turbulent flow using Reynold's Test Apparatus	
		Report Submission and Viva	

VEER SURENDRA SAI UNIVERSITY OF TECHNOLOGY BURLA

CLASS DIARY

Branch: **Civil Engineering** Section:

Semester: **2nd M.Tech** Subject: **Computational Lab**

Name of the Faculty: **Dr. Anil Kumar Kar**

Class No.	**Date**	**Topics to be Covered**	**Remarks / Sign of Faculty Member**
1	06.01.2017	Introduction to computations	Completed/
2	20.01.2017	Solving Examples using Excel and MATLAB	Completed/
3	10.02.2017	Parameter estimation through regression	Completed/
4	17.02.2017	Cropping water requirement using CROPWAT	Completed/
5	03.03.2017	Determination of design flood	Completed/
6	17.03.2017	Determination of design flood	Completed/
7	24.03.2017	Watershed modelling- general practices	Completed/
8	31.03.2017	Watershed modelling- Unit Hydrograph model	Completed/
9	07.04.2017	Watershed modelling- Synthetic Unit Hydrograph model	Completed/
10	19.04.2017	Streamflow analysis and simulation	
		Report Submission and Viva	