Lesson Plan

Name of the Institute:	**C. V. Raman Polytechnic**
Department:	**Mechanical Engineering**
Semester/Division/Branch:	**4thSem/ME**
Subject Name with code:	**Fluid Mechanics (FM)**
Total No. of Class (Required):	**60**
Faculty Name:	**Mrs. Soumya Dash**

Class No.	Brief Description of the Topic/Chapter to be taught	Remarks
1	Definitions and Units of Density, Specific weight, specific gravity	
2	Specific volume, specific gravity, specific volume	
3	Definitions and Units of Dynamic viscosity, kinematic viscosity, surface tension	
4	Capillary phenomenon	
5	Definitions and units of fluid pressure, pressure intensity and pressure head	
6	Concept of atmospheric pressure, gauge pressure, vacuum pressure and absolute pressure	
7	Pressure measuring instruments	
8	Manometers: Simple and differential	
9	Manometers: Simple and differential	
10	Bourdon tube pressure gauge	
11	(Simple Numerical) on Manometer	
12	Simple Numerical) on Manometer	
13	Definition of hydrostatic pressure	
14	Total pressure and center of pressure on immersed bodies	
15	Total pressure and center of pressure on immersed bodies	
16	Simple Numerical)	
17	Archimedes' principle, concept of buoyancy, metacenter and metacentric height	
18	Archimedes' principle, concept of buoyancy, metacenter and metacentric height	
19	Concept of floatation	

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20	Types of fluid flow	
21	Continuity equation (Statement and proof for one dimensional flow)	
22	Continuity equation (Statement and proof for one dimensional flow)	
23	Bernoulli's theorem (Statement and proof)	
24	Bernoulli's theorem (Statement and proof)	
25	Applications (Venturi meter, pitot tube) (Simple Numerical)	
26	Applications (Venturi meter, pitot tube) (Simple Numerical)	
27	Definition of orifices, Orifice coefficients (Cc, Cv, Cd and relation among them)	
28	Definition of pipe, laws of fluid friction	
29	Definition of pipe, laws of fluid friction	
30	Head loss due to friction: Darcy's and Chezy's formula)	
31	Head loss due to friction: Darcy's and Chezy's formula)	
32	Hydraulic gradient and total gradient line	
33	Hydraulic gradient and total gradient line	
34	Impact of jet on fixed and moving vertical flat plates,	
35	derivation of work done on series of vanes	
36	condition for maximum efficiency	
37	Impact of jet on moving curved vanes,	
38	illustration using velocity triangles,	
39	derivation of work done, efficiency	
40	Simple Numerical)	
41	Simple Numerical)	
42	Layout and features of hydroelectric power plant	
43	Definition and classification of hydraulic turbines	
44	Construction and working principle of Impulse turbine (Pelton wheel)	
45	Velocity triangle of a single bucket, work done and efficiency in Pelton wheel	
46	Velocity triangle of a single bucket, work done and efficiency in Pelton wheel	
47	Construction and working principle of Reaction turbine (Francis's turbine)	
48	Construction and working principle of Reaction turbine (Francis's turbine), problems	
49	Velocity triangle, work done and efficiency	
50	Construction and working principle of Kaplan turbine	

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51	Definition and classification of pumps	
52	Centrifugal Pumps	
53	Construction and working principles, velocity diagram of a single impeller,	
54	work done and efficiency (Numerical Problems)	
55	Concept of multistage centrifugal pumps	
56	Cavitation-Causes and its effect	
57	Reciprocating Pumps	
58	Construction and working principle of single acting and double acting reciprocating pumps	
59	Concept of slip and negative slip, Definitions and Units of Density	
60	Specific weight, specific gravity, specific volume specific gravity, specific volume	

Signature of the Faculty

Signature of the H.O.D

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