Lesson Plan

Name of the Faculty: Gourav Arora

Discipline: CIVIL ENGINEERING

Semester: IIIrd

Subject: Fluid Mechanics

Work Load (Lecture/Practical) per week (in hours): Lectures- , Practicals-

Week	Theory		Practical	
	Lecture day	Topic (including assignment/test)	Practical day	Topic
1st	1st	Fluid properties	1st	To determine metacentric height of the ship model
	2nd	mass density, specific weight		
	3rd	specific volume and specific volume		
	4th	specific gravity, real and ideal fluids.		
2nd	5th	surface tension, capillarity	2nd	To verify the Bernoulli's theorem
	6th	pressure inside a droplet		
	7th	bubble due to surface tension, compressibility viscosity		
	8th	Newtonian and Non-Newtonian fluids		
3rd	9th	Steady & unsteady, uniform and non-uniform, laminar & turbulent flows	3rd	To determine coefficient of discharge for an Orificemeter
	10th	one, two & three dimensional. flows,		
	11th	continuity equation in differential form,		
	12th	rotation and circulation, elementary		
4th	13th	rotational and irrotational flows	4th	To determine coefficient of discharge of a venturimeter
	14th	graphical and experimental methods of drawing flownets		
	15th	explanation of stream function and velocity potential		
	16th	stream lines, streak lines and path lines		
5th	17th	UNIT 1 TEST	5th	To determine the various hydraulic coefficients of an Orifice (Cd, Cc, Cv)
	18th	Fluid Statics		
	19th	Pressure-density-height relationship		
	20th	Gauge and its types		
6th	21st	absolute pressure	6th	To determine coefficient of

	22nd	Manometers and its types		discharge for an Orifice under variable head
	23rd	simple differential		
	24th	two liquid manometers		
7th	**25th**	pressure on plane and curved surfaces	**7th**	To calibrate a given notch
	26th	center of pressure		
	27th	center of Buoyancy		
	28th	stability of immersed		
8th	**29th**	floating bodies	**8th**	To determine coefficient of discharge for a mouth piece
	30th	determination of metacentric height		
	31st	fluid masses subjected to uniform acceleration		
	32nd	free and forced vortex		
9th	**33rd**	sensitive manometers	**9th**	Drawing of a flownet by Viscous Analogy Model and Sand Box Model
	34th	Dynamic of Fluid Flow		
	35th	Euler's equation		
	36th	Euler's equation of motion along a streamline and its integration		
10th	**37th**	Bernoulli's equation	**10th**	To study development of boundary layer over a flat plate
	38th	limitation of Bernoulli's equation		
	39th	Pitot tubes		
	40th	venturimeter		
11th	**41st**	Orificemeter	**11th**	To study velocity distribution in a rectangular open channel
	42nd	flow through orifices		
	43rd	mouth pieces		
	44th	sharp crested weirs		
12th	**45th**	sharp crested notches	**12th**	Velocity measurements by current meter, float, and double float
	46th	aeration of nappe		
	47th	UNIT 3 TEST		
	48th	Boundary layer analysis		
13th	**49th**	Boundary layer thickness	**13th**	Experiment on Vortex formation
	50th	boundary layer over a flat plate, laminar boundary layer		
	51st	turbulent boundary layer, laminar sub-layer, smooth and rough boundaries		
	52nd	local and average friction coefficient, separation and its control		
14th	**53rd**	Dimensional Analysis and Hydraulic Similitude	**14th**	Revision of last Practicals
	54th	Dimensional analysis, Buckingham theorem		
	55th	important dimensionless numbers and their significance, geometric		
	56th	kinematic and dynamic similarity		
15th	**57th**	model studies, physical modeling	**15th**	Revision of last Practicals

	58th	similar and distorted models		
	59th	Revision of last topic		
	60th	UNIT 4 TEST		