

FLUID MECHANICS HYDRAULIC MACHINES LAB

Course Code	20ME3351	Year	II	Semester	I
Course Category	Professional Core	Branch	ME	Course Type	Lab
Credits	1.5	L-T-P	0-0-3	Pre-requisites	NIL
Continuous Internal Evaluation	15	Semester End Evaluation	35	Total Marks	50

Course Outcomes: Upon successful completion of the course, the student will be able to

CO	Statement	Skill	BTL	Experiment
CO1	Apply the knowledge to estimate losses in pipes and coefficient discharge of various flow measuring devices	Apply	L3	1,2,3,4,5
CO2	Apply the knowledge to estimate the coefficient of the impact of jet on vanes.	Apply	L3	6
CO3	Analyze Bernoulli's theorem.	Analyze	L4	7
CO4	Evaluate the performance of pumps and turbines.	Evaluate	L5	8,9,10,11,12

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3: High, 2: Medium, 1: Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3											3	2
CO2	3	3											3	3
CO3	3	3											3	3
CO4	3	3											3	3

Course Content

Expt No	Experiment	COs
1	Determination of loss of head due to the sudden contraction in a pipeline.	CO1
2	Determination of friction factor for a given pipeline.	CO1
3	Determination of coefficient of discharge of Triangular Notch	CO1
4	Determination of coefficient of discharge of Venturimeter.	CO1
5	Determination of coefficient of discharge of Orifice meter.	CO1
6	Determination of coefficient of Impact of jets on Stationary Vanes.	CO2
7	Verification of Bernoulli's equation.	CO3
8	Performance Test on Single Stage Centrifugal Pump.	CO4
9	Performance Test on Multi Stage Centrifugal Pump.	CO4
10	Performance Test on Pelton Wheel.	CO4
11	Performance Test on Kaplan Turbine.	CO4
12	Performance Test on Francis Turbine.	CO4

Learning Resources**Text books**

- 1.K.L.Kumar.“Engineering Fluid Mechanics” Experiments, Eurasia Publishing House, 1997
- 2.Jagdish Lal, Hydraulic Machines, Metropolitan Book Co, Delhi, 1995

Reference books

- 1.Hydraulics and Fluid Mechanics, by P.N.Modi and S.M.Seth, Standard book house, 2000, New Delhi.
- 2.Fluid Mechanics and Hydraulic Machines, by Sukumar Pati, Mc Graw Hill Education Private Limited, 2014, New Delhi.