



# Techno India NJR Institute of Technology

Academic Administration of Techno NJR Institute  
Syllabus Deployment

Name of Faculty	: Mr. Jitendra Choubisa	Subject Code: 4ME4-22
Subject	: Fluid Mechanics Lab	
Department	: Mechanical Engineering	Sem: IV
Total No. of Lectures Planned: 16		

## COURSE OUTCOMES:

At the end of this course students will be able to:

- CO1: Conduct experiments for a given purpose.
- CO2: Analyze experimental data and develop empirical equations.
- CO3: Verify the basic principles and equations of fluid mechanics.
- CO4: Work individually and as a team.
- CO5: Communicate in written reports and oral presentation.

Lecture No.	Practical No.	Topic
1	1	Determination of Meta-centric height of a given body.
2	2	Determination of Cd, Cv & Cc for given orifice.
3	3	Calibration of contracted Rectangular Notch and / Triangular Notch and determination of flow rate.
4	4	Determination of velocity of water by Pitot tube
5	5	Calibration and flow rate determination using Venturimeter & Orifice meter and Nozzle meter
6	6	Determination of head loss in given length of pipe.
7	7	Determination of the Reynold's number for laminar, turbulent and transient flow in pipe
8	8	Determination of Coefficient for minor losses in pipes.
9	9	To study the velocity distribution in a pipe and also to compute the discharge by integrating the velocity profile
10	10	Verification of Bernoulli's theorem.
11	11	To study the boundary layer velocity profile over a flat plate and to determine the boundary layer thickness.

12	12	Conducting experiments and drawing the characteristic curves of centrifugal pump/submergible pump.
13	13	Conducting experiments and drawing the characteristic curves of reciprocating pump
14	14	Conducting experiments and drawing the characteristic curves of Pelton wheel.
15	15	Conducting experiments and drawing the characteristics curves of Francis turbine.
16	16	Conducting experiments and drawing the characteristic curves of Kaplan turbine.

### **TEXT/REFERENCE BOOKS**

1. SOM, S. K., & BISWAS, G. INTRODUCTION TO FLUID MECHANICS AND FLUID MACHINES, TATA MCGRAW HILL.
2. YUNUS A. CENGEL AND CIMBALA, FLUID MECHANICS, TATA MCGRAWHILL