



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

(An Autonomous Institution)

(Accredited by NAAC & NBA, Approved by AICTE New Delhi & Permanently Affiliated to JNTUH)
Aziznagar Gate, C.B. Post, Hyderabad – 500 075

DEPARTMENT OF MECHANICAL ENGINEERING II B.Tech II Semester MECHANICS OF FLUIDS AND HYDRAULIC MACHINES LAB (A14385)

OUTCOMES: Upon the completion of the lab, the students should be able to

- 1 Practical exposure of using components like vacuum gauge, pressure gauge, manometers, pipes, motors, pumps, turbines.
- 2 Measure fluid flow using Venturi meter and Orifice meter.
- 3 Understand friction factor and minor losses in a pipe line
- 4 Understand and calculate performance of turbines and pumps at constant speed and head.
- 5 Know and understand the impact of jet on vanes and Bernoulli's theorem.



The experiments are designed in such a way that it will demonstrate the basic idea of fluid mechanics principles and make the students learn the various applications of the hydraulic machines. The laboratory has a mission to offer the potentials for Practical Works and demonstrations to make the students understand the practical. By the introductions as well as providing the Research facilities in the lab, this Laboratory caters to the needs of Mechanical and Electrical Engineering Students for the subject of Fluid Mechanics and Hydraulic Machinery. The Laboratory is equipped with a large number of equipment and experimental Setups in order to study the fundamental and applied aspects of Hydraulics machineries.



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LIST OF EXPERIMENTS:

S/NO.	Name of Experiment
1	Impact of jets on Vanes
2	Performance Test on Pelton Wheel
3	Performance Test on Francis Turbine
4	Performance Test on Kaplan Turbine
5	Performance Test on Single Stage Centrifugal Pump
6	Performance Test on Multi Stage Centrifugal Pump
7	Performance Test on Reciprocating Pump
8	Calibration of Venturimeter
9	Calibration of Orifice meter
10	Determination of friction factor for a given pipe line
11	Determination of loss of head due to sudden contraction in a pipeline.
12	Verification of Bernoulli's Theorem

LIST OF EQUIPMENTS:

S/NO.	Name of Experiment
1	Impact of jets on Vanes apparatus
2	Pelton Wheel apparatus
3	Francis Turbine apparatus
4	Kaplan Turbine apparatus
5	Single Stage Centrifugal Pump apparatus
6	Multi Stage Centrifugal Pump apparatus
7	Reciprocating Pump apparatus
8	Venturimeter apparatus
9	Orifice meter apparatus
10	friction factor for a given pipe line apparatus
11	Loss of head due to sudden contraction in a pipeline apparatus
12	Bernoulli's Theorem apparatus