

II YEAR-I Semester

ME3L1

FM & HM LAB

Credits: 2

Lecture:

Internal assessment: 25marks

Lab Practice: 3 period/week

Semester end examination: 50 marks

Course Objectives:

- Measure the losses in pipes, coefficient of discharge using notch, Venturimeter and orifice meter, Jet on Vanes and Bernoulli's Theorem that are studied in a lecture course.
- Experiment the performance of hydraulic machines viz. Turbines and Pumps.

Course Outcomes:

Upon the completion of this course the student will be able to:

1. Estimate minor and major losses in the pipe lines.
2. Calculate the coefficient of discharge through various devices like Venturimeter and orifice meter.
3. Test the impact of jet on vanes and validation of Bernoulli's Theorem.
4. Assess the performance of Centrifugal pumps, Reciprocating pumps & Hydraulic Turbines.

ANY 12 EXPERIMENTS FROM THE FOLLOWING

List of Experiments:

Fluid Mechanics Experiments:

1. Determination of loss of head due to sudden contraction in a pipeline.
2. Determination of friction factor for a given circular pipe line.
3. Coefficient of Discharge of Triangular Notch/Rectangular Notch
4. Determination of Coefficient of Discharge of Venturimeter.

5. Determination of Coefficient of Discharge of Orifice meter.
6. Determination of coefficient of Impact of jets on Stationary Flat, Inclined and Hemispherical Vanes.
7. Experimental Verification of Bernoulli's Theorem.

Hydraulic Machines Experiment:

8. Performance Test on Single Stage Centrifugal Pump.
9. Performance Test on Multi Stage Centrifugal Pump.
10. Performance Test on Reciprocating Pump.
11. Performance Test on Pelton Wheel.
12. Performance Test on Kaplan Turbine.
13. Performance Test on Francis Turbine.