MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

DEPARTMENT OF MECHANICAL ENGINEERING

2050380 FLUID MECHANICS AND HYDRAULICS MACHINERY LAB

B.Tech.III Year-I Sem **L/T/P/C 0/0/2/1**

VISION

The Mechanical Engineering Department strives for immense success in the field of education, research and development by nurturing the budding minds of young engineers inventing sets of new designs and new products which may be envisaged as the modalities to bring about a green future for humanity"

MISSION

Equipping the students with manifold technical knowledge to make them efficient and independent thinkers and designers in national and international arena. Encouraging students and faculties to be creative and to develop analytical abilities and efficiency in applying theories into practice, to develop and to disseminate new knowledge. Pursuing collaborative work in research and development organizations, industrial enterprises, research and academic institutions of national and international standards, to introduce new knowledge and methods in engineering teaching and research in order to orient young minds towards industrial development.

LIST OF EXPERIMENTS

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 Orificemeter.
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 Theorems.

COURSE OUTCOMES

CO	Course outcome
ME 380.1	Develop procedure for standardization of experiments.
ME 380.2	Calibrate flow discharge measuring device used in pipes channels and tanks.
ME 380.3	Determine fluid and flow properties.
ME 380.4	Compute drag coefficients.
ME 380.5	Test the performance of pumps and turbines.
ME 380.6	Estimate performance parameters of a given pumps.

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PROGRAM EDUCATIONAL OBJECTIVES

PEO1	Graduates shall emerge as successful Mechanical engineer's as their career progress
PEO2	**G**raduates apply fundamentals of engineering, in practical applications and engage in active research.
PEO3	**Mechanical Graduates** shall have the ability to design products with interdisciplinary skills.
PEO4	**G**raduates will serve the society with their professional skills

PROGRAM SPECIFIC OUTCOMES

PSO1- Students acquire necessary technical skills in mechanical engineering that make them employable graduate.
PSO2- An ability to impart technological inputs towards development of society by becoming an entrepreneur

LIST OF EQUIPMENTS

1. Bernoulli's Theorm Apparatus
2. Loss of head due to sudden contraction
3. Rectangular / Triangular Notch
4. Friction factor for a given pipe line
5. Impact of Jet on Vanes
6. Single Stage Centrifugal Pump Test Rig
7. Francis Turbine Test Rig
8. Kaplan Turbine Test Rig
9. Pelton Wheel Rig
10. Multistage Centrifugal Pump Test Rig
11. Reciprocating Pump Test Rig
12. Venturi and Orificemeter Setup
13. Small Orificemeter setup
14. External Mouth Piece Setup

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Do's

- Enter laboratory with appropriate laboratory uniform and shoes.
- Keep all your belongings in the book rack or at the place suggested by lab instructor.
- Bring the laboratory manual, observation and record without fail.
- Collect the instruments and check for damage if any before carrying out the experiment.
- Eliminate potentially dangerous chemical reactions by thoroughly washing beakers, test tubes, flasks
- and other glassware before and after use. Always add concentrated chemical (e.g. acid or base) to water NOT water to concentrated chemical.
- Make sure that all equipment is clean and returned to its original place after performing experiments.
- Turn off all heating apparatus, gas valves, and water faucets when not in use.
- Wear disposable gloves, as provided in the laboratory, when handling hazardous materials.
- Remove the gloves before exiting the laboratory.

Don'ts

- Don't place glassware near edge of laboratory bench.
- Don't let water drip onto power strips.
- Never point the open end of a test tube containing a substance at yourself or others.
- Don't use mobile phones during laboratory hours.
- Don't fool around in the laboratory.
- Don't come with long hair, dangling jewelry and loose or baggy clothing which are a hazard in the laboratory.