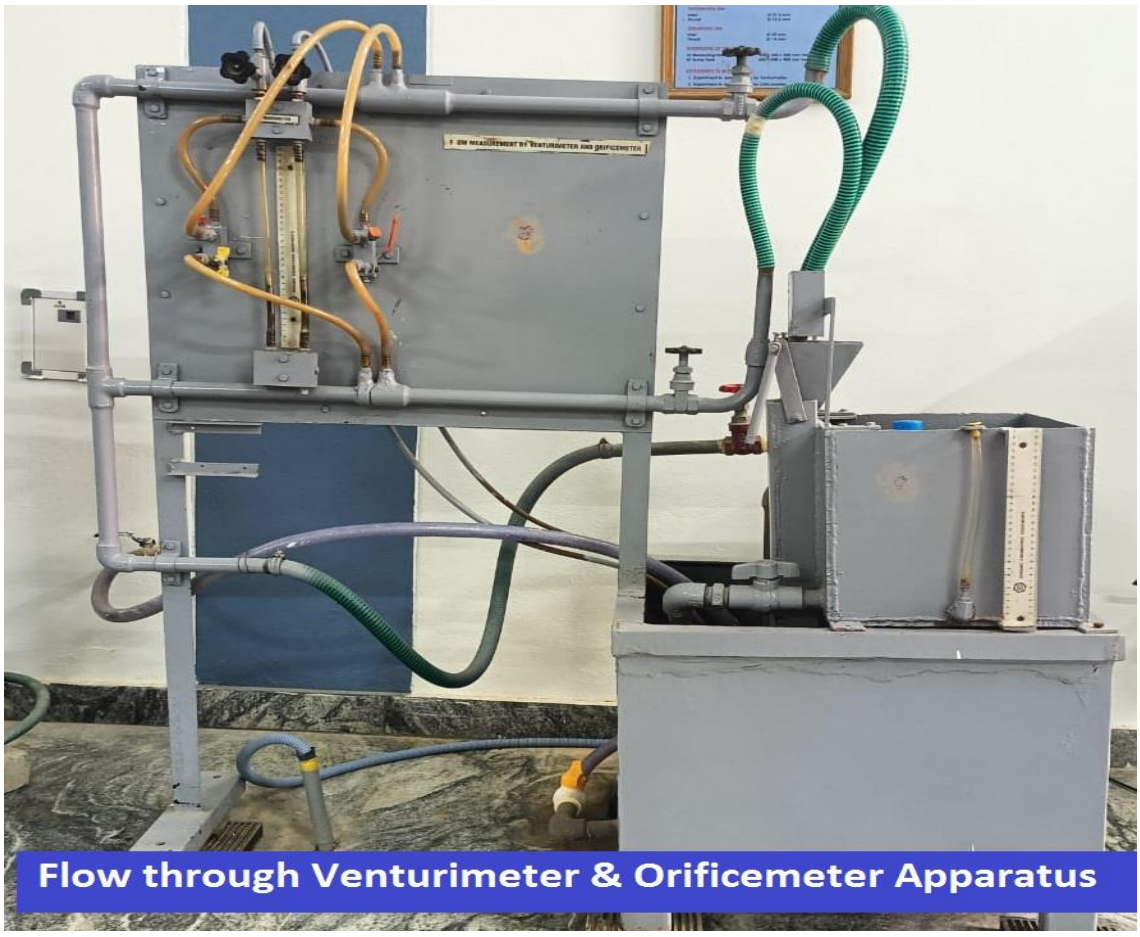
FLUID MECHANICS & HYDRAULIC MACHINES LABORATORY

LIST OF THE EUIPMENTS

1) Flow through Venturimeter & Orifice meter Apparatus
2) Bernoulli's theorem Apparatus
3) Losses in pipe friction Apparatus
4) Centrifugal pump Test rig
5) Reciprocating pump Test rig
6) Impact of jet Apparatus
7) Pelton wheel Test rig
8) Francis Turbine Test rig
9) Kaplan Turbine Test rig

Name of the Equipment:	FLOW THROUGH VENTURIMETER & ORIFICE METER APPARATUS



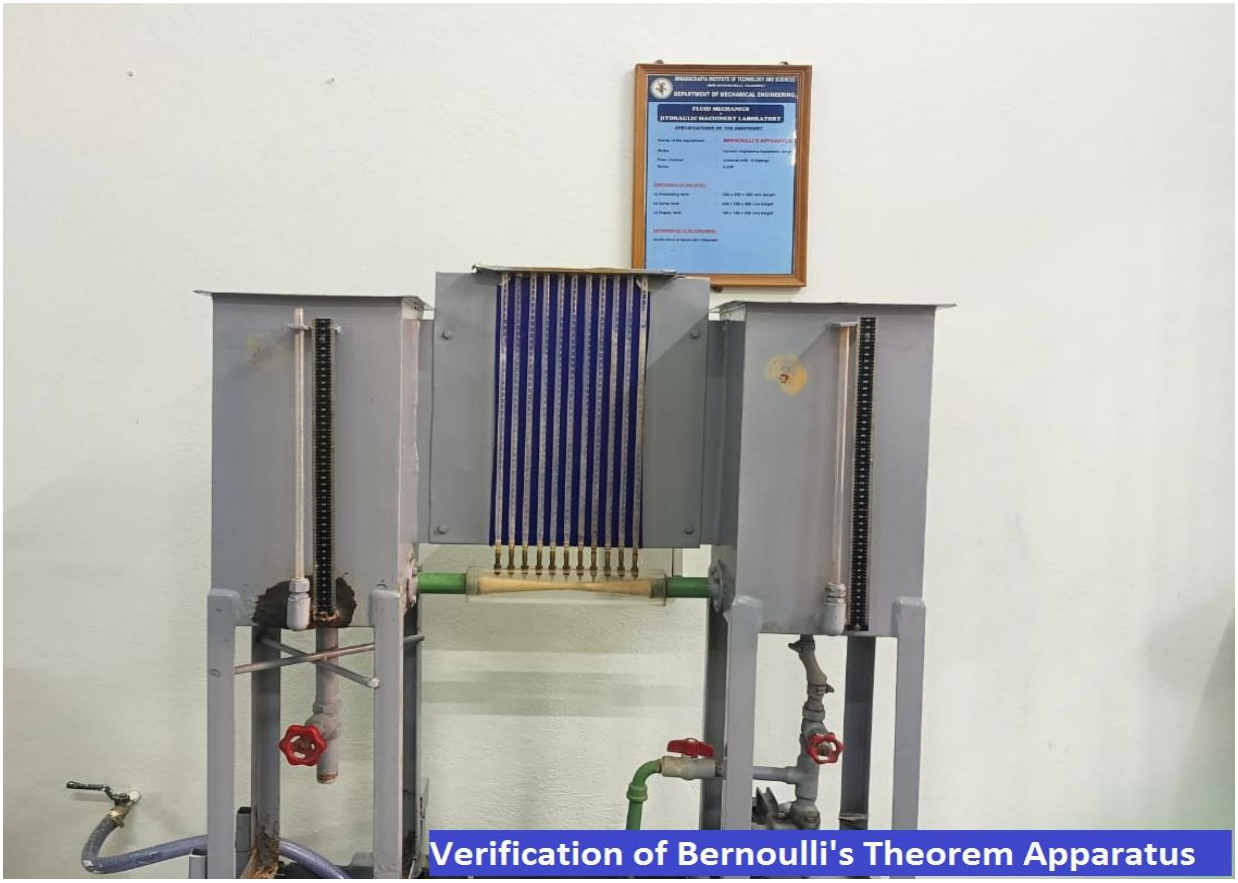
Specifications:

- Motor capacity : 0.5 HP
- Manometer size: 500 mm height
- Venturi inlet diameter: 21.5 mm
- Venturi throat diameter: 15.5 mm
- Orifice inlet diameter: 21.5 mm
- Orifice throat diameter: 15.5 mm

Experiments that can be conducted:

1) To determine the coefficient of discharge of Venturimeter
2) To determine the coefficient of discharge of Orificemeter

Name of the Equipment:	BERNOULLI'S THEOREM APPARATUS



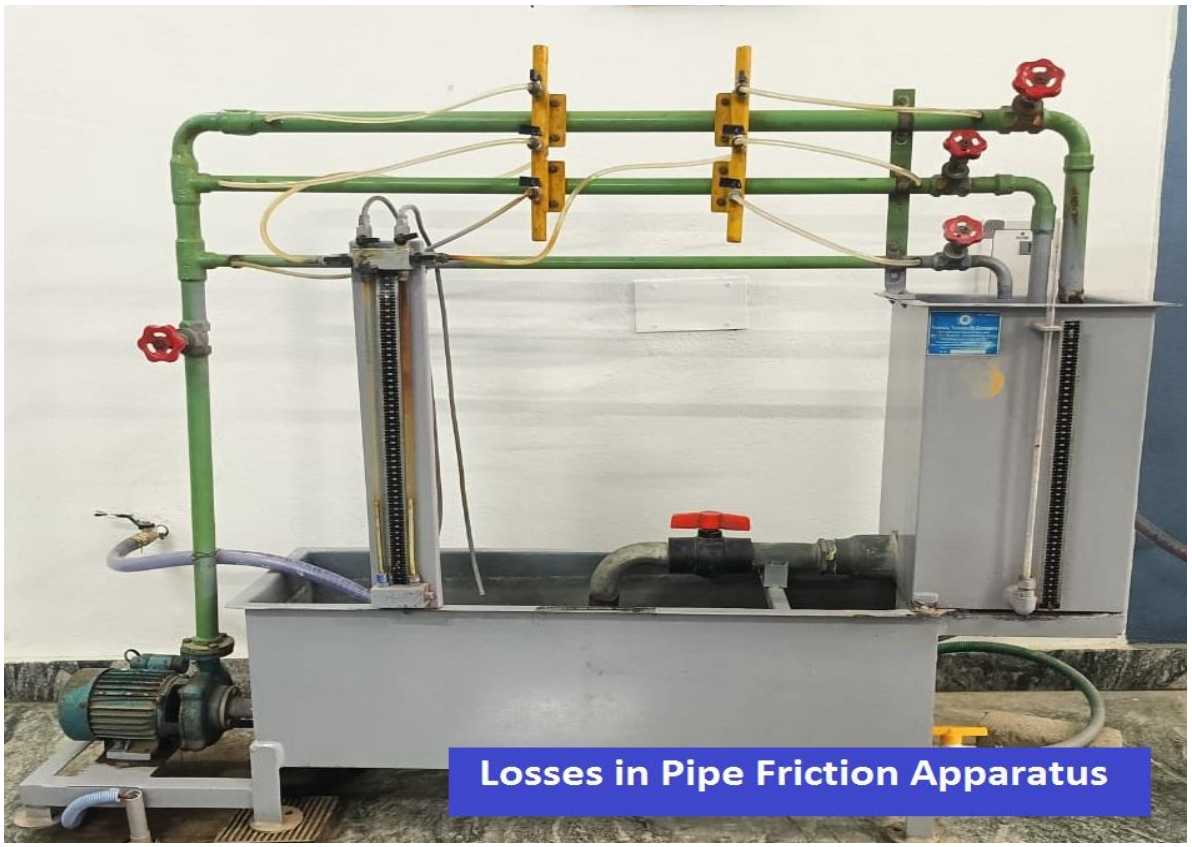
Specifications:

- Motor capacity: 0.5 HP

Experiments that can be conducted:

1) To verify the Bernoulli's theorem by conducting experiment.

Name of the Equipment:	LOSSES IN PIPE FRICTION APPARATUS



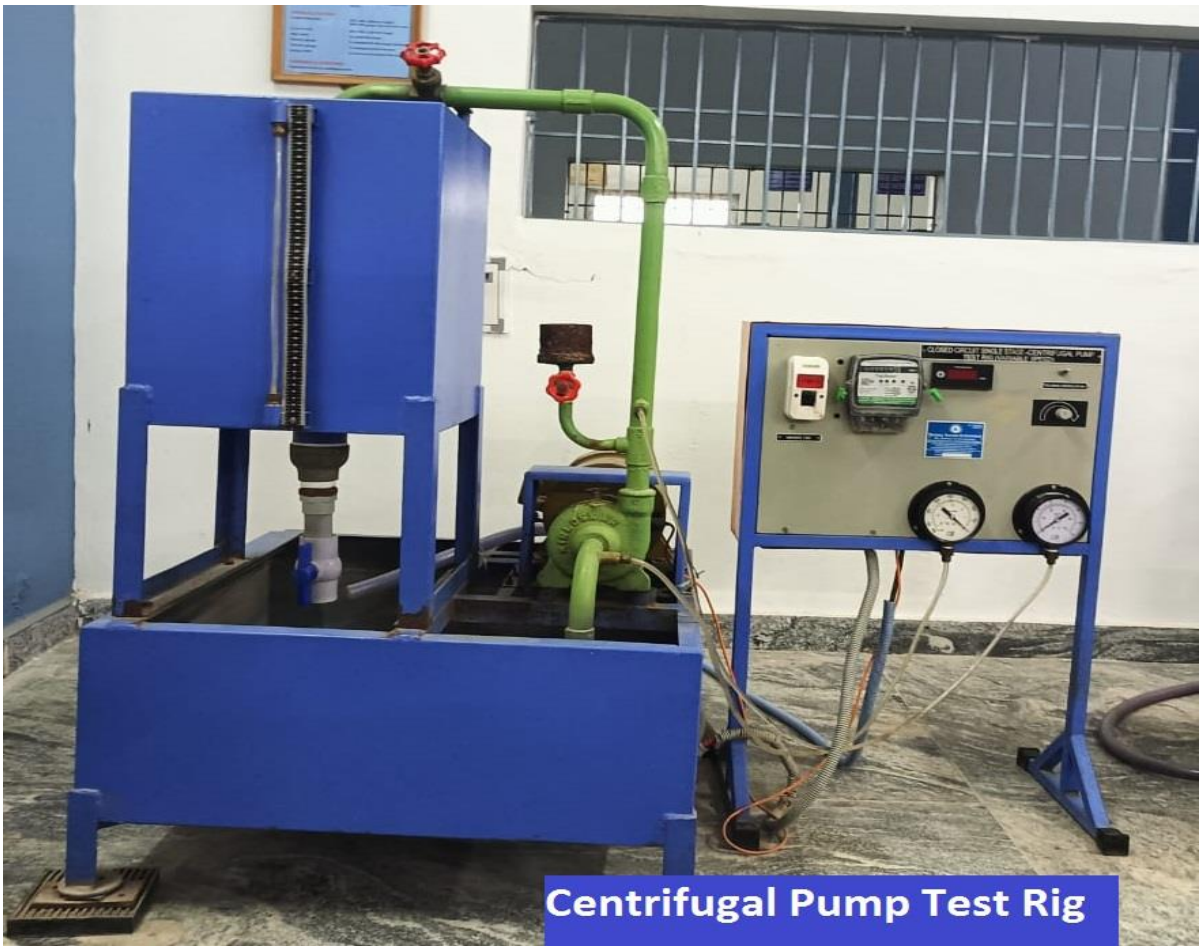
Specifications:

- Motor capacity: 0.5 HP
- Pipe length between tapping's: 1 meter

Experiments that can be conducted:

1) To determine the frictional losses in pipes of different diameters during the flow of fluid.

Name of the Equipment:	CENTRIFUGAL PUMP TEST RIG



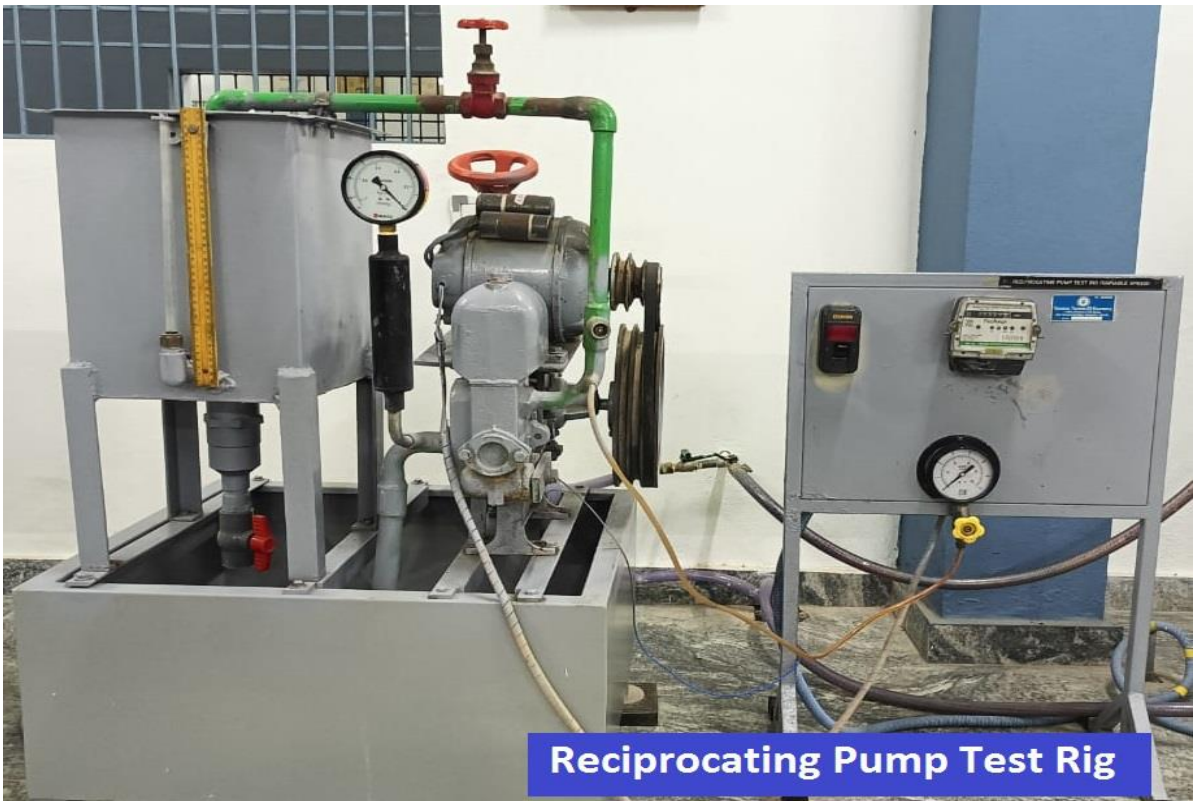
Specifications:

- Motor capacity: 1 HP
- Maximum total head: 12 mts
- Discharge capacity: 1.5 liters per sec at 2900 rpm

Experiments that can be conducted:

1) To determine the performance parameters of Centrifugal pump at constant speed.

Name of the Equipment:	RECIPROCATING PUMP TEST RIG



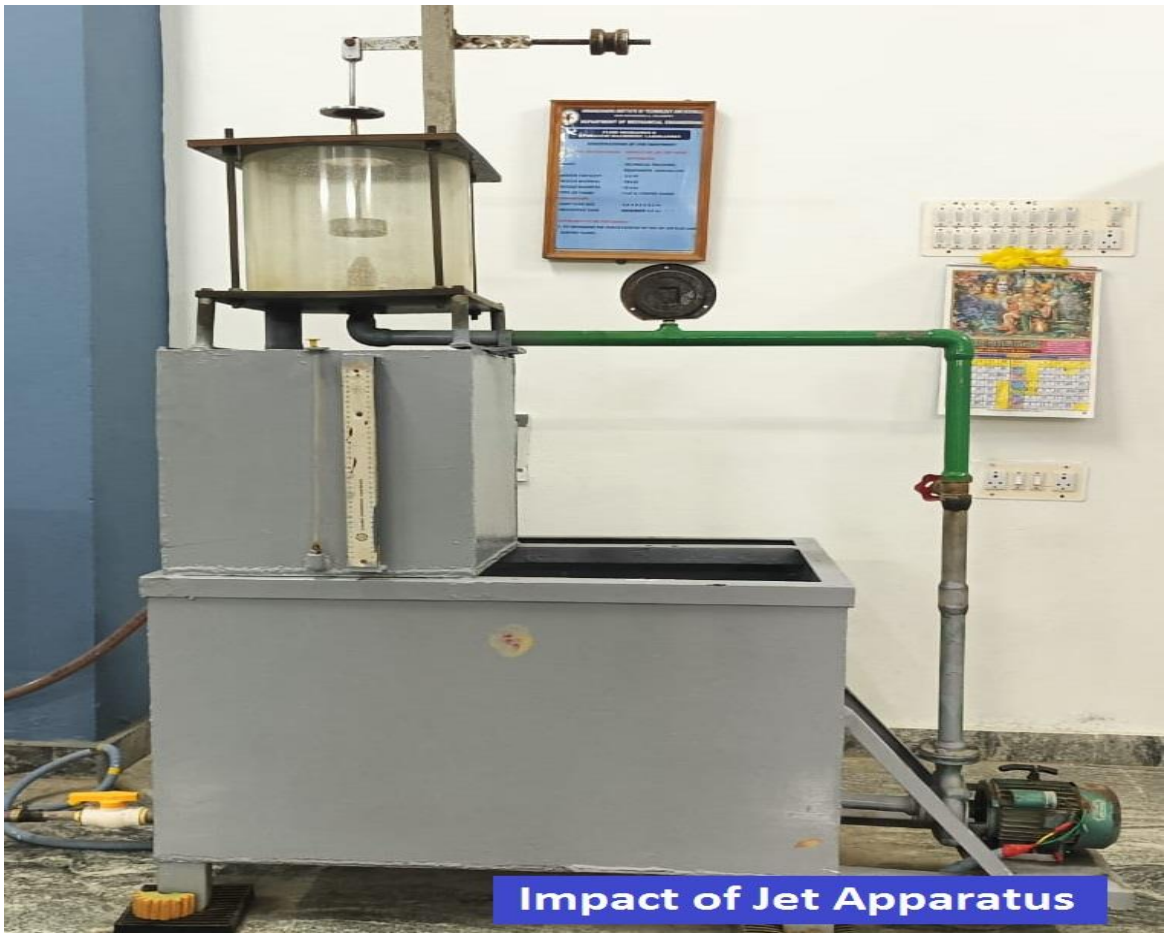
Specifications:

- Motor capacity: 0.5 HP
- Discharge capacity: 20 litres per min at 1440 rpm

Experiments that can be conducted:

1) To determine the performance parameters of Reciprocating pump at constant speed.

Name of the Equipment:	IMPACT OF JET APPARATUS



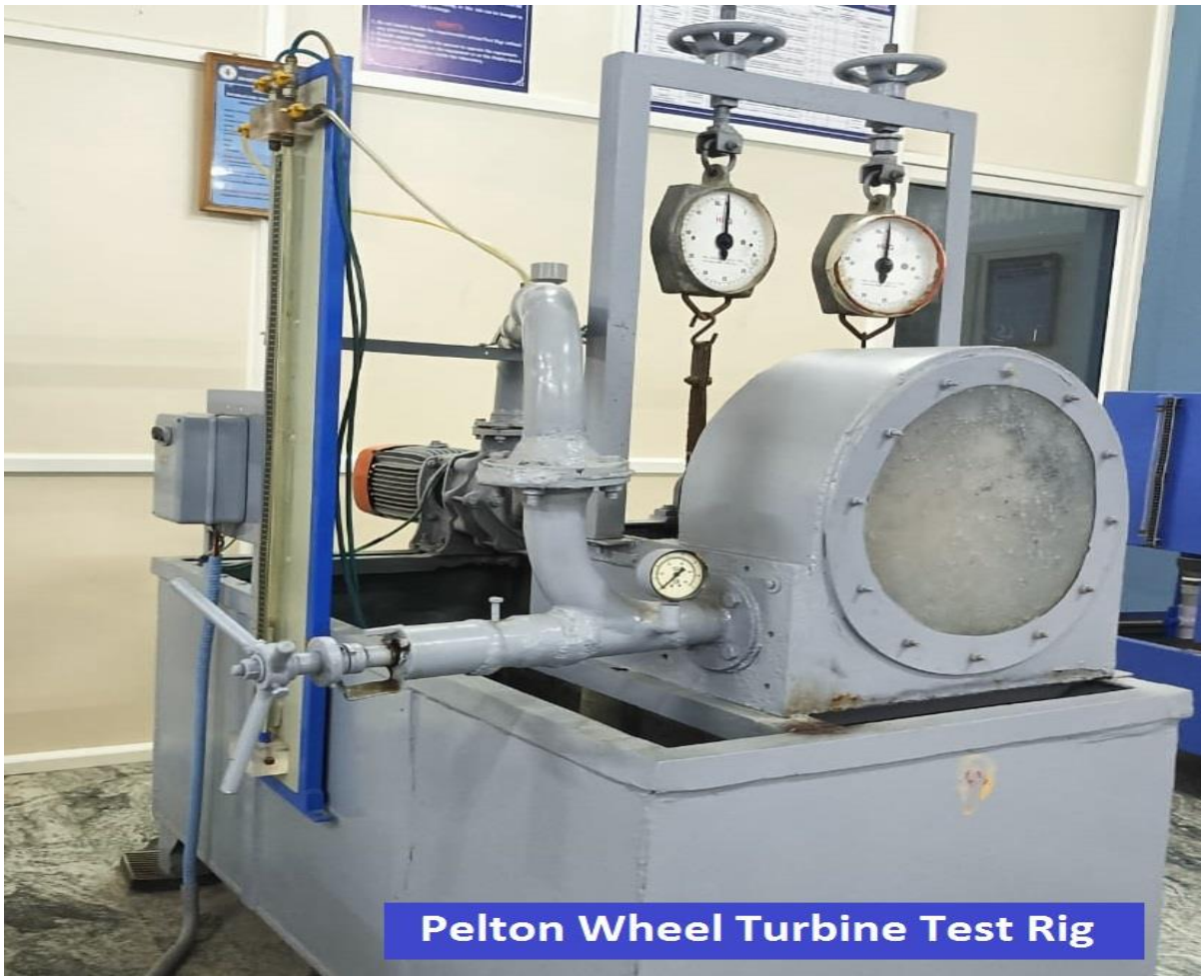
Specifications:

- Motor capacity: 0.5 HP
- Type of vanes: Flat & Curved vanes

Experiments that can be conducted:

1) To determine the force exerted by the jet on flat and curved vanes.

Name of the Equipment:	PELTON WHEEL TEST RIG



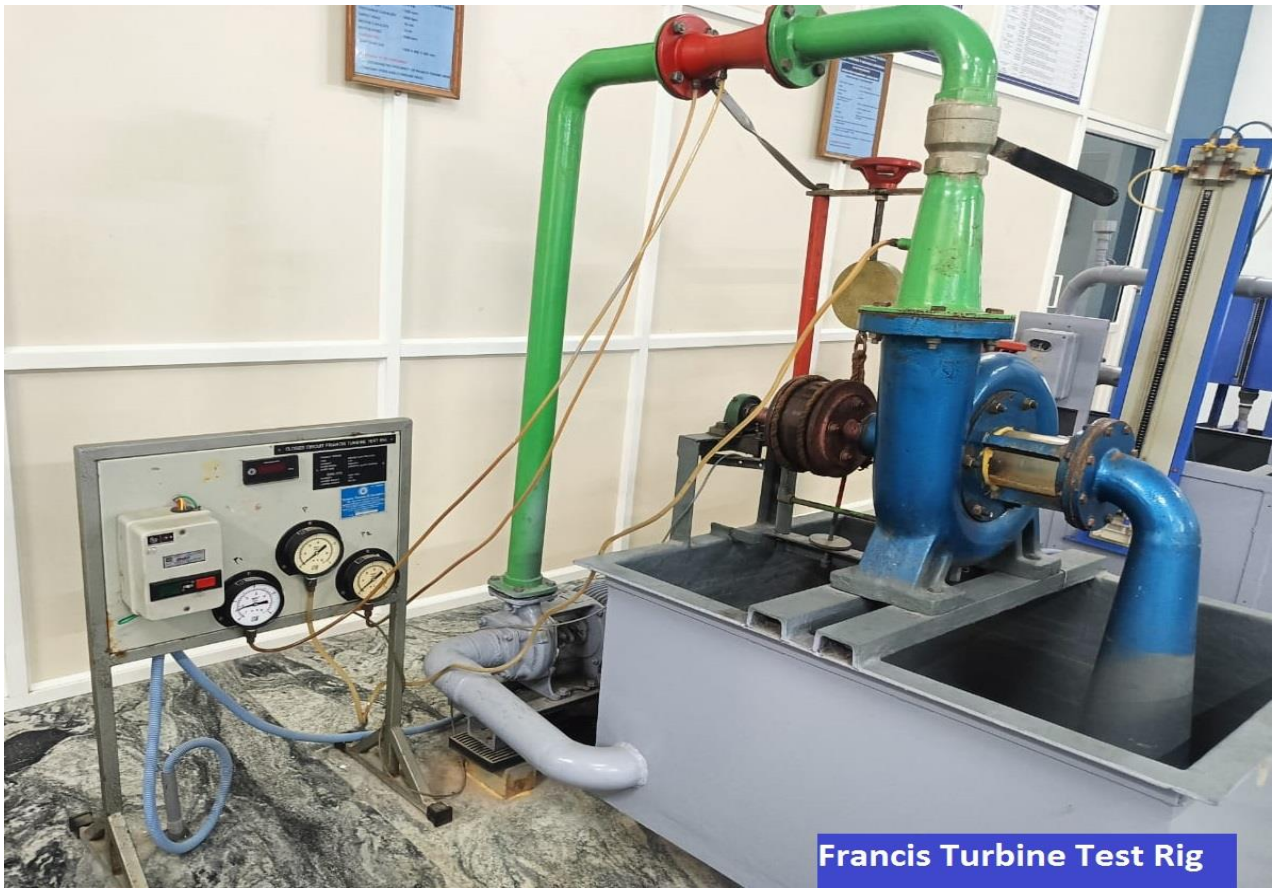
Specifications:

- Motor Capacity: 5 HP
- Turbine capacity: 1 HP
- Rated speed: 600 rpm
- Discharge capacity: 300 lpm
- Supply head: 37 mts
- Type: Tangential flow Impulse Turbine

Experiments that can be conducted:

1) To determine the performance parameters of Pelton wheel at constant speed.
2) To determine the performance parameters of Pelton wheel at constant head.

Name of the Equipment:	FRANCIS TURBINE TEST RIG



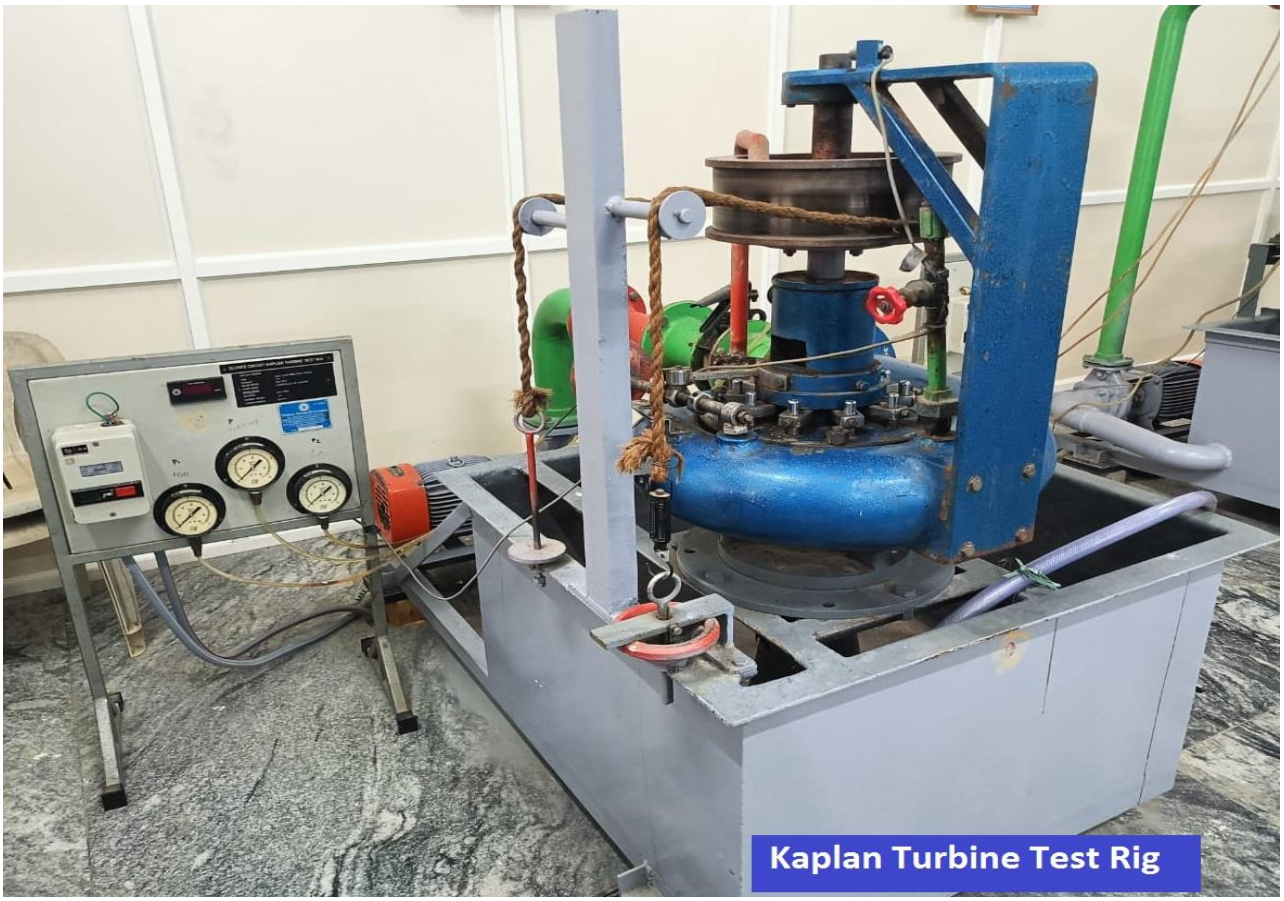
Specifications:

- Motor Capacity: 15 HP
- Turbine capacity: 3.75 kW
- Rated speed: 1250 rpm
- Discharge capacity: 2000 lpm
- Supply head: 18 mts
- Type: Inward flow reaction Turbine

Experiments that can be conducted:

1) To determine the performance parameters of Francis Turbine at constant speed.
2) To determine the performance parameters of Francis Turbine at constant head.

Name of the Equipment:	KAPLAN TURBINE TEST RIG



Specifications:

- Motor Capacity: 20 HP
- Turbine capacity: 3.75 kW
- Rated speed: 1500 rpm
- Discharge capacity: 5000 lpm
- Supply head: 8 m
- Type: Axial flow reaction Turbine

Experiments that can be conducted:

1) To determine the performance parameters of Kaplan Turbine at constant speed.
2) To determine the performance parameters of Kaplan Turbine at constant head.