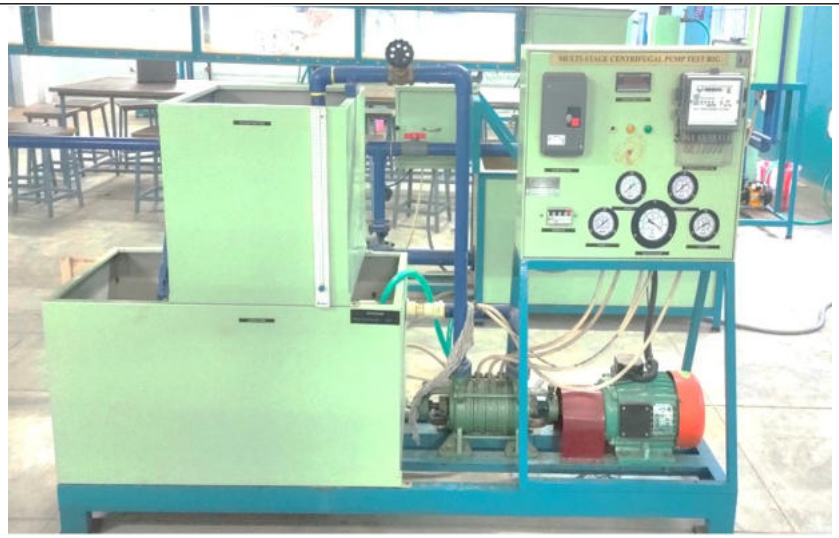
ANNAMACHARYA UNIVERSITY

CIVIL ENGINEERING DEPARTMENT

Name of the Lab: Hydraulics Lab

Name of the Lab in-charge: Dr. D. Gouse Peera

S.No.	Equipment Photo	Name of the Equipment	Specifications	Price
1.		Francis Turbine	Motor Capacity: 7.5 HP, 3Ph, 440V, 50Hz, AC. Electrical Supply : 3 Ph, 440V, AC, 32A, with Neutral & Earth. Loading: Electrical loading. Turbine : Propeller blade angles adjustable from maximum to minimum <u>Run-away speed</u> • 1450 RPM (Approx.) • Head – 15 m. (approx.). <u>Provisions:</u> • Flow rate by Venturimeter, Cd=0.9 • Head on turbine by pressure • Electrical load changed by Alternator assembly connected to electrical switches <u>Electrical load measurement:</u> • by energy meter • Propeller speed by digital RPM indicator. • Supply water control by gate valve.	3,38,859/-

2.		Single stage Centrifugal Pump	Electrical Services: 230V, 16A, 1ph, 50Hz, AC with Neutral & earth connection. Pump: Centrifugal pump (Kirloskar make), 1HP.Maximum Speed 2500 RPM Pressure Gauges: 0-2.1 Kg /cm^2 connected before delivery valve. Vacuum Gauge: 0-760mm of Hg, connected after suction valve Energy Meter: Single Phase, Energy meter constant 3200 Imp/KWh. Speed Indicator: 0-9999 RPM (Digital Type). Control Valves: Suction and Delivery. Total Head: 8 – 20m. Collecting Tank: 0.109 m^2 with Butterfly valve.	63,513/-
3.		Multistage Centrifugal Pump	Electrical Supply: 440V, 20A, AC 3Ph, 50 Hz with Neutral & earth Connections. Centrifugal Pump: 5HP, 3000 RPM with Four stages. Pressure Gauges: 4 Nos. Vacuum Gauge: 0 - 760 mm of Hg. Energy meter constant: 3200 Rev. /KW-Hr. Speed Indicator: 0 - 9999 RPM (Digital Type). Control Valves: For Delivery Measuring Tank Size: 0.22 m^2	1,03,132/-

4.		Impact of Jet on Vanes	Vane shapes: Flat, Hemispherical & Inclined. Material: Acrylic Jet Diameter: 6, 8 & 10mm Measurement: Flow rate of water by Rotameter. Jet force by digital force indicator Type: Re-circulating with sump & jet Chamber made of Stainless steel Jet Chamber: Fixed with toughened glass windows with leak proof rubber gasket	52,304/-
5.		Pelton Wheel Turbine	Supply Pump/Motor Capacity: 7.5HP, 3Ph, 440V, 50Hz, AC . <u>Turbine</u> Mean Dia. : 250mm No. of Buckets : 20 Diameter of Jet : 18mm Runaway Speed : 1800 RPM Turbine Head: 40 - 50 m (min to max.) Loading : Brake Drum Brake Drum Radius : 0.15 m Coefficient Of Discharge : Cd = 0.9	1,57,077/-

6.		Reciprocating Pump	Electrical Services : 230V, 16A, 1ph, 50Hz, AC with Neutral & earth connection. Pump : Reciprocating (Suguna make), 1HP, 500 RPM (Rated) Pressure Gauges : 0-7 Kg /cm^2 connected before delivery valve. Vacuum Gauge : 0-760mm of Hg, connected after suction valve Energy Meter : Single Phase, Energy meter constant 3200 Imp/Kwh. Speed Indicator : 0-9999 RPM (Digital Type). Control Valves : Suction and Delivery. Collecting Tank : 0.109 m^2 with Butterfly valve. Total Head : 30-35m Recommended Oil : SAE 20-40 Oil.	72,262/-

7.		Kaplan Turbine	Supply Pump/Motor Capacity: 10 hp 3 ph., 440V, 50Hz, AC. Electric Supply: 3 ph., 440V, AC, 30A, with Neutral& Earth. Pressure Gauge range : 0 – 7Kg/cm^2 Vacuum gauge: 0-760mm of Hg. Loading: A.C Alternator connected with electrical switches <u>Turbine</u> • Propeller blade angles adjustable from maximum to minimum • Run-away speed = 1200 RPM (At full load.) • Max. Head – 12 m. (approx.). <u>Provisions</u> • Flow rate by Venturimeter, C_d=0.9 • Head on turbine by pressure • Electrical load changed by Alternator assembly connected to electrical switches • Electrical load measurement by energy meter • Propeller speed by digital RPM indicator. Supply water control by gate valve.	3,95,870/-