

Laboratory Name	Fluid mechanics lab
Lab. Supervisor	Eng. Hamzeh Ali
Lab. Location	Mechanical Engineering Department



Device Name: Open Circuit wind Tunnel.

Used For: This equipment demonstrates the behavior of airfoil and other geometric figures operating in a uniform air flow inside a closed test section.

Experiment associated with it:

1. Lift and drag measurement of airfoil
2. Velocity distribution in the wind tunnel.

Courses associated with it: fluid mechanics.



Device Name: fluid friction in pipes with basic hydraulic feed system.

Used For: This equipment is capable to measure the friction loss in pipes, valves and other fittings.

Experiment associated with it: Fluid friction in pipes and losses from fittings.

Courses associated with it: fluid mechanics.



Device Name: Impact of water jet apparatus.

Used For: The equipment is designed to produce and measure force due to impact of water jet on a target.

Experiment associated with it: Impact of water jet

Courses associated with it: fluid mechanics.



Device Name: Bernoulli's theorem apparatus

Used For: This equipment demonstrates the relation between the total head, velocity head and static head and compared with Bernoulli's theorem and also to study the flow through the Venturi meter.

Experiment associated with it: Bernoulli's Theorem Application - Flow through Venturi Tube

Courses associated with it: fluid mechanics.



Device Name: Orifice and jet flow apparatus

Used For: This equipment is used to study the flow through an orifice.

Experiment associated with it: Orifice and jet flow.

Courses associated with it: Fluid mechanics



Device Name: Piping loss test panel.

Used For: This equipment is capable to measure the friction loss in pipes, valves and other fittings..

Experiment associated with it: Fluid friction in pipes and losses from fittings.

Courses associated with it: fluid mechanics



Device Name: Osborn Reynolds apparatus.

Used For: This equipment is used to visualize the flow field in a pipe at different Reynolds's number (Re) (laminar, transition, and turbulent flow visualization).

Experiment associated with it: laminar and turbulent flow visualization

Courses associated with it: Fluid mechanics



Device Name: Pump test set

Used For: This equipment allows us to measure the operation condition and generate the characteristic curves for the following pumps:

1. Centrifugal
2. Gear
3. Axial
4. Turbine.

Experiment associated with it: : Pump test set

Experiment associated with it: fluid mechanics.



Device Name: Two tube Saybolt viscometer

Used For: to demonstrate the viscosity variation with temperature

Experiment associated with it: Measurement of Viscosity

Courses associated with it: Fluid mechanics.



Device Name: Centrifugal Pump Test Rig.

Used For: o measure the operating conditions and generate the characteristic curves for the centrifugal pump.

Experiment associated with it: Parallel and series pumps

Courses associated with it: fluid mechanics



Device Name: Orifice and jet flow apparatus

Used For: This equipment is used to study the flow through an orifice.

Experiment associated with it: Orifice and jet flow.

Courses associated with it: Fluid mechanics



Device Name: pressure gauge

Used For: showing the bourdon tube

Experiment associated with it: calibration of bourdon gauge

Courses associated with it: Fluid mechanics



Gate valve



Ball valve

Experiment associated with it:
Fluid friction in pipes and losses from fittings.



Device Name: Bernoulli's theorem apparatus

Used For: This equipment demonstrates the relation between the total head, velocity head and static head and compared with Bernoulli's theorem and also to study the flow through the Venturi meter.

Experiment associated with it: Bernoulli's Theorem Application - Flow through Venturi Tube

Courses associated with it: fluid mechanics.



Device Name: Impact of water jet apparatus.

Used For: The equipment is designed to produce and measure force due to impact of water jet on a target.

Experiment associated with it: Impact of water jet

Courses associated with it: fluid mechanics.



Device Name: Series/ Parallel Pumps.

Used For: This Equipment is used to study the operating conditions and generate the characteristic curve for two centrifugal pumps connected in series or in parallel.

Experiment associated with it: Parallel and series pumps

Courses associated with it: fluid mechanics



Device Name: Computer Controlled Water Hammer Unit, with SCADA

Used For: The unit (EGAC) is designed to demonstrate the effects of an instantaneous variation of the speed of a fluid. It is possible to study the water hammer, which is the consequence of a quick change in a fluid speed. Besides, damping of water hammer effects by using surge tanks can also be demonstrated

Experiment associated with it: water hammering phenomena

Courses associated with it: Fluid mechanics.



Device Name: Calibration of bourdon gauge.

Used For: The main objective of this experiment is to establish a calibration curve for a Bourdon Gauge.

Experiment associated with it Calibration of bourdon gauge.

Courses associated with it: Fluid mechanics.