

## “Pump Technology” Training Program (English Material)

**Course Length:** 25 Hours @ 5 days

### Objectives:

This course presents mixed technical/academic course showing the definition of common terms in fluid mechanics, equations and the techniques of pumps to raise the capability of the trainee for carrying out correct evaluation of the under hand pumping station.

### Participants:

This course is constructed for mechanical engineers and technicians.

### Course Outline:

#### **Pump types, characteristics and operation**

- Introduction
- Classification of pumps
- Selection of pumps
- Pump Characteristics
  - o Head
  - o Capacity
  - o Power and efficiency
  - o Total System Head

#### **Centrifugal Pump Construction Features**

##### Pump Characteristic Curves

- o No Static Head - All Friction
- o Negative (Gravity) Head
- o Mostly Friction Heads
- o Specific Speed and Pump Type
- o Net Positive Suction Head (NPSH) and Cavitations

#### **Positive Displacement pumps, (Reciprocating Pumps)**

- Introduction
- Operating Principles
- Positive Displacement Pumps Characteristic Curves
- The Plunger Pump

- The Piston Pump
- Single and Double Acting Piston Pumps
- The Diaphragm Pump
- Troubleshooting of Reciprocating Pumps

**Positive Rotary Pumps:**

- Introduction
- Rotary Pumps
- The Gear Pumps: (External Gear Pumps – Internal Gear Pumps)
- The Lobe Pumps
- The Sliding Vane Pumps
- The Rotary Screw Pumps