

Course name:	PNEUMATICS
Short name:	PNE
Length:	40 hrs
Prerequisites:	Working skills in four-function math including whole numbers, decimals and fractions. The ability to manipulate and solve basic algebraic equations and calculate areas and volumes is also required.

Purpose

This course provides a basic foundation in pneumatic components, circuits, controls, their application, and drawing standards.

Description

The course simulators are used by trainees to build circuits and to analyze systems. This is a very hands-on course targeted at those who want the hands-on skill exposure.

Topics include:

- Fluid physics
- Filtration techniques
- Actuators
- Accessories
- Cylinders
- Memories
- Valves
- Air distribution
- Limit/pressure switches
- Step flow chart
- Basic pneumatic circuit design
- Pneumatics safety
- Timers
- Pneumatic circuit analyzing
- Practical piping skills

Course Objectives:

Upon successful completion of this course, the trainee will be competent in:

- Applying appropriate safety procedures as they relate to the energy contained in a pneumatic circuit.
- Recognizing the internal operation of pneumatic components.
- Reading, interpreting and sketching pneumatic schematics.
- Pneumatic circuit operation and fluid flow characteristics.
- Distinguishing the effect of flow versus pressure with respect to speed and force.
- Performing the mathematical calculations for pressure, force and area as they apply to pneumatic circuits.
- Analyzing, identifying and repairing faulty components in a pneumatic circuit.

Course name:	HYDRAULICS
Short name:	HYD
Length:	80 hrs
Prerequisites:	Working skills in four-function math including whole numbers, decimals and fractions. The ability to manipulate and solve basic algebraic equations and calculate areas and volumes is also required.

Purpose

This course provides a basic foundation in hydraulic components, circuits, their application, and drawing standards.

Description

The course simulators are used by trainees to build circuits and to analyze systems. This is a very hands-on course targeted at those who want the hands-on skill exposure.

Topics include:

- Fluid physics
- Flow control devices
- Fluid safety
- Accumulators
- Pressure switches
- Pumps
- Heat exchangers
- Cylinders
- Filters/strainers
- Valves
- Motors
- Pressure control devices
- Basic hydraulic circuit design
- Practical piping skills
- Hydraulic circuit analyzing
- Reservoirs

Course Objectives:

Upon successful completion of this course, the trainee will be competent in:

- Applying appropriate safety procedures as they relate to the energy contained in a hydraulic circuit.
- Recognizing the internal operation of hydraulic components.
- Reading, interpreting and sketching hydraulic schematics.
- Hydraulic circuit operation and fluid flow characteristics.
- Distinguishing the effect of flow versus pressure with respect to speed and force.
- Performing the mathematical calculations for pressure, force and area as they apply to hydraulic circuits.
- Analyzing, identifying and repairing faulty components in a hydraulic circuit.