**MECHANICAL MAINTENANCE ENGINEERING**

The **Training Elements** of a student in Mechanical Maintenance Engineering Technology major entering coop program in a company should include some or all of the following:

1. **Steam and Gas Turbines**

* Operating principles
* Main parts and functions
* Normal maintenance requirements

1. **Pumps – Centrifugal**

* Construction and main components of single and multi-stage pumps, functions of the components.
* Disassemble, clean, inspect and reassemble a pump using a complete set of gaskets, packing materials or seal, an inspection sheet and a selection of tools.
* Alignment of a pump with a motor using dial gauges. Correct to within manufacturer’s recommended accuracy.

1. **Compressors – Reciprocating and Centrifugal**

* Operating principles
* Main components of compressors
* Function of the components

1. **Valves**

* Types of valves and their applications
* Establish maintenance requirements
* Disassemble, inspect, change glad packing, and reassemble a valve in accordance with manufacturer’s recommendations, tests for gland leakage.

1. **Boilers**

* Identify boiler types, principle of operation
* Identify parts and functions
* Boiler controls, adjustment air-fuel ratios
* Boiler cleaning and maintenance

1. **Diesel Engines**

* Construction, main parts and functions
* Air intake-exhaust system, turbochargers
* Fuel System, injection pumps, filters
* Cooling system, thermostatic valves
* Lubrication system, external gear pumps
* Troubleshooting and maintenance

1. **Heat Exchangers**

* Identify different classes
* Troubleshooting for leakage
* Disassemble, inspect and reassemble
* Maintenance requirements

1. **Mechanical Transmission Systems**

* Belt drive; remove, cleaning and replacement
* Chain drive; removal; adjustment of length and reinstallation
* Gear box; disassembly, cleaning, inspection and reassembly

1. **Fluid Power Systems**

* Hydraulic and pneumatic systems, their controls, hydraulic pumps, motors, control valves, accumulators, etc.
* Basic fluid power circuits
* Troubleshooting and maintenance of main components of the systems

1. **Lubrication**

* Given rotating equipment, a lubrication sheet, a selection of lubricants and necessary tools, drain, flush and refill the rotating equipment to the prescribed level with correct lubricant following the procedures recommended by the manufacturers.

1. **General Maintenance**

* Carry out a maintenance task using job order forms

Participate in job planning, scheduling, reporting and follow-up.