

Industrial Mechanic (Millwright) – Online Upgrading A Guide to Course Content

Industrial Mechanics (Millwright) install, maintain and repair machinery in factories, mines and production facilities.

Training Requirements: All candidates applying for upgrading training must be eligible to challenge the Interprovincial Journeyperson examination.

This program is designed to prepare individuals to challenge the Industrial Mechanic (Millwright) Interprovincial Journeyperson examination.

The upgrading program encompasses the scope of the trade. Completion of all assignments will aid in success.

As there is no practical component to the upgrading training program, additional study and practice is recommended in areas where individuals have minimal on-the-job experience.

Important Notes:

This program uses continuous intake so candidates may apply to begin at any time. Participants will have a maximum of eight months to complete the entire course.

Computers used by participants for this program must meet certain minimum technical requirements. This information will be provided upon successful application to this program.

Interested candidates must contact SATCC, not Saskatchewan Polytechnic, when applying for this program.

The information contained in this pamphlet serves as a guide for employers and apprentices.

The pamphlet briefly summarizes the training delivered in the upgrading program.

The content of the technical training components is subject to change without notice.

Occupational Skills

Information will be provided on the following general topics:

- **Tools and Equipment:** includes hand tools, portable power tools, shop machines, precision measuring tools, layout instruments and torch cutting equipment
- **Organizes Work:** includes information on WHMIS and OH&S, engineered drawings and schematics
- **Routine Trade Tasks:** includes machine operation, fabrication, lubrication, alignment, fasteners, metallurgy
- **Measuring and Layout:** includes measurement of material and components using precision tools, and placing components using layout tools
- **Cutting and Welding Equipment:** includes material cutting using gas and plasma arc, operations using gas welding equipment, and welding using arc, MIG and TIG welding equipment
- **Preparation for Installation and Maintenance of Components and Systems:** includes base types and components, lay out of location lines, ability to position and install anchor bolts, and level and grout base

Rigging, Hoisting and Lifting

Information will be provided on the following general topics:

- **Planning Lift:** includes determining load, selection of rigging and lifting equipment
- **Hoists Load:** includes component installation, load charts, safety audits, safe lifting procedures, signaling, and load stability
- **Inspection and Maintenance:** includes equipment inspection, maintenance, storage and regulations

Mechanical Components and Systems

Information will be provided on the following general topics:

- **Prime Movers:** includes the installation, diagnosis, maintenance and repair of prime movers
- **Shafts, Bearings and Seals:** includes shafts, friction and anti-friction bearings, bearing installation, shaft alignment, seal selection and installation
- **Couplings, Clutches and Brakes:** includes equipment types, installation, maintenance diagnosis and repair
- **Chain and Belt Drive Systems:** includes equipment types, installation, diagnosis and repair
- **Gear Systems:** includes gear systems, diagnosis, repair and maintenance

Material Handling/Process Systems

Information will be provided on the following general topics:

- **Fans and Blowers, Compressors, Pumps, Conveying Systems:** includes types, installation, diagnosis, repair and maintenance
- **Process Tanks and Containers:** includes installation, diagnosis, repair and maintenance

Fluid Power

Information will be provided on the following general topics:

- **Hydraulic Systems:** includes information on hydraulic circuits and components, diagnosis of hydraulic systems and repair
- **Pneumatic and Vacuum Systems:** includes information on pneumatic circuits, operation of vacuum systems, diagnosis and repair, and maintenance

Preventive and Predictive Maintenance, Testing and Commissioning

Information will be provided on the following general topics:

- **Predictive Maintenance Activities:** includes specialized predictive maintenance tools and machinery and equipment balancing
- **Specialized Testing and Analysis:** includes vibration analysis and non-destructive testing
- **Commissioning Equipment:** includes commissioning mechanical systems and components, material handling/process systems, and fluid power systems

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