



INMEC2 – Industrial Mechanic (Millwright) Apprenticeship Level 2

Trades

Effective Term & Year: Fall 2022

Program Outline Review Date: 2026-03-01

Program Area: Trades Apprenticeship Training

Description:

This program delivers the technical and practical training required for Level 2 of the 4-level Industrial Mechanic (Millwright) Apprenticeship program. Apprentices will develop the skills, knowledge and training related to using fits and tolerances and installing and maintaining lubricating systems and seals and bearings. Using safe rigging practices, securing equipment, and leveling and alignment procedures are covered along with theoretical content related to hydraulics and interpreting hydraulic schematics and components. The program also develops skills for the following welding processes: shielded metal arc welding (SMAW), gas metal arc welding (GMAW) and gas tungsten arc welding (GTAW). Safe work practices related to the industrial mechanic trade are reinforced throughout the program.

Credentials Granted:

Upon successful completion of the 7-week Level 2 Industrial Mechanic (Millwright) Apprenticeship program, students receive:

- Level 2 Technical Training credit of the Industrial Mechanic (Millwright) Apprenticeship program from SkilledTradesBC

Delivery Methods: Face-to-Face, Online

Program Duration: 7 weeks

Instructional Activity and Hours:

Activity	Hours
Instructional Hours (hrs/wk)	28 hrs/wk
Directed Studies (hrs/wk)	2 hrs/wk
Total (hrs/wk)	30 hrs/wk
Total Program Hours	210 Hours

Content Weighting:

Activity	Percentage
Classroom, Directed Studies or Online Instruction	75%
Seminar/Tutorials	25%

Admission Requirements:

Sponsored Industrial Mechanic (Millwright) Apprentice who has successfully completed Level 1 Industrial Mechanic (Millwright) technical training or an Industrial Mechanic Foundation program.

Flexible Assessment:

Credit cannot be awarded for this program through Flexible Assessment.

Program Transfer Credit:

For information about block transfer agreements between programs in British Columbia, Alberta, and elsewhere, please visit <http://www.cotr.bc.ca/transfer>.

To minimize transfer issues, check with an academic advisor at the institution that will receive the transfer credits.

Textbooks and Required Resources:

Textbook selection varies by instructor and may change from year to year. At the Program Outline Effective Date the following textbooks were in use (most current edition):

Millwright Apprentice: Level 2: College of the Rockies Custom Package. Queen's Printer. 2019.

Intro to Hydraulics Technology – Student Workbook

Millwright Manual. Queen's Printer

Industrial Hydraulic Manual. Eaton Hydraulics Inc. 5th ed, (2008).

Program Competencies and Technical Training Content:

Upon successful completion of this program, students will be able to:

IMECH 201 Perform Routine Trade Activities

- Use mathematics and science
- Lubricate systems and components
- Perform leveling of components and systems
- Perform material identification
- Perform heat treatment of metal
- Use mechanical drawings and specifications

IMECH 202 Perform Cutting and Welding Operations

- Weld material using shielded arc welding equipment (SMAW)
- Weld material with gas metal arc welding equipment (GMAW)
- Weld material with gas tungsten arc welding equipment (GTAW)

IMECH 203 Service Shafts, Bearings and Seals

- Select, install and maintain shafts
- Select, install and maintain bearings
- Select, install and maintain seals

IMECH 204 Service Couplings, Clutches and Brakes

- Select, install and maintain chain drive systems
- Select, install and maintain clutches and brakes

IMECH 205 Service Chain and Belt Drive Systems

- Select, install and maintain chain drive system
- Select, install and maintain belt drive systems

IMECH 206 Service Gear Systems

- Select and install gear systems
- Diagnose, maintain and repair gear systems

IMECH 207 Perform Shaft Alignment Procedures

- Perform rough alignment
- Perform dial alignment procedures

Evaluation and Assessment:

INDUSTRIAL MECHANIC (MILLWRIGHT) APPRENTICESHIP LEVEL 2

COTR COURSE	SUBJECT COMPETENCIES	THEORY WEIGHTING	PRACTICAL WEIGHTING
IMECH 201	Perform Routine Trade Activities	15%	10%
IMECH 202	Perform Cutting and Welding Operations	10%	15%
IMECH 203	Service Shafts, Bearings and Seals	15%	15%
IMECH 204	Service Couplings, Clutches and Brakes	15%	0%
IMECH 205	Service Chain and Belt Drive Systems	15%	20%
IMECH 206	Service Gear Systems	15%	20%
IMECH 207	Perform Shaft Alignment Procedures	15%	20%
Total		100%	100%
In-school theory / practical subject competency weighting		75%	25%
Final in-school percentage score		IN-SCHOOL%	
In-school Percentage Score			
Combined theory and practical subject competency multiplied by		80%	
Standard Level Exam Percentage Score			
The exam score is multiplied by		20%	
Final Percentage Score.		FINAL%	

Pass Requirements:

1. Successful completion of the in-school training is defined as a final overall minimum of 70% to meet SkilledTradesBC standards.
 - Students must maintain an acceptable level of attendance, complete all assigned projects and pass all exams to successfully complete the program.

Students must provide their own:

- flame retardant coveralls
- hard hat
- safety glasses
- steel-toed boots

- pens, pencils, coloured pencils, binders
- reference manuals
- Texas Instruments T130 Calculator

Academic Policies:

College of the Rockies policies related to courses can be found at <https://cotr.bc.ca/about-us/college-policies/> and include the following:

- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Conduct (plagiarism, other cheating, behavioral misconduct)
- Policy 2.5.8 Academic Performance
- Policy 2.5.3 Grade Appeal
- Policy 2.4.9 Student Concerns Re Faculty

Program Grade

COM	NCG
Completed to the defined standard – 70% or greater	No Credit Granted – less than 70%

Program Changes:

Information contained in program outlines is correct at the time of publication. Content of the program is revised on an ongoing basis to ensure relevance to changing educational, employment, and marketing needs. The instructor endeavours to provide notice of changes to students as soon as possible. The instructor reserves the right to add material to programs.

Industry Training:

The program competencies and technical training content delivered in this program follow the SkilledTradesBC Program Outline for this trade.

Safety Catalog:

WorkSafeBC regulations apply to all trades programs. Students are expected to follow all safe work practices and have high regard for the safety of others as well as of themselves. Students are responsible to wear personal protective equipment (PPE) as directed. At a minimum, students must provide and wear approved safety footwear and eyewear at all times in the shop. Additional PPE may be required for specific tasks. Students are expected to wear clothing suitable for working safely in the shop.

Course Descriptions: Refer to Course Outlines – <https://outlines.cotr.bc.ca/course/>

