INMEC3 – Industrial Mechanic (Millwright) Apprenticeship Level 3

Trades

Effective Term & Year: Fall 2022
Program Outline Review Date: 2026-03-01

Program Area: Trades Apprenticeship Training

Description:

This 7-week program delivers the technical and practical training required for Level 3 of the 4-level Industrial Mechanic (Millwright) Apprenticeship program. Apprentices will develop the skills, knowledge and training related to performing dial and laser alignments, selecting, installing and maintaining fans and blowers, positive and non-positive displacement pumps, compressors, tanks, containers and piping. Apprentices also cover hydraulic components, circuits and systems and pneumatic components, circuits and systems. Safe work practices related to the industrial mechanic trade are reinforced throughout the program.

Credentials Granted:

Upon successful completion of the 7-week Level 3 Industrial Mechanic (Millwright) Apprenticeship program, students receive:

- Level 3 Technical Training credit of the Industrial Mechanic (Millwright) Apprenticeship program from SkilledTradesBC

Delivery Methods: On-Campus (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
Theory	75%
Practical Skills	25%

Admission Requirements:

Sponsored Industrial Mechanic (Millwright) Apprentice who has successfully completed Level 2 Industrial Mechanic (Millwright) technical training.

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):

Fournie, Ronald A. *Millwright Manual Study Guide.* Sarnia, Ontario. 1997.

Millwright Manual. Ministry of Labour Apprenticeship Branch.

Industrial Hydraulic Manual. Eaton (Vickers). 2006.

Millwright Apprentice: Level 3: College of the Rockies Custom Package. Queen's Printer.

Program Competencies and Technical Training Content:

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

IMECH 301 Perform Routine Trade Activities

- Use mathematics and science
- Perform leveling of components and systems
- Use mechanical drawings and specifications

IMECH 302 Perform Shaft Alignment Procedures

- Perform dial alignment
- Perform laser alignment

IMECH 303 Service Fans and Blowers

- Select, install and maintain fans
- Select, install and maintain blowers

IMECH 304 Service Pumps

- Identify and select positive displacement pumps
- Install, maintain and repair positive displacement pumps
- Identify and select non-positive displacement pumps
- Install, maintain and repair non-positive displacement pumps

IMECH 305 Service Compressors

- Identify and select compressors
- Install, maintain and repair compressors

IMECH 306 Service Piping, Tanks and Containers

- Select, install and maintain process tanks and containers
- Select, install and maintain piping

IMECH 307 Service Hydraulics Systems

- Identify hydraulic components
- Assemble hydraulic circuits
- Maintain and repair hydraulic systems

IMECH 308 Service Pneumatic and Vacuum Systems

- Identify pneumatic and vacuum components
- Assemble pneumatic and vacuum circuits
- Maintain and repair pneumatic and vacuum systems

Evaluation and Assessment:

INDUSTRIAL MECHANIC (MILLWRIGHT) APPRENTICESHIP LEVEL 3

COTR COURSE	SUBJECT COMPETENCIES	THEORY WEIGHTING	PRACTICAL WEIGHTING
IMECH 301	Perform Routine Trade Activities	10%	0%
IMECH 302	Perform Shaft Alignment Procedures	12%	20%
IMECH 303	Service Fans and Blowers	12%	0%
IMECH 304	Service Pumps	15%	20%
IMECH 305	Service Compressors	12%	0%
IMECH 306	Service Piping, Tanks and Containers	12%	20%
IMECH 307	Service Hydraulic Systems	15%	20%
IMECH 308	Service Pneumatic and Vacuum Systems	12%	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 minumum 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 2.4.8 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.