INMEC4 – Industrial Mechanic (Millwright) Apprenticeship Level 4

Trades

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

Program Area: Trades Apprenticeship Training

Description:

This 7 week program provides the skills, knowledge and training necessary for Level 4 of the 4-level Industrial Mechanic (Millwright) Apprenticeship program. Program content incudes conveying systems, turbines, electric motors and internal combustion engines. Apprentices learn to preform preventative and predictive maintenance related to operational equipment effectiveness, vibration analysis, balancing procedures and NDE (non-destructive evaluation) procedures. Commissioning and decommissioning systems and components as well as servicing robotics and automated equipment are also covered. Safe work practices related to the industrial mechanic trade are reinforced throughout the program.

Credentials Granted:

Upon successful completion of the 7 week Level 4 Industrial Mechanic (Millwright) Apprenticeship program, students receive:

- Level 4 Technical Training credit of the Industrial Mechanic (Millwright) Apprenticeship program from SkilledTradesBC
- Industrial Mechanic Apprenticeship Level 4 Certificate from the College of the Rockies

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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 3 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 4: College of the Rockies Custom Package. Queen's Printer. 2014.

Program Competencies and Technical Training Content:

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

IMECH 401 Perform Routine Trade Activities

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

IMECH 402 Use Communication and Mentoring Techniques

- Use communication techniques
- Use mentoring techniques

IMECH 403 Service Conveying Systems

- Identify conveying systems
- Assemble conveying systems
- Maintain and repair conveying systems

IMECH 404 Service Prime Movers

- Service electric motors
- Service internal combustion engines
- Service turbines

IMECH 405 Perform Preventative and Predictive Maintenance

- Perform preventative and predictive maintenance activities
- Perform vibration analysis procedures
- Perform balancing procedures
- Perform non-destructive evaluation (NDE) procedures

IMECH 406 Perform Commissioning and Decommissioning of Equipment

- Commission systems and components
- Decommission systems and components

IMECH 407 Service Robotics and Automated Equipment

- Service robotics and automated equipment

Evaluation and Assessment:

EVALUATION AND ASSESSMENT:

INDUSTRIAL MECHANIC (MILLWRIGHT) LEVEL 4

COTR COURSE	SUBJECT COMPETENCIES	THEORY WEIGHTING	PRACTICAL WEIGHTING
IMECH 401	Perform Routine Trade Activities	10%	0%
IMECH 402	Use Communication and Mentoring Techniques	5%	0%
IMECH 403	Service Conveying Systems	21%	50%
IMECH 404	Service Prime Movers	28%	0%
IMECH 405	Perform Preventative and Predictive Maintenance	21%	0%
IMECH 406	Perform Commissioning and Decommissioning of Equipment	10%	50%
IMECH 407	Service Robotics and Automated Equipment	5%	0%
	Total	**100%**	**100%**
In-school theory / practical subject competency weighting		75%	25%
Final in-school percentage score Apprentices must achieve a minimum 70% as the final in-school percentage score to be eligible to write the Interprovincial Red Seal or ITA CofQ exam.		IN-SCHOOL %	

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.