



## INMECF – Industrial Mechanic (Millwright) Foundation

### Trades

**Effective Term & Year:** Fall 2022

**Program Outline Review Date:** 2026-03-01

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**Program Area:** Trades Foundation Training

#### **Description:**

This comprehensive 24-week Industrial Mechanic (Millwright) Foundation (pre-apprenticeship) program provides students the skills, knowledge and training necessary to safely understand, maintain and perform troubleshooting on equipment in the heavy industry sector and covers the program competencies for Level 1 of the four level Industrial Mechanic (Millwright) Apprenticeship program. Content covered includes using codes, regulations and standards for safety related functions, performing routine trade activities such as leveling of components and systems, use reference documentation, use mechanical drawings and specifications, performing measuring and layout of work pieces, performing cutting and welding operations with oxy-fuel and plasma arc cutting equipment and performing hoisting/lifting, moving and rigging. The program includes classroom theory, demonstrations, practical hands-on training in an industrial shop setting. Safe work habits are emphasized, reinforced and practiced throughout the program.

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#### **Credentials Granted:**

Upon successful completion of the 24-week Industrial Mechanic (Millwright) Foundation program, students receive

- Level 1 Technical Training credit from SkilledTradesBC of the 4 Level Industrial Mechanic (Millwright) Apprenticeship program
- Certificate of Completion from SkilledTradesBC
- Industrial Mechanic Foundation Certificate from the College of the Rockies
- Credit for 425 work-based training hours from SkilledTradesBC

**Delivery Methods:** Face-to-Face, Online

**Program Duration:** 24 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	720 Hours

**Content Weighting:**

Activity	Percentage
Classroom, Directed Studies or Online Instruction	60%
Seminar/Tutorials	40%

**Admission Requirements:**

Secondary school graduation or equivalent, or completion of a College of the Rockies assessment to an acceptable level.

**Highly Recommended Admission Prerequisites:**

The following education is **highly** recommended for student success within the program:

- Workplace MATH 10 and Apprenticeship MATH 12. Either Apprenticeship and Workplace Math 11, Trades Mathematics 11, or equivalent
- Either English 12, English Studies 12, English First Peoples 12, ENGL 090, or equivalent (refer to Course Equivalency information on the College Website)

**Flexible Assessment:**

Credit can 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.

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### **Textbooks and Required Resources:**

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

*Millwright Manual of Instruction*, Queen's Printer.

*Complete Set of Millwright Competencies*

### **Program Competencies and Technical Training Content:**

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

#### **IMECH 101 Perform Safety Related Functions**

- Use codes, regulations and standards
- Use personal protective equipment (PPE) and safety equipment
- Maintain safe worksite
- Perform lock-out, tag-out and zero energy procedures

#### **IMECH 102 Use Tools and Equipment**

- Use hand and portable power tools
- Use shop machines
- Use access equipment

#### **IMECH 103 Perform Routine Trade Activities**

- Use mathematics and science
- Lubricate systems and components
- Perform leveling of components and systems
- Use fastening and retaining devices
- Use manufacturer, supplier and reference documentation
- Use mechanical drawings and specifications

#### **IMECH 104 Use Communication and Mentoring Techniques**

- Use communication techniques

### IMECH 105 Perform Measuring and Layout of Work Piece

- Prepare work area, tools and equipment
- Layout and fabricate work piece

### IMECH 106 Perform Cutting and Welding Operations

- Cut material with oxy-fuel and plasma arc cutting equipment

### IMECH 107 Perform Rigging, Hoisting/Lifting and Moving

- Select and use sling and rigging attachments
- Select and use hoisting and lifting equipment
- Create a rigging plan

## Evaluation and Assessment:

### INDUSTRIAL MECHANIC FOUNDATION

COTR COURSE	SUBJECT COMPETENCIES	THEORY WEIGHTING	PRACTICAL WEIGHTING
IMECH 101	Perform Safety Related Functions	20%	15%
IMECH 102	Use Tools and Equipment	25%	30%
IMECH 103	Perform Routine Trade Activities	20%	25%
IMECH 104	Use Communication and Mentoring Techniques	1%	1%
IMECH 105	Perform Measuring and Layout of Work Piece	10%	9%
IMECH 106	Perform Cutting and Welding Operations	10%	10%
IMECH 107	Perform Rigging, Hoisting/Lifting and Moving	14%	10%
<b>Total</b>		<b>100%</b>	<b>100%</b>
<b>In-School Theory/Practical Subject Competency Weighting</b>		60%	40%
<b>Final in-school percentage score</b>			
Students must achieve a minimum 70% overall as the final in-school percentage score		<b>IN-SCHOOL %</b>	
<b>In-school percentage score</b>		80%	
Combined theory and practical subject competency			
<b>Final Exam</b>		20%	
<b>Final percentage score</b>		FINAL%	

**Pass Requirements:**

- 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.
  - Complete of all Workplace Health and Safety courses within the program.

**Students must provide their own:**

- Steel toed boots
- Safety glasses
- Flame resistant work clothes
- Computer
- Pens, pencils, coloured pencils, binders
- Texas instrument TI30 calculator

**Workplace Health and Safety Courses:**

Workplace Hazardous Material Information System (WHMIS: PVHE-700)

Occupational First Aid – Level 1 (OFA-1: PVHE-100)

**Workplace Health and Safety Courses Grade Scheme:**

COM	NCG
Completed to the minimum defined standard	No credit granted – less than minimum defined standard

**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/>