Industrial Mechanic (Millwright) Foundation Program – INMECF

Trades Training

Program Outline

PROGRAM IMPLEMENTATION DATE: **March 2013**
OUTLINE EFFECTIVE DATE: **September 2021**
PROGRAM OUTLINE REVIEW DATE: **March 2026**

GENERAL PROGRAM 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.

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

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

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Delivery: This program can be delivered face to face or hybrid (online with face-to-face components).

Time for this program: 24 weeks

Structure of Instructional Hours:

Instructional Activity	Duration
Instructional Hours	28 hrs/wk
Directed Studies	2 hrs/wk
Hours per week	30 hrs/wk
Total Program Hours	720 hrs

Content Weighting	
Theory	60%
Practical Skills	40%
Total	100%

Program Outline Author or Contact:
Tim Haine, RSE Industrial Mechanic, RSE Machinist

Signature

APPROVAL SIGNATURES:

Department Head
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Department Head Signature

Dean of Trades and Technology
Dr. Jack Moes
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Dean Signature

EDCO

Valid from: September 2021 – March 2026

Education Council Approval Date

ADMISSION REQUIREMENTS:

Prerequisites:

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

Recommended 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 (FA):

Credit can be awarded for this course through FA ☑ Yes ☐ No

Learners may request formal recognition for flexible assessment at the College of the Rockies through one or more of the following processes: External Evaluation, Worksite Assessment, Demonstration, Standardized Test, Self-assessment, Interview, Products/Portfolio, Challenge Exam. Contact an Education Advisor for more information.

Prior Learning Credit: Student may apply for prior learning credit with the ITA (Industry Training Authority), please visit www.itabc.ca for more information.

Prior program Number: N/A

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

Please see the instructor's syllabus or check COTR's online text calculator http://go.cotr.bc.ca/tuition/tCalc.asp for a complete list of the currently required textbooks.

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

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

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

WORKPLACE HEALTH AND SAFETY COURSES:
Students must pass the following Workplace Health and Safety courses for program completion:

- Workplace Hazardous Material Information System *(WHMIS: PVHE-700)*
- Occupational First Aid – Level 1 *(OFA-1: PVHE-100) **

*Students must complete Occupational First Aid Level 1 within the program or have a current Occupational First Aid Level 1 certificate valid to the end of the program.

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%
	Total	**100%**	**100%**
In-School Theory/Practical Subject Competency Weighting		60%	40%
Final in-school percentage score Students must achieve a minimum 70% overall as the final in-school percentage score		**IN-SCHOOL %**	

This program has a final exam that is administered on the last day of the program. The final percentage score for determining credit from the College of the Rockies Industrial Mechanic Foundation program is calculated as follows:

In-school percentage score Combined theory and practical subject competency	80%
Final Exam	20%
Final percentage score	FINAL%

Pass Requirements:

In order to pass this program, students are required to

- achieve a minimum 70% overall final in-school percentage score
- pass all Workplace Health and Safety courses within the program

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SAFETY:

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.

STUDENTS MUST PROVIDE THEIR OWN:

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

EXAM POLICY:

Students must attend all required scheduled tests and exams that make up a final grade at the appointed time and place.

Individual instructors may accommodate for illness or personal crisis. Additional accommodation will not be made unless a written request is sent to and approved by the appropriate Department Head prior to the scheduled exam.

Any student who misses a scheduled test or exam without approval will be given a grade of "0" for the exam.

PROGRAM GRADE:

Program grades are assigned as follows:

COM	Completed to defined standard ≥ 70%
NCG	No Credit Granted < 70%

ACADEMIC POLICIES:

See www.cotr.bc.ca/policies for general college policies related to program activities, including grade appeals, cheating and plagiarism.

PROGRAM CHANGES:

Information contained in program outlines is correct at the time of publication. Content of the programs 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.