# ILM Publishing Report 2022: Industrial Mechanic (Millwright)

## Quality Assurance (QA) Maintenance Summary

The ILM office held a total of 23 QA Meetings in the 2021/22 academic year, which included over 90 attendees from 8 different institutions across Alberta. With support and feedback from these individuals, we were able to address and resolve over 700 maintenance comments across all ILM trades! We want to acknowledge each of the Programs and instructors that dedicated their time and effort to supporting this important maintenance work and express our gratitude for your support in our continuous improvement of ILM content for students and learners.

For Industrial Mechanic, there were 18 modules updated due to QA meeting maintenance, and a total of 25 maintenance comments were addressed. As part of this year’s ILM maintenance process, there were also a number of images and graphics within the ILMs reverted to a previous version. After significant consultation/feedback with Programs and stakeholders, the quality and accuracy of images and graphics from previous ILM versions was identified as being important for student learning and success. The *Maintenance Updates* column in the Module List section below indicates modules where this has occurred.

For more information on the ILM Comments and Maintenance process, please visit our website:

* ILM Maintenance: <https://ilm.nait.ca/ilm-maintenance>
* Comments: <https://ilm.nait.ca/comments>

QA Maintenance meeting dates for the 2022/23 academic year will be finalized and shared in September 2022.

## Content Development Projects

The Millwright Period 1 content development project is complete. The outcomes, learning objectives and related content in the newly updated Version 24 ILMs for first period are now aligned to the current Alberta course outline. Special thanks and kudos to Programs across Alberta for their collaboration and expertise in updating this content!

The updated module numbers and names are listed in the First Period table below. Please note:

* There are three new **160104: Machining and Machining Operations** modules, Part A, B and C, which cover all required course outline learning objectives from Manual Machines, Tools and Components and Machining Operations.
* The **160102d: Metallurgy** module, contains content that is required for Period 2. This module will still be available but has been renumbered to **160102dX: Metallurgy** to distinguish that it is no longer part of the new First Period content. It will be included in the *2020 Outline - Second Period Package* section of the ILM website.

As part of our commitment to continuous improvement, we encourage you to utilize the above ILM Comments page to provide feedback on the new first period modules.

The content development project to update ILMs in Millwright Periods 2, 3, and 4, as well as modules *in the Supplementary Math Package\*\** is already underway (note: the Metallurgy module will also be updated and renumbered to its appropriate Period 2 module number as part of this project). The tentative timeline for completion of this project is May 2023.

## Brand Refresh

The 2022 ILM publication includes a brand refresh for all (English) ILM files. This brand refresh only impacts the style/format of ILM products. It does not impact the content within the ILMs. Changes for each ILM product type include updates to the front and back covers of ILM files, ILM Graphics PowerPoint template, and both student and instructor Digital ILM templates.

## Module List

\*Maintenance updates include image/graphic updates, addressing of website comments, and changes identified at annual Quality Assurance meetings.

### First Period

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Module Number** | **Module Name** | **New Version[[1]](#footnote-2)** | **Maintenance Updates\*** | **Module Re-development** | **Rebrand Updates** |
| 160101a | Safety Legislation Regulations and Industry Policy in the Trades | 24.0 |  | ü | ü |
| 160101bA | Climbing, Lifting, Rigging, and Hoisting: Part A | 24.0 |  | ü | ü |
| 160101bB | Climbing Lifting Rigging and Hoisting: Part B | 24.0 |  | ü | ü |
| 160101c | Hazardous Materials and Fire Protection | 24.0 |  |  | ü |
| 160101d | Apprenticeship Training Program | 24.0 |  | ü | ü |
| 160101e | Communication | 24.0 |  | ü | ü |
| 160102aA | Hand Tools: Part A | 24.0 |  | ü | ü |
| 160102aB | Hand Tools: Part B | 24.0 |  | ü | ü |
| 160102bA | Power Tools: Part A | 24.0 |  | ü | ü |
| 160102bB | Power Tools: Part B | 24.0 |  | ü | ü |
| 160102cA | Fasteners: Part A | 24.0 |  | ü | ü |
| 160102cB | Fasteners: Part B | 24.0 |  | ü | ü |
| 160103aA | Measurement Tools: Part A | 24.0 |  | ü | ü |
| 160103aB | Measurement Tools: Part B | 24.0 |  | ü | ü |
| 160103bA | Technical Drawings: Part A | 24.0 |  | ü | ü |
| 160103bB | Technical Drawings: Part B | 24.0 |  | ü | ü |
| 160103c | Layouts | 24.0 |  | ü | ü |
| 160104A | Machining and Machining Operations: Part A | 24.0 |  | ü | ü |
| 160104B | Machining and Machining Operations: Part B | 24.0 |  | ü | ü |
| 160104C | Machining and Machining Operations: Part C | 24.0 |  | ü | ü |
| 160105a | Grouting, Levelling, and Anchoring | 24.0 |  | ü | ü |
| 160105b | Shaft Alignment | 24.0 |  | ü | ü |

### *Supplementary Math Package\*\**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Module Number** | **Module Name** | **New Version**1 | **Maintenance Updates\*** | **Rebrand Updates** |
| *160106a* | *Working with Numbers* | *24.0* | ✓ | ✓ |
| *160106b* | *Fractions and Decimals* | *24.0* |  | ✓ |
| *160106c* | *Algebra* | *24.0* | ✓ | ✓ |
| *160106d* | *Measurement and Conversions* | *24.0* | ✓ | ✓ |
| *160106e* | *Ratio and Proportion, Graphs and Tables* | *24.0* |  | ✓ |
| *160106f* | *Introduction to Triangles and Trigonometry* | *24.0* | ✓ | ✓ |
| *160106x* | *Math Formulas* | *24.0* |  | ✓ |

### Second Period

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Module Number** | **Module Name** | **New Version**1 | **Maintenance Updates\*** | **Rebrand Updates** |
| **160102dX** | Metallurgy (see note in Content Dev Projects above) | 24.0 |  | ✓ |
| 160201a | Gaskets and Piping | 24.0 | ✓ | ✓ |
| 160201bA | Anti-Friction Bearings - Part A | 24.0 |  | ü |
| 160201bB | Anti-Friction Bearings - Part B | 24.0 |  | ü |
| 160201c | Plain Bearings | 24.0 | ✓ | ü |
| 160201dA | Bearing Maintenance - Part A | 24.0 |  | ü |
| 160201dB | Bearing Maintenance - Part B | 24.0 | ü | ü |
| 160201e | Bearing Seals and Pillow Blocks | 24.0 | ✓ | ü |
| 160201fA | Lubrication - Part A | 24.0 | ✓ | ü |
| 160201fB | Lubrication - Part B | 24.0 | ✓ | ü |
| 160202a | Shafting Fits and Accessories | 24.0 | ü | ü |
| 160202b | Couplings | 24.0 |  | ü |
| 160202c | Clutches and Brakes | 24.0 | ✓ | ü |
| 160202dA | Belts - Part A | 24.0 |  | ü |
| 160202dB | Belts - Part B | 24.0 |  | ü |
| 160202eA | Chains - Part A | 24.0 | ✓ | ü |
| 160202eB | Chains - Part B | 24.0 | ✓ | ü |
| 160202f | Gearing Fundamentals | 24.0 | ü | ü |
| 160202g | Gearing Installation and Maintenance | 24.0 | ✓ | ü |
| 160202h | Variable-Speed Power Transmission Devices | 24.0 | ✓ | ü |
| 160203aA | Compressor Fundamentals - Part A | 24.0 | ✓ | ü |
| 160203aB | Compressor Fundamentals - Part B | 24.0 | ✓ | ü |
| 160203b | Compressor Valves | 24.0 | ✓ | ü |
| 160203cA | Compressor Cylinder Components - Part A | 24.0 | ✓ | ü |
| 160203cB | Compressor Cylinder Components - Part B | 24.0 | ✓ | ü |
| 160203d | Compressor Crosshead and Distance Piece Components | 24.0 | ✓ | ü |
| 160203e | Compressor Crankshaft and Frame Components | 24.0 | ü | ü |
| 160203f | Compressor Auxiliary Systems | 24.0 | ü | ü |
| 160203g | Compressor Overhaul and Start-Up Procedures | 24.0 | ü | ü |
| 160204a | Cross-Dial Alignment | 24.0 | ü | ü |
| 160204bA | Oxy-Fuel Equipment and Procedures - Part A | 24.0 | ü | ü |
| 160204bB | Oxy-Fuel Equipment and Procedures - Part B | 24.0 | ü | ü |
| 160204c | Electric Arc Welding | 24.0 | ü | ü |
| 160204d | Non-Destructive Testing | 24.0 | ü | ü |
| 160205a | Area, Volume and Capacities | 24.0 | ü | ü |
| 160205b | Transmission of Force and Motion | 24.0 | ü | ü |
| 160205c | Gas Laws and Coefficient of Linear Expansion | 24.0 | ü | ü |
| 160205d | Auxiliary Views and Assembly Drawings | 24.0 | ü | ü |
| 160205e | Single Line Drawings | 24.0 | ü | ü |
| 160205f | Basic Joints and Weld Types and Symbols | 24.0 | ü | ü |

### Third Period

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Module Number** | **Module Name** | **New Version**1 | **Maintenance Updates\*** | **Rebrand Updates** |
| 160301aA | Introduction to Hydraulics - Part A | 24.0 | ü | ✓ |
| 160301aB | Introduction to Hydraulics - Part B | 24.0 | ü | ü |
| 160301bA | Hydraulic Valves - Part A | 24.0 | ü | ü |
| 160301bB | Hydraulic Valves - Part B | 24.0 | ü | ü |
| 160301cA | Hydraulic Pumps and Actuators - Part A | 24.0 | ü | ü |
| 160301cB | Hydraulic Pumps and Actuators - Part B | 24.0 | ü | ü |
| 160301dA | Accessories, Fluids and Seals - Part A | 24.0 |  | ü |
| 160301dB | Accessories, Fluids and Seals - Part B | 24.0 | ü | ü |
| 160301e | Troubleshooting and Maintenance | 24.0 | ü | ü |
| 160301f | Tubing and Hoses | 24.0 | ü | ü |
| 160301g | Pneumatic Systems | 24.0 | ü | ü |
| 160301h | Fluid Power Calculations | 24.0 | ü | ü |
| 160302a | Screw Compressors and Lobe Blowers | 24.0 |  | ü |
| 160302b | Vane Compressors | 24.0 | ü | ü |
| 160302c | Liquid Ring Compressors | 24.0 | ü | ü |
| 160302d | Dynamic Compressors | 24.0 | ü | ü |
| 160302e | Fans | 24.0 |  | ü |
| 160302f | Gas and Air Dryers | 24.0 | ü | ü |
| 160302gA | Industrial Refrigeration - Part A | 24.0 | ü | ü |
| 160302gB | Industrial Refrigeration - Part B | 24.0 | ü | ü |
| 160302h | Heat Exchangers | 24.0 | ü | ü |
| 160302i | Insulation | 24.0 | ü | ü |
| 160303a | Laser Shaft Alignment | 24.0 | ü | ü |
| 160303bA | Levelling and Bore Alignment - Part A | 24.0 | ü | ü |
| 160303bB | Levelling and Bore Alignment - Part B | 24.0 | ü | ü |
| 160304a | Electrical Principles | 24.0 | ü | ü |
| 160304b | Practical Electricity | 24.0 |  | ü |
| 160304c | Industrial Controls and Troubleshooting | 24.0 |  | ü |
| 160304d | Programmable Logic Controls (PLCs) | 24.0 | ü | ü |
| 160304x | Pipe Strain | 24.0 | ü | ü |

### Fourth Period

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Module Number** | **Module Name** | **New Version**1 | **Maintenance Updates\*** | **Rebrand Updates** |
| 160401a | Stationary Engine Fundamentals | 24.0 | ü | ✓ |
| 160401b | Frame, Block and Cylinders | 24.0 | ü | ü |
| 160401c | Crankshaft Assembly and Pistons | 24.0 | ü | ü |
| 160401d | Cylinder Head and Valve Train | 24.0 | ü | ü |
| 160401e | Fuel Induction Ignition and Starting Systems | 24.0 | ü | ü |
| 160401f | Exhaust, Cooling, Lubrication and Ventilation | 24.0 | ü | ü |
| 160401g | Installation and Start-Up | 24.0 | ü | ü |
| 160401h | Troubleshooting and Maintenance | 24.0 | ü | ü |
| 160402aA | Steam Turbines - Part A | 24.0 |  | ü |
| 160402aB | Steam Turbines - Part B | 24.0 | ü | ü |
| 160402b | Gas Turbines | 24.0 | ü | ü |
| 160402c | Governors | 24.0 | ü | ü |
| 160403aA | Machinery Condition Monitoring and Analysis - Part A | 24.0 | ü | ü |
| 160403aB | Machinery Condition Monitoring and Analysis - Part B | 24.0 | ü | ü |
| 160403b | Balancing | 24.0 |  | ü |
| 160403c | Advanced Alignment | 24.0 |  | ü |
| 160403d | Maintenance Planning | 24.0 | ü | ü |
| 160403e | Analytical Troubleshooting | 24.0 | ü | ü |
| 160404a | Dynamic Pumps | 24.0 | ü | ü |
| 160404b | Dynamic Pump Operation | 24.0 | ü | ü |
| 160404c | Positive Displacement Pumps | 24.0 | ü | ü |
| 160404d | Mechanical Seals | 24.0 | ü | ü |
| 160404e | Compression Packing | 24.0 | ü | ü |
| 160404f | Valves | 24.0 | ü | ü |
| 160405a | Belt Conveyors | 24.0 | ü | ü |
| 160405b | Chain, Bucket and Screw Conveyors | 24.0 | ü | ü |
| 160405c | Roller and Pneumatic Conveyors | 24.0 | ü | ü |
| 160405d | Workplace Coaching Skills | 24.0 | ü | ü |
| 160405e | Alberta’s Industry Network | 24.0 | ü | ü |
| 160405f | Interprovincial Standards Red Seal Program | 24.0 | ü | ü |
| 160406c | Emerging Technologies | 24.0 |  | ü |

### Additional Modules

n/a

1. ILMs are updated on a module-by-module basis; not all modules in a Period are updated within the same cycle, and a combination of different version numbers within a Period is normal. **However, every module has received a new version number for the 2022 publishing cycle to reflect their rebranding.** The most current, published version of each module will always be the version that is posted on the [Order Modules](https://ilm.nait.ca/order-modules) page of the ILM website. [↑](#footnote-ref-2)