Industrial Mechanic (Millwright)
Level 1

Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A1 Trade Safety Awareness**

Level: One

Duration: 21 hours

Theory: 7 hours

Practical: 14 hours

Overview:

Safe working procedures and conditions, injury prevention, and the preservation of health are of primary importance to industry in Canada. These responsibilities are shared and require the joint efforts of government, employers, and employees. It is imperative that all parties become aware of circumstances that may lead to injury or harm. Safe learning experiences and environments can be created by controlling the variables and behaviours that may contribute to incidents or injury. It is generally recognized that safety-conscious attitudes and work practices contribute to a healthy, safe, and accident-free working environment. It is imperative to apply and be familiar with the Workplace Safety and Health Act and Regulations. As well, it's essential to determine workplace hazards and take measures to protect oneself, co-workers, the public, and the environment. Safety education is an integral part of Industrial Mechanic (Millwright) apprenticeship training both in school and on-the-job. Unit content is supplemented throughout technical training by trade-specific information about Industrial Mechanic (Millwright) safety hazards and precautions presented in the appropriate contexts of discussion and study.

***Note*: No percentage-weightings for test purposes are prescribed for this unit's objectives. Instead, a 'Pass/Fail" grade will be recorded for the unit in its entirety.**

Objectives and Content:	**Percent of Unit Mark (%)**
1. Identify safety and health requirements.	**N/A**
a. Overview of the Workplace Safety and Health Act • Rights and responsibilities of employees under the Act • Rights and responsibilities of employers under the Act • Rights and responsibilities of supervisors under the Act b. Fourteen (14) regulations c. Codes of practice d. Guidelines e. Right to refuse • Explanation of right to refuse process • Rights and responsibilities of employees • Rights and responsibilities of employers • Rights and responsibilities of supervisors under the Act	
2. Identify personal protective equipment (PPE) and procedures.	
a. Employer and employee responsibilities as related to PPE b. Standards: CSA, ANSI and guidelines c. Work protective clothing and danger if it fits poorly	

d. Importance of selecting and using appropriate gloves to suit task (e.g., re: chemicals, cold/hot items, slivers, etc.)
e. Standards and requirements re: selection/use of appropriate headwear
f. Eye protection – Comparison/contrast eyeglasses, industrial safety glasses and safety goggles
g. Foot protection - when required according to safety standards
h. Hearing protection
   - hazards of various noise levels (hearing protection must be worn)
   - laws
   - types of hearing protection
i. Respiratory protection – types; selection
j. Fall protection - Manitoba requirements Standards Guidelines
   - ANSI (U.S.A. standards), etc.
k. Ladders and scaffolding
l. Safety principles for working with or around industrial trucks site specific (forklifts, pallet trucks, etc.)

3. Identify electrical safety.
a. Effects of electric current on the human body
b. Three factors that affect the severity of an electric shock
c. The effects of electrical arcs/blasts on the human body and on equipment
d. Hazards/precautions re: working with energized equipment

4. Identify fire safety.
a. Types of fires
b. Types of fire-fighting equipment
c. Classifications of fire extinguishers (A, B and C)
d. Location of fire extinguishers and fire exits
e. Fire alarms and drills

5. Identify ergonomics.
a. Definition of ergonomics and conditions that may affect the body
   - Working postures
   - Repetition
   - Force
   - Lifting
   - Special hazards and precautions re: materials handling
   - Special hazards/precautions re: lifting, carrying, and setting down a load
   - Tools
   - Identify tool and safety equipment
   - Causes of hand tool accidents
   - Equipment

6. Describe hazard recognition and control.
a. Safe work practices
b. Basic risk assessment
c. Injury prevention and control measures
d. Identification of hazards involved in pneumatic tool use and explanation of how to guard against them

7. Describe the hazards of confined-space entry.
a. Identification of a confined space
b. Hazards of a confined space
   - Physical
   - Biological
c. Working in a confined space
d. Emergency response plan
e. Self-Contained Breathing Apparatus (SCBA)

8. **Identify First Aid / CPR.**
   a. Overview of First Aid regulation
   b. Obligations of employers regarding First Aid
      - Who is certified to provide First Aid
      - What to do while waiting for help
      - Location of, and access to, First Aid kit
   c. Define First Aid, and explain First Aid requirements and techniques
      - Scope and limits of First Aid intervention
      - Specific interventions (cuts, burns, abrasions, fractures, suffocation, shock, electrical shock, etc.)
      - Interface with other services and agencies (e.g., Workers Compensation claims)
   d. Describe basic CPR requirements and techniques
      - Obtaining certification
      - Scope and limits of CPR intervention (include varieties of CPR certification)

9. **Identify safety requirements as they apply to WHMIS.**
   a. WHMIS as a system
   b. Provincial Regulation under the Safety and Health Act
      - Each province has a WHMIS regulation
   c. Federal Hazardous Products Act
   d. WHMIS generic training:
      - WHMIS defined and the format used to convey information about hazardous materials in the workplace
      - Information found on supplier and workplace labeling using WHMIS
      - Hazardous materials in accordance with WHMIS
      - Compliance with government safety standards and regulations
   e. Description of WHMIS (include varieties of WHMIS Certification)
      - Typology of WHMIS labels, symbols, and classifications
      - Scope and use of Materials Safety Data Sheets (MSDS)

10. **Describe the identification and control of specified hazards.**
   a. Basic control measures (injury prevention)
   b. Safe work procedures
   c. Explanation on the importance of industrial housekeeping
   d. Employer responsibilities
   e. How and where to store materials
   f. Safety measures related to walkways, stairs and floor openings
   g. Traffic-pathway protection of workers and persons

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A2 Safety**

Level: One

Duration: 23 hours

Theory: 15 hours

Practical: 8 hours

Overview:

This unit is designed to introduce knowledge of safety equipment, their applications, maintenance and procedures for use. It is also designed to introduce knowledge of safe work practices. In addition, it is designed to introduce knowledge of regulatory requirements pertaining to safety.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Identify types of personal protective equipment (PPE) and clothing and describe their applications.	**12%**
2. Describe the procedures used to care and maintain PPE as per manufacturers' specifications.	**13%**
3. Identify hazards, assess risks and describe safe work practices. a. Personal b. Workspace • Electrical. • Isolation procedures - Tag out/lockout - Chemical - Potential sources of energy • Confined space • Fire • Heights c. Environment b. Manufacturing • Auto • Textile • Fertilizer	**50%**
4. Identify and describe workplace safety and health regulations. a. Federal	**25%**

- Material safety data sheets (MSDS)
- Workplace hazardous material information system (WHMIS)

b. Provincial/territorial
   - Worker’s rights and responsibilities

c. Municipal

d. Company safety policies

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A3 Learning About Work**

Level: One

Duration: 7 hours

Theory: 7 hours

Practical: 0 hours

Overview:

One sign that an apprentice has become competent in a task or technique is to be asked to share this knowledge. Jobsite skills-exchange has long been fundamental to trade-learning. Even trade veterans rely on peers to refine their knowledge and skill. The opportunity to benefit from this process, however, is shaped by complex factors that include jobsite 'politics' and industrial/construction deadlines. As adult trade-learners, apprentices at all levels of training must use their observational, listening and interpersonal skills to benefit from the journeyperson's knowledge and experience. This requires understanding the trade's dynamics, as well as the roles and responsibilities which order workplace/jobsite work-life.

This unit profiles the trade's structure and scope as determined by the Apprenticeship and Certification Act, regulations, Provincial Advisory Committees and the Red Seal Occupational Standard from which the training standards are derived (core tasks and skill requirements), as well as its job-ladders and long-term career options and social competencies. This includes information about major areas of working knowledge, activities and interactions at work, and expansive and restrictive workplaces, stressing their application to apprenticeship on-the-job training.

A sound grasp of the roles, workplace relationships, and possibilities introduced in this unit are part of 'learning to learn' in Manitoba's apprenticeship system. Senior apprentices are later offered information about learning to *teach* in this system – a central and time-honored foundation of Trades journeywork.

Objectives and Content: **Percent of Unit Mark (%)**

1. Describe structure and scope of the Industrial Mechanic (Millwright) trade. **60%**

a. The Apprenticeship and Certification Act
- Apprenticeship and Certification Board and Provincial Advisory Committees
- General and specific trade regulation
- Policies regarding attendance, evaluation procedures, conduct and progression requirements (Apprenticeship Manitoba, Training provider)

b. Uses of the Red Seal Occupational Standard
- Technical training in-school curriculum
- On-the-job record book of hours (Manitoba blue book)
- Examinations (level placement tests, final certification examinations)

c. Opportunities and future career options
- Generalists and specialists. The move toward specialization is well known to modern tradespeople. Some prefer to specialize and others want to do it all. Supervisory positions require a broad scope.

- Lead hands and other immediate supervisors. Apprentices need to know how to become a lead-hand as much as they need to know the benefits and pit-falls of leadership between management and shop floor workers.
- Geographic mobility. What does it mean to a construction/industrial worker to have to travel to find work? Are there more opportunities if they do? What are they? What are the draw-backs to being away from home for several weeks at a time?
- Job hierarchies and innovations. What trade specific special training opportunities are available in your trade? Is there travel involved? Is there an opportunity to move up the ladder on a work crew as opposed to staying in the shop?

2. Describe two levels of workplace competency. 30%

a. Job competencies related to workplace culture
   - Knowledge of workplace equipment and materials
   - Skills and techniques

b. Social competencies related to workplace culture
   - Frame of reference for evaluation workplace events
   - Language of work
   - Workplace belief systems
   - Rules and meanings
   - Multiculturalism and equity in the workplace

3. Describe accommodation for apprentices with disabilities. 10%

a. Technical training
   - Requirements
   - Roles and responsibilities
   - Services and information required by persons with disabilities

b. On-the-job
   - Requirements
   - Roles and responsibilities
   - Services and information required by persons with disabilities

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A4 Trade Overview**

Level: One

Duration: 7 hours

Theory: 7 hours

Practical: 0 hours

Overview:

This unit is designed to introduce knowledge of the Industrial Mechanic (Millwright) trade, its sectors and associated equipment.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Identify the sectors of the Industrial Mechanic (Millwright) trade and describe their associated equipment and machinery. a. Mining b. Forestry c. Processing • Food and beverage • Fish b. Manufacturing • Auto • Textile • Fertilizer	**45%**
2. Oil and gas.	**10%**
3. Power generation.	**20%**
4. Marine.	**5%**
5. Aerospace.	**20%**

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Industrial Mechanic (Millwright)

Unit: **A5 Communications**

Level: One

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

This unit of is designed to introduce knowledge of effective communication practices. It is also designed to introduce knowledge of trade related documentation and its use. In addition, it is designed to introduce knowledge of the procedures used to prepare and complete trade documentation.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Describe effective verbal and non-verbal communication. a. Other tradespersons b. Colleagues c. Supervisors d. Clients	**15%**
2. Identify types of trade related documentation and describe their applications and procedures for use. a. Work orders b. Purchase orders c. Parts lists d. Manufacturers' specifications e. Codes and standards f. Technical manuals	**40%**
3. Perform the procedures used to prepare and complete trade related documentation. a. Work orders b. Safety reports c. Maintenance records d. Accident/incident investigation reports • Equipment • Production loss	**45%**

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A6 Drawings and Sketching**

Level: One

Duration: 29 hours

Theory: 10 hours

Practical: 19 hours

Overview:

This unit is designed to introduce knowledge of drawings, their use and interpretation. It is also designed to introduce knowledge of basic sketching techniques.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Define terminology associated with drawings and sketches.	**10%**
2. Describe metric and imperial systems of measurement and the procedures used to perform conversions.	**20%**
3. Identify the types of drawings and describe their applications. a. Civil/site b. Architectural c. Mechanical d. Structural e. Electrical f. Shop drawings g. Sketches	**10%**
4. Identify drawings, projections and views and describe their applications. a. Orthographic b. Oblique c. Isometric d. Section e. Auxiliary	**10%**
5. Interpret and extract information from drawings. a. Lines b. Legend c. Symbols and abbreviations • Welding • Machining	**25%**

d. Title block
e. Notes and specifications
f. Tolerances/allowances
g. Bill of materials

6.	**Describe the use of scales**	**10%**
7.	**Identify the styles of dimensioning on drawings and describe their applications.**	**5%**
8.	**Demonstrate basic sketching techniques.**	**5%**
9.	**Describe the functions of a CAD system.**	**5%**

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A7 Tools and Equipment**

Level: One

Duration: 10 hours

Theory: 10 hours

Practical: 0 hours

Overview:

This unit is designed to introduce knowledge of tools and equipment, their applications, maintenance and procedures for use.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Identify hazards and describe safe work practices pertaining to the use of tools and equipment.	**10%**
2. Identify types of hand tools and describe their applications and procedures for use. a. Cutting b. Non-cutting	**10%**
3. Identify types of portable power tools and describe their applications and procedures for use. a. Electric/battery b. Pneumatic c. Hydraulic d. Fuel	**20%**
4. Identify types of powder actuated tool and describe their applications.	**5%**
5. Identify types of shop machines and describe their applications.	**20%**
6. Identify types of measuring and layout tools and equipment and describe their applications and procedures for use.	**20%**
7. Identify types of welding and cutting equipment and describe their applications.	**15%**

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A8 Measuring and Layout**

Level: One

Duration: 38 hours

Theory: 12 hours

Practical: 26 hours

Overview:

This unit is designed to introduce knowledge of precision measuring and layout tools, their applications and procedures for use. It is also designed to introduce knowledge of the procedures used to layout equipment and components.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Define terminology associated with measuring and layout.	**10%**
2. Identify types of precision measuring tools and describe their applications and procedures for use. a. Micrometers b. Calipers c. Dial indicators d. Protractors e. Height gauges f. Feeler gauges g. Plug, ring and snap gauges h. Gauge blocks	**25%**
3. Identify types of layout tools and describe their applications and procedures for use. a. Straight edges b. Solid squares c. Combination sets d. Surface plate e. Scribers f. Hermaphrodite calipers g. Dividers h. Trammels i. Prick and centre punches j. Angle plates k. Parallels	**30%**

l. V-blocks
m. Surface gauges
n. Layout dye

4. Perform the procedures used to lay out equipment and components. 30%

5. Perform the procedures used to inspect, maintain, calibrate, and store precision measuring and layout tools. 5%

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Apprenticeship Manitoba

Industrial Mechanic (Millwright

Unit: **A9 Fastening and Retaining Devices**

Level: One

Duration: 10 hours

Theory: 5 hours

Practical: 5 hours

Overview:

This unit is designed to introduce knowledge of fastening and retaining devices and their applications. It is also designed to introduce knowledge of the procedures to install and remove fastening and retaining devices.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Define terminology associated with fastening and retaining devices.	**5%**
2. Identify hazards and describe safe work practices pertaining to installing and removing fastening and retaining devices.	**5%**
3. Identify types of tools and equipment used to install, remove and repair fastening and retaining devices and describe their applications and procedures for use.	**10%**
4. Identify types fastening devices and materials and describe their characteristics and applications. a. Mechanical b. Adhesives	**10%**
5. Perform the procedures used to install, remove, and repair fastening devices.	**15%**
6. Describe the purpose and procedures associated with torquing fastening devices.	**15%**
7. Identify types of retaining devices and describe their characteristics and applications.	**10%**
8. Perform the procedures used to install and remove retaining devices.	**15%**
9. Identify thread classifications and describe the procedures used for thread identification.	**15%**

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A10 Metallurgy**

Level: One

Duration: 10 hours

Theory: 4 hours

Practical: 6 hours

Overview:

This unit is designed to introduce knowledge of metals and their characteristics. It is also designed to introduce knowledge of metallurgic principles and material testing procedures. In addition, it is designed to introduce knowledge of structural shapes and their applications.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Define terminology associated with metallurgy.	**10%**
2. Describe the properties of metals.	**10%**
3. Describe the identification systems for metals.	**5%**
4. Perform the processes used in the heat treatment of metals. a. Stress relieving b. Hardening c. Annealing d. Tempering e. Normalizing f. Quenching	**15%**
5. Identify the methods and processes used in the heat treatment of metals.	**10%**
6. Describe forging and casting processes.	**5%**
7. Describe the problems that can occur when working metals. a. Stress b. Contraction c. Expansion d. Distortion e. Work hardening f. Galvanic action	**10%**

8. Describe the procedures used to prevent and correct problems that occur when working with metals. **10%**

9. Perform common metal testing techniques and their associated procedures. **15%**

a. Rockwell
b. Brinnell
c. Spark
d. Chisel
e. File

10. Identify structural shapes and describe their characteristics and applications. **10%**

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A11 Welding I**

Level: One

Duration: 27 hours

Theory: 7 hours

Practical: 20 hours

Overview:

This unit is designed to introduce knowledge oxy-fuel and accessories. It is also designed to introduce knowledge of the procedures used to cut, heat, weld, solder and braze with oxy-fuel equipment.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Define terminology associated with oxy-fuel cutting, heating and welding.	**10%**
2. Identify hazards and describe safe work practices pertaining to oxy-fuel cutting, heating, welding, brazing and soldering. a. Personal b. Shop/facility c. Equipment d. Ventilation e. Storage	**10%**
3. Identify and interpret codes and regulations pertaining to oxy-fuel cutting, heating, welding, brazing and soldering.	**10%**
4. Identify oxy-fuel cutting, heating, welding, brazing and soldering equipment and accessories describe their applications.	**10%**
5. Perform the procedures used to set-up, adjust and shut-down oxy-fuel equipment.	**20%**
6. Perform the procedures used to inspect and maintain oxy-fuel equipment.	**20%**
7. Perform the procedures used to cut, heat, weld, braze and solder materials using oxy-fuel equipment.	**20%**

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A12 Grinders**

Level: One

Duration: 17 hours

Theory: 7 hours

Practical: 10 hours

Overview:

This unit is designed to introduce knowledge of grinders and their applications. It is also designed to introduce knowledge of the procedures used to perform grinding operations.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Define terminology associated with grinders.	**5%**
2. Identify hazards and describe safe work practices pertaining to grinding operations.	**5%**
3. Identify types of grinders and describe their applications.	**10%**
4. Perform applications and maintenance with grinder components, accessories and attachments.	**15%**
5. Perform the procedures used to select grinding wheels for specific operations.	**15%**
6. Perform the procedures used to change, ring test, mount and dress grinding wheels.	**15%**
7. Perform the procedures used to operate grinders.	**15%**
8. Perform the techniques used to sharpen or dress tools using grinders. a. Chisels b. Lathe tool bits c. Twist drills d. Punches	**20%**

Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A13 Power Metal Saws**

Level: One

Duration: 10 hours

Theory: 5 hours

Practical: 5 hours

Overview:

This unit is designed to introduce knowledge of power metal saws and their maintenance and applications. It is also designed to introduce knowledge of the procedures used to perform cutting operations using power metal saws.

Objectives and Content:		**Percent of Unit Mark (%)**
1.	**Define terminology associated with power metal saws.**	**10%**
2.	**Identify hazards and describe safe work practices pertaining to power metal saws.**	**10%**
3.	**Identify types of power metal saws and describe their maintenance and applications.**	**10%**
4.	**Identify power metal saw components, accessories and attachments and describe their applications.**	**10%**
5.	**Identify cutting fluids and coolants used during cutting operations.**	**10%**
6.	**Perform the procedures used to perform and troubleshoot cutting operations using power metal saws.**	**50%**

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A14 Drilling Machines**

Level: One

Duration: 16 hours

Theory: 6 hours

Practical: 10 hours

Overview:

This unit is designed to introduce knowledge of drilling machines and their accessories. It is also designed to introduce knowledge of drilling machine maintenance and applications. In addition, it is designed to introduce knowledge of the procedures and calculations used to perform drilling operations.

Objectives and Content:	**Percent of Unit Mark (%)**
1. Define terminology associated with drilling machines.	**5%**
2. Identify hazards and describe safe work practices pertaining to drilling operations.	**5%**
3. Identify types of drilling machines, their components and accessories and describe their applications, maintenance and procedures for use.	**10%**
4. Identify types of drill bits and describe their characteristics and applications.	**10%**
5. Identify cutting fluids and coolants used during drilling operations.	**5%**
6. Perform the procedures used to set up, operate and troubleshoot drilling machines. a. Drilling b. Reaming c. Counterboring d. Countersinking e. Tapping f. Spot facing	**55%**
7. Perform the procedures used to sharpen drill bits.	**5%**
8. Determine and calculate speeds and feeds for drilling operations.	**5%**

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A15 Hoisting, Lifting and Rigging**

Level: One

Duration: 27 hours

Theory: 7 hours

Practical: 20 hours

Overview:

This unit is designed to introduce knowledge of hoisting, lifting and rigging equipment, their applications, limitations and procedures for use. It is also designed to introduce knowledge of the procedures used to perform hoisting and lifting operations. In addition, it is designed to introduce knowledge of calculations required when performing structural shapes and their applications hoisting and lifting operations.

Objectives and Content:		**Percent of Unit Mark (%)**
1.	**Define terminology associated with hoisting and lifting operations.**	**5%**
2.	**Identify hazards and describe safe work practices pertaining to hoisting, lifting and rigging.**	**5%**
3	**Identify hazards and describe safe work practices pertaining to mobile and overhead cranes.**	**5%**
4.	**Identify codes and regulations pertaining to hoisting, lifting and rigging.**	**5%**
5.	**Identify types of rigging equipment and accessories and describe their applications and procedures for use.**	**5%**
6.	**Identify types of hoisting and lifting equipment and accessories and describe their applications and procedures for use.**	**5%**
7.	**Perform the procedures used to inspect, maintain and store rigging, hoisting and lifting equipment.**	**10%**
8.	**Perform applications and the procedures used to tie various types of knots, hitches, and bends.**	**5%**
9.	**Describe the procedures used to rig material/equipment for lifting.**	**15%**
10.	**Describe the procedures used to ensure the work area is safe for lifting.** a. Supervision of lift b. Securing work area	**5%**

c. Communication

11. Identify and describe procedures used to communicate during hoisting, lifting and rigging operations. **5%**

a. Hand signals
b. Electronic communications
c. Audible/visual

12. Explain sling angle when preparing for hoisting and lifting operations. **5%**

13. Describe the procedures used to determine the weight and weight distribution of loads. **5%**

a. Reference load charts
b. Determine types of loads
c. Engineered lifts

14. Identify the factors to consider when rigging equipment. **5%**

a. Load characteristics
b. Environment

15. Perform the procedures used to perform a lift. **15%**

a. Load determination
b. Communication methods
c. Pre-lift checks
d. Placement of load
e. Post-lift inspection

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Apprenticeship Manitoba

Industrial Mechanic (Millwright)

Unit: **A16 Access Equipment**

Level: One

Duration: 14 hours

Theory: 7 hours

Practical: 7 hours

Overview:

This unit is designed to introduce knowledge of ladders, scaffolding and hydraulic lifts, their applications, limitations and procedures for use.

Objectives and Content:		**Percent of Unit Mark (%)**
1.	**Define terminology associated with ladders, scaffolding and hydraulic lifts.**	**10%**
2.	**Identify hazards and describe safe work practices pertaining ladders, scaffolding and hydraulic lifts.**	**10%**
3.	**Identify codes and regulations pertaining to ladders, scaffolding and hydraulic lifts.**	**10%**
4.	**Identify types of ladders, scaffolding and hydraulic lifts and describe their characteristics and applications.**	**15%**
5.	**Perform inspection of types of fall arrest equipment and describe their characteristics and applications.**	**20%**
6.	**Perform the procedures used to erect and dismantle ladders and scaffolding (up to two levels).**	**20%**
7.	**Perform the procedures used to inspect and maintain ladders, scaffolding and hydraulic lifts.**	**15%**

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