

COURSE MWA3401: HAND TOOLS

- Level:** First Period Apprenticeship
- Prerequisite:** MWA3900: Apprenticeship Safety
- Description:** Students develop an understanding of how to safely operate and maintain hand tools used in industrial mechanic (millwright) shops.
- Parameters:** Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journey person certification in the industrial mechanic (millwright) trade.
- Resources:** Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca.
- Outcomes:** The student will:

1. use hand tools

- 1.1 identify types of hand tools
- 1.2 describe hand tools
- 1.3 describe jacks, pullers, and presses
- 1.4 describe abrasive tools
- 1.5 describe cutting tools
- 1.6 describe the function of tools
- 1.7 maintain hand tools
- 1.8 use hand tools

2. demonstrate basic competencies

- 2.1 demonstrate fundamental skills to:
 - 2.1.1 communicate
 - 2.1.2 manage information
 - 2.1.3 use numbers
 - 2.1.4 think and solve problems
- 2.2 demonstrate personal management skills to:
 - 2.2.1 demonstrate positive attitudes and behaviours
 - 2.2.2 be responsible
 - 2.2.3 be adaptable
 - 2.2.4 learn continuously
 - 2.2.5 work safely
- 2.3 demonstrate teamwork skills to:
 - 2.3.1 work with others
 - 2.3.2 participate in projects and tasks

3. create a transitional strategy to accommodate personal changes and build personal values

- 3.1 identify short-term and long-term goals
- 3.2 identify steps to achieve goals

COURSE MWA3405: MEASUREMENT

Level:	First Period Apprenticeship
Prerequisite:	MWA3900: Apprenticeship Safety
Description:	Students understand the terminology associated with limits and fits and use measuring tools to assemble components.
Parameters:	Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journey person certification in the industrial mechanic (millwright) trade.
Resources:	Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca .

Outcomes: The student will:

- 1. describe measuring fundamentals for the industrial mechanic (millwright) trade**
 - 1.1 describe measurement units, standards, and systems
 - 1.2 describe the effect of temperature change on the dimensions of objects being measured, with regard to various materials
- 2. demonstrate measuring procedures used in the industrial mechanic (millwright) trade**
 - 2.1 describe basic measuring tools and their uses
 - 2.2 describe precision measuring tools and their uses
 - 2.3 describe transfer measurement
 - 2.4 describe measurement using dial indicators
 - 2.5 use measurement tools
- 3. demonstrate basic competencies**
 - 3.1 demonstrate fundamental skills to:
 - 3.1.1 communicate
 - 3.1.2 manage information
 - 3.1.3 use numbers
 - 3.1.4 think and solve problems
 - 3.2 demonstrate personal management skills to:
 - 3.2.1 demonstrate positive attitudes and behaviours
 - 3.2.2 be responsible
 - 3.2.3 be adaptable
 - 3.2.4 learn continuously
 - 3.2.5 work safely
 - 3.3 demonstrate teamwork skills to:
 - 3.3.1 work with others
 - 3.3.2 participate in projects and tasks
- 4. create a transitional strategy to accommodate personal changes and build personal values**
 - 4.1 identify short-term and long-term goals
 - 4.2 identify steps to achieve goals

COURSE MWA3406: POWER TOOLS

- Level:** First Period Apprenticeship
- Prerequisite:** MWA3900: Apprenticeship Safety
- Description:** Students develop an understanding of how to safely operate and maintain power tools used in industrial mechanic (millwright) shops.
- Parameters:** Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journey person certification in the industrial mechanic (millwright) trade.
- Resources:** Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca.
- Outcomes:** The student will:

1. use power tools

- 1.1 identify types of power tools
- 1.2 describe the functions of electrical tools
- 1.3 describe the functions of hydraulic tools
- 1.4 describe the functions of pneumatic tools
- 1.5 describe the functions of explosive actuated tools
- 1.6 use power tools

2. demonstrate basic competencies

- 2.1 demonstrate fundamental skills to:
 - 2.1.1 communicate
 - 2.1.2 manage information
 - 2.1.3 use numbers
 - 2.1.4 think and solve problems
- 2.2 demonstrate personal management skills to:
 - 2.2.1 demonstrate positive attitudes and behaviours
 - 2.2.2 be responsible
 - 2.2.3 be adaptable
 - 2.2.4 learn continuously
 - 2.2.5 work safely
- 2.3 demonstrate teamwork skills to:
 - 2.3.1 work with others
 - 2.3.2 participate in projects and tasks

3. create a transitional strategy to accommodate personal changes and build personal values

- 3.1 identify short-term and long-term goals
- 3.2 identify steps to achieve goals

COURSE MWA3411: TECHNICAL DRAWINGS

- Level:** First Period Apprenticeship
- Prerequisite:** MWA3900: Apprenticeship Safety
- Description:** Students develop an understanding of how to interpret and use technical drawings in the industrial mechanic (millwright) trade.
- Parameters:** Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journey person certification in the industrial mechanic (millwright) trade.
- Resources:** Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca.
- Outcomes:** The student will:

1. interpret technical drawings

- 1.1 describe technical drawings
- 1.2 describe technical drawing layouts and conventions
- 1.3 describe technical drawing symbols
- 1.4 perform calculations using technical drawings
- 1.5 interpret technical drawings

2. demonstrate basic competencies

- 2.1 demonstrate fundamental skills to:
 - 2.1.1 communicate
 - 2.1.2 manage information
 - 2.1.3 use numbers
 - 2.1.4 think and solve problems
- 2.2 demonstrate personal management skills to:
 - 2.2.1 demonstrate positive attitudes and behaviours
 - 2.2.2 be responsible
 - 2.2.3 be adaptable
 - 2.2.4 learn continuously
 - 2.2.5 work safely
- 2.3 demonstrate teamwork skills to:
 - 2.3.1 work with others
 - 2.3.2 participate in projects and tasks

3. create a transitional strategy to accommodate personal changes and build personal values

- 3.1 identify short-term and long-term goals
- 3.2 identify steps to achieve goals

COURSE MWA3416: LAYOUTS

Level:	First Period Apprenticeship
Prerequisite:	MWA3405: Measurement
Description:	Students develop knowledge of the raw materials used in the industrial mechanic (millwright) trade and discover how to use precision and non-precision layout tools reliably for layouts.
Parameters:	Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journey person certification in the industrial mechanic (millwright) trade.
Resources:	Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca .

Outcomes: The student will:

- 1. perform layouts**
 - 1.1 describe layout tools and accessories
 - 1.2 describe layout procedures
 - 1.3 perform layouts
- 2. demonstrate basic competencies**
 - 2.1 demonstrate fundamental skills to:
 - 2.1.1 communicate
 - 2.1.2 manage information
 - 2.1.3 use numbers
 - 2.1.4 think and solve problems
 - 2.2 demonstrate personal management skills to:
 - 2.2.1 demonstrate positive attitudes and behaviours
 - 2.2.2 be responsible
 - 2.2.3 be adaptable
 - 2.2.4 learn continuously
 - 2.2.5 work safely
 - 2.3 demonstrate teamwork skills to:
 - 2.3.1 work with others
 - 2.3.2 participate in projects and tasks
- 3. create a transitional strategy to accommodate personal changes and build personal values**
 - 3.1 identify short-term and long-term goals
 - 3.2 identify steps to achieve goals

COURSE MWA3420: FASTENERS

- Level:** First Period Apprenticeship
- Prerequisite:** MWA3900: Apprenticeship Safety
- Description:** Students learn the standard of performance and recommended methods of installing and removing many different fasteners and locking devices. Students perform trade calculations related to fasteners. Students demonstrate the use of fasteners.
- Parameters:** Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journey person certification in the industrial mechanic (millwright) trade.
- Resources:** Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca.
- Outcomes:** The student will:

- 1. describe threaded fasteners and their functions**
 - 1.1 describe personal safety equipment required when working with fasteners and anchors
 - 1.2 describe threaded fasteners and locking devices and their applications
 - 1.3 describe metric and imperial thread classes and fits
 - 1.4 describe types and purposes of thread and thread forms
 - 1.5 describe thread measuring tools, methods, and procedures
- 2. describe non-threaded fasteners and their functions**
 - 2.1 describe non-threaded fasteners and locking devices and their applications
- 3. describe the installation and removal of fasteners**
 - 3.1 describe the theory and methods of tensioning
 - 3.2 describe the removal of broken fasteners
 - 3.3 describe thread reconditioning
- 4. perform trade calculations related to fasteners**
- 5. use fasteners**
 - 5.1 demonstrate the use of threaded fasteners and locking devices
 - 5.2 demonstrate the use of non-threaded fasteners and locking devices
- 6. demonstrate basic competencies**
 - 6.1 demonstrate fundamental skills to:
 - 6.1.1 communicate
 - 6.1.2 manage information
 - 6.1.3 use numbers
 - 6.1.4 think and solve problems
 - 6.2 demonstrate personal management skills to:
 - 6.2.1 demonstrate positive attitudes and behaviours
 - 6.2.2 be responsible
 - 6.2.3 be adaptable
 - 6.2.4 learn continuously
 - 6.2.5 work safely

- 6.3 demonstrate teamwork skills to:
 - 6.3.1 work with others
 - 6.3.2 participate in projects and tasks
- 7. create a transitional strategy to accommodate personal changes and build personal values**
 - 7.1 identify short-term and long-term goals
 - 7.2 identify steps to achieve goals

COURSE MWA3421: MANUAL MACHINES 1

- Level:** First Period Apprenticeship
- Prerequisite:** MWA3900: Apprenticeship Safety
- Description:** Students describe and operate manual machines and tools.
- Parameters:** Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journeyperson certification in the industrial mechanic (millwright) trade.
- Resources:** Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca.

Outcomes: The student will:

- 1. use manual machines**
 - 1.1 identify types of manual machines
 - 1.2 describe the construction of manual machines
 - 1.3 describe the operation of manual machines
 - 1.4 describe applications of manual machines
 - 1.5 describe machine tools
 - 1.6 describe the functions of machine tools
 - 1.7 describe applications of machine tools
 - 1.8 describe work and tool holding devices
 - 1.9 describe the functions of work and tool holding devices
 - 1.10 describe applications of work and tool holding devices
- 2. demonstrate basic competencies**
 - 2.1 demonstrate fundamental skills to:
 - 2.1.1 communicate
 - 2.1.2 manage information
 - 2.1.3 use numbers
 - 2.1.4 think and solve problems
 - 2.2 demonstrate personal management skills to:
 - 2.2.1 demonstrate positive attitudes and behaviours
 - 2.2.2 be responsible
 - 2.2.3 be adaptable
 - 2.2.4 learn continuously
 - 2.2.5 work safely
 - 2.3 demonstrate teamwork skills to:
 - 2.3.1 work with others
 - 2.3.2 participate in projects and tasks
- 3. create a transitional strategy to accommodate personal changes and build personal values**
 - 3.1 identify short-term and long-term goals
 - 3.2 identify steps to achieve goals

COURSE MWA3426: MANUAL MACHINES 2

- Level:** First Period Apprenticeship
- Prerequisite:** MWA3421: Manual Machines 1
- Description:** Students maintain and use manual machines.
- Parameters:** Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journeyperson certification in the industrial mechanic (millwright) trade.
- Resources:** Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca.

Outcomes: The student will:

- 1. use manual machines**
 - 1.1 perform maintenance on manual machines
 - 1.2 use manual machines
- 2. demonstrate basic competencies**
 - 2.1 demonstrate fundamental skills to:
 - 2.1.1 communicate
 - 2.1.2 manage information
 - 2.1.3 use numbers
 - 2.1.4 think and solve problems
 - 2.2 demonstrate personal management skills to:
 - 2.2.1 demonstrate positive attitudes and behaviours
 - 2.2.2 be responsible
 - 2.2.3 be adaptable
 - 2.2.4 learn continuously
 - 2.2.5 work safely
 - 2.3 demonstrate teamwork skills to:
 - 2.3.1 work with others
 - 2.3.2 participate in projects and tasks
- 3. create a transitional strategy to accommodate personal changes and build personal values**
 - 3.1 identify short-term and long-term goals
 - 3.2 identify steps to achieve goals

COURSE MWA3431: MACHINING OPERATIONS 1

- Level:** First Period Apprenticeship
- Prerequisite:** MWA3426: Manual Machines 2
- Description:** Students describe and explain machining operations.
- Parameters:** Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journeyperson certification in the industrial mechanic (millwright) trade.
- Resources:** Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca.

Outcomes: The student will:

- 1. perform manual machining operations**
 - 1.1 describe machine tools
 - 1.2 describe cutting fluid applications
 - 1.3 explain the operation of manual machines
 - 1.4 explain speeds and feeds applications
- 2. demonstrate basic competencies**
 - 2.1 demonstrate fundamental skills to:
 - 2.1.1 communicate
 - 2.1.2 manage information
 - 2.1.3 use numbers
 - 2.1.4 think and solve problems
 - 2.2 demonstrate personal management skills to:
 - 2.2.1 demonstrate positive attitudes and behaviours
 - 2.2.2 be responsible
 - 2.2.3 be adaptable
 - 2.2.4 learn continuously
 - 2.2.5 work safely
 - 2.3 demonstrate teamwork skills to:
 - 2.3.1 work with others
 - 2.3.2 participate in projects and tasks
- 3. create a transitional strategy to accommodate personal changes and build personal values**
 - 3.1 identify short-term and long-term goals
 - 3.2 identify steps to achieve goals

COURSE MWA3436: MACHINING OPERATIONS 2

- Level:** First Period Apprenticeship
- Prerequisite:** MWA3431: Machining Operations 1
- Description:** Students demonstrate calculations for machining operations.
- Parameters:** Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journeyperson certification in the industrial mechanic (millwright) trade.
- Resources:** Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca.

Outcomes: The student will:

- 1. perform manual machining operations**
 - 1.1 perform calculations related to the operation of manual machines
- 2. demonstrate basic competencies**
 - 2.1 demonstrate fundamental skills to:
 - 2.1.1 communicate
 - 2.1.2 manage information
 - 2.1.3 use numbers
 - 2.1.4 think and solve problems
 - 2.2 demonstrate personal management skills to:
 - 2.2.1 demonstrate positive attitudes and behaviours
 - 2.2.2 be responsible
 - 2.2.3 be adaptable
 - 2.2.4 learn continuously
 - 2.2.5 work safely
 - 2.3 demonstrate teamwork skills to:
 - 2.3.1 work with others
 - 2.3.2 participate in projects and tasks
- 3. create a transitional strategy to accommodate personal changes and build personal values**
 - 3.1 identify short-term and long-term goals
 - 3.2 identify steps to achieve goals

COURSE MWA3441: MACHINING OPERATIONS 3

- Level:** First Period Apprenticeship
- Prerequisite:** MWA3431: Machining Operations 1
- Description:** Students demonstrate how to maintain machine tools.
- Parameters:** Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journeyperson certification in the industrial mechanic (millwright) trade.
- Resources:** Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca.

Outcomes: The student will:

- 1. perform manual machining operations**
 - 1.1 perform maintenance on machine tools
- 2. demonstrate basic competencies**
 - 2.1 demonstrate fundamental skills to:
 - 2.1.1 communicate
 - 2.1.2 manage information
 - 2.1.3 use numbers
 - 2.1.4 think and solve problems
 - 2.2 demonstrate personal management skills to:
 - 2.2.1 demonstrate positive attitudes and behaviours
 - 2.2.2 be responsible
 - 2.2.3 be adaptable
 - 2.2.4 learn continuously
 - 2.2.5 work safely
 - 2.3 demonstrate teamwork skills to:
 - 2.3.1 work with others
 - 2.3.2 participate in projects and tasks
- 3. create a transitional strategy to accommodate personal changes and build personal values**
 - 3.1 identify short-term and long-term goals
 - 3.2 identify steps to achieve goals

COURSE MWA3446: MACHINING OPERATIONS 4

- Level:** First Period Apprenticeship
- Prerequisite:** MWA3431: Machining Operations 1
- Description:** Students demonstrate how to perform machining operations.
- Parameters:** Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journeyperson certification in the industrial mechanic (millwright) trade.
- Resources:** Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca.

Outcomes: The student will:

- 1. perform manual machining operations**
 - 1.1 perform machine operations
- 2. demonstrate basic competencies**
 - 2.1 demonstrate fundamental skills to:
 - 2.1.1 communicate
 - 2.1.2 manage information
 - 2.1.3 use numbers
 - 2.1.4 think and solve problems
 - 2.2 demonstrate personal management skills to:
 - 2.2.1 demonstrate positive attitudes and behaviours
 - 2.2.2 be responsible
 - 2.2.3 be adaptable
 - 2.2.4 learn continuously
 - 2.2.5 work safely
 - 2.3 demonstrate teamwork skills to:
 - 2.3.1 work with others
 - 2.3.2 participate in projects and tasks
- 3. create a transitional strategy to accommodate personal changes and build personal values**
 - 3.1 identify short-term and long-term goals
 - 3.2 identify steps to achieve goals

COURSE MWA3451: MACHINE INSTALLATION

Level:	First Period Apprenticeship
Prerequisite:	MWA3900: Apprenticeship Safety
Description:	Students describe how to install machinery and perform rim and face shaft alignment.
Parameters:	Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journey person certification in the industrial mechanic (millwright) trade.
Resources:	Please refer to the books and materials listed at Tradesecrets: Trades & Occupations List. If Individual Learning Modules (ILMs) are available for this trade, they can be accessed on LearnAlberta.ca .
Outcomes:	The student will:

1. install machinery

- 1.1 identify levelling equipment and tools
- 1.2 describe applications for levelling and grouting
- 1.3 describe procedures for levelling and grouting
- 1.4 describe types of anchors
- 1.5 describe methods of installing machinery

2. perform rim and face shaft alignment

- 2.1 describe the purpose of shaft alignment
- 2.2 describe procedures for shaft pre-alignment
- 2.3 describe rough alignment
- 2.4 perform rim and face calculations
- 2.5 perform rim and face shaft alignment

3. demonstrate basic competencies

- 3.1 demonstrate fundamental skills to:
 - 3.1.1 communicate
 - 3.1.2 manage information
 - 3.1.3 use numbers
 - 3.1.4 think and solve problems
- 3.2 demonstrate personal management skills to:
 - 3.2.1 demonstrate positive attitudes and behaviours
 - 3.2.2 be responsible
 - 3.2.3 be adaptable
 - 3.2.4 learn continuously
 - 3.2.5 work safely
- 3.3 demonstrate teamwork skills to:
 - 3.3.1 work with others
 - 3.3.2 participate in projects and tasks

4. create a transitional strategy to accommodate personal changes and build personal values

- 4.1 identify short-term and long-term goals
- 4.2 identify steps to achieve goals

COURSE MWA3460: MWA PRACTICUM A

Level: First Period Apprenticeship

Prerequisite: None

Description: Students, on the work site, continue to develop and refine those competencies developed in related Career and Technology Studies (CTS) occupational areas, previous practicums, and other experiences.

Parameters: This course should be accessed only by students continuing to work toward attaining a recognized credential offered by an agency external to the school. Practicum courses extend the competencies developed in related CTS occupational areas. The practicum courses may not be delivered as stand-alone courses and may not be combined with core courses. This course may not be used in conjunction with Registered Apprenticeship Program courses. This practicum course may be delivered on- or off-campus. Instruction must be delivered by a qualified teacher with journey person certification or an experienced professional with journey person certification, who is under the supervision of the qualified teacher; both must be authorized to supervise trainees for the external credential.

Outcomes: The student will:

1. perform assigned tasks and responsibilities efficiently and effectively, as required by the agency granting credentials

- 1.1 identify regulations and regulatory bodies related to the credential
- 1.2 describe personal roles and responsibilities, including:
 - 1.2.1 key responsibilities
 - 1.2.2 support functions/responsibilities
 - 1.2.3 code of ethics
- 1.3 describe personal work responsibilities and categorize them as:
 - 1.3.1 routine tasks; e.g., daily, weekly, monthly, yearly
 - 1.3.2 non-routine tasks; e.g., emergencies
 - 1.3.3 tasks requiring personal judgement
 - 1.3.4 tasks requiring approval of a supervisor

2. analyze personal performance in relation to established standards

- 2.1 evaluate his or her application of competencies developed in related CTS courses
- 2.2 evaluate standards of performance in terms of:
 - 2.2.1 quality of work
 - 2.2.2 quantity of work
- 2.3 evaluate his or her adherence to workplace policies and procedures related to health and safety
- 2.4 evaluate the work environment in terms of:
 - 2.4.1 location
 - 2.4.2 floor plan of work area
 - 2.4.3 analysis of workflow patterns

- 2.5 evaluate a professional in a related occupation in terms of:
 - 2.5.1 training and certification
 - 2.5.2 interpersonal skills
 - 2.5.3 technical skills
 - 2.5.4 professional ethics

3. demonstrate basic competencies

- 3.1 demonstrate fundamental skills to:
 - 3.1.1 communicate
 - 3.1.2 manage information
 - 3.1.3 use numbers
 - 3.1.4 think and solve problems
- 3.2 demonstrate personal management skills to:
 - 3.2.1 demonstrate positive attitudes and behaviours
 - 3.2.2 be responsible
 - 3.2.3 be adaptable
 - 3.2.4 learn continuously
 - 3.2.5 work safely
- 3.3 demonstrate teamwork skills to:
 - 3.3.1 work with others
 - 3.3.2 participate in projects and tasks

COURSE MWA3465: MWA PRACTICUM B

Level: First Period Apprenticeship

Prerequisite: None

Description: Students, on the work site, continue to develop and refine those competencies developed in related Career and Technology Studies (CTS) occupational areas, previous practicums, and other experiences.

Parameters: This course should be accessed only by students continuing to work toward attaining a recognized credential offered by an agency external to the school. Practicum courses extend the competencies developed in related CTS occupational areas. The practicum courses may not be delivered as stand-alone courses and may not be combined with core courses. This course may not be used in conjunction with Registered Apprenticeship Program courses. This practicum course may be delivered on- or off-campus. Instruction must be delivered by a qualified teacher with journeyperson certification or an experienced professional with journeyperson certification, who is under the supervision of the qualified teacher; both must be authorized to supervise trainees for the external credential.

Outcomes: The student will:

- 1. perform assigned tasks and responsibilities efficiently and effectively, as required by the agency granting credentials**
 - 1.1 identify regulations and regulatory bodies related to the credential
 - 1.2 describe personal roles and responsibilities, including:
 - 1.2.1 key responsibilities
 - 1.2.2 support functions/responsibilities
 - 1.2.3 code of ethics
 - 1.3 describe personal work responsibilities and categorize them as:
 - 1.3.1 routine tasks; e.g., daily, weekly, monthly, yearly
 - 1.3.2 non-routine tasks; e.g., emergencies
 - 1.3.3 tasks requiring personal judgement
 - 1.3.4 tasks requiring approval of a supervisor
- 2. analyze personal performance in relation to established standards**
 - 2.1 evaluate his or her application of competencies developed in related CTS courses
 - 2.2 evaluate standards of performance in terms of:
 - 2.2.1 quality of work
 - 2.2.2 quantity of work
 - 2.3 evaluate his or her adherence to workplace policies and procedures related to health and safety
 - 2.4 evaluate the work environment in terms of:
 - 2.4.1 location
 - 2.4.2 floor plan of work area
 - 2.4.3 analysis of workflow patterns

- 2.5 evaluate a professional in a related occupation in terms of:
 - 2.5.1 training and certification
 - 2.5.2 interpersonal skills
 - 2.5.3 technical skills
 - 2.5.4 professional ethics

3. demonstrate basic competencies

- 3.1 demonstrate fundamental skills to:
 - 3.1.1 communicate
 - 3.1.2 manage information
 - 3.1.3 use numbers
 - 3.1.4 think and solve problems
- 3.2 demonstrate personal management skills to:
 - 3.2.1 demonstrate positive attitudes and behaviours
 - 3.2.2 be responsible
 - 3.2.3 be adaptable
 - 3.2.4 learn continuously
 - 3.2.5 work safely
- 3.3 demonstrate teamwork skills to:
 - 3.3.1 work with others
 - 3.3.2 participate in projects and tasks

COURSE MWA3470: MWA PRACTICUM C

Level: First Period Apprenticeship

Prerequisite: None

Description: Students, on the work site, continue to develop and refine those competencies developed in related Career and Technology Studies (CTS) occupational areas, previous practicums, and other experiences.

Parameters: This course should be accessed only by students continuing to work toward attaining a recognized credential offered by an agency external to the school. Practicum courses extend the competencies developed in related CTS occupational areas. The practicum courses may not be delivered as stand-alone courses and may not be combined with core courses. This course may not be used in conjunction with Registered Apprenticeship Program courses. This practicum course may be delivered on- or off-campus. Instruction must be delivered by a qualified teacher with journeyperson certification or an experienced professional with journeyperson certification, who is under the supervision of the qualified teacher; both must be authorized to supervise trainees for the external credential.

Outcomes: The student will:

1. perform assigned tasks and responsibilities efficiently and effectively, as required by the agency granting credentials

- 1.1 identify regulations and regulatory bodies related to the credential
- 1.2 describe personal roles and responsibilities, including:
 - 1.2.1 key responsibilities
 - 1.2.2 support functions/responsibilities
 - 1.2.3 code of ethics
- 1.3 describe personal work responsibilities and categorize them as:
 - 1.3.1 routine tasks; e.g., daily, weekly, monthly, yearly
 - 1.3.2 non-routine tasks; e.g., emergencies
 - 1.3.3 tasks requiring personal judgement
 - 1.3.4 tasks requiring approval of a supervisor

2. analyze personal performance in relation to established standards

- 2.1 evaluate his or her application of competencies developed in related CTS courses
- 2.2 evaluate standards of performance in terms of:
 - 2.2.1 quality of work
 - 2.2.2 quantity of work
- 2.3 evaluate his or her adherence to workplace policies and procedures related to health and safety
- 2.4 evaluate the work environment in terms of:
 - 2.4.1 location
 - 2.4.2 floor plan of work area
 - 2.4.3 analysis of workflow patterns

- 2.5 evaluate a professional in a related occupation in terms of:
 - 2.5.1 training and certification
 - 2.5.2 interpersonal skills
 - 2.5.3 technical skills
 - 2.5.4 professional ethics

3. demonstrate basic competencies

- 3.1 demonstrate fundamental skills to:
 - 3.1.1 communicate
 - 3.1.2 manage information
 - 3.1.3 use numbers
 - 3.1.4 think and solve problems
- 3.2 demonstrate personal management skills to:
 - 3.2.1 demonstrate positive attitudes and behaviours
 - 3.2.2 be responsible
 - 3.2.3 be adaptable
 - 3.2.4 learn continuously
 - 3.2.5 work safely
- 3.3 demonstrate teamwork skills to:
 - 3.3.1 work with others
 - 3.3.2 participate in projects and tasks

COURSE MWA3475: MWA PRACTICUM D

Level: First Period Apprenticeship

Prerequisite: None

Description: Students, on the work site, continue to develop and refine those competencies developed in related Career and Technology Studies (CTS) occupational areas, previous practicums, and other experiences.

Parameters: This course should be accessed only by students continuing to work toward attaining a recognized credential offered by an agency external to the school. Practicum courses extend the competencies developed in related CTS occupational areas. The practicum courses may not be delivered as stand-alone courses and may not be combined with core courses. This course may not be used in conjunction with Registered Apprenticeship Program courses. This practicum course may be delivered on- or off-campus. Instruction must be delivered by a qualified teacher with journeyperson certification or an experienced professional with journeyperson certification, who is under the supervision of the qualified teacher; both must be authorized to supervise trainees for the external credential.

Outcomes: The student will:

1. perform assigned tasks and responsibilities efficiently and effectively, as required by the agency granting credentials

- 1.1 identify regulations and regulatory bodies related to the credential
- 1.2 describe personal roles and responsibilities, including:
 - 1.2.1 key responsibilities
 - 1.2.2 support functions/responsibilities
 - 1.2.3 code of ethics
- 1.3 describe personal work responsibilities and categorize them as:
 - 1.3.1 routine tasks; e.g., daily, weekly, monthly, yearly
 - 1.3.2 non-routine tasks; e.g., emergencies
 - 1.3.3 tasks requiring personal judgement
 - 1.3.4 tasks requiring approval of a supervisor

2. analyze personal performance in relation to established standards

- 2.1 evaluate his or her application of competencies developed in related CTS courses
- 2.2 evaluate standards of performance in terms of:
 - 2.2.1 quality of work
 - 2.2.2 quantity of work
- 2.3 evaluate his or her adherence to workplace policies and procedures related to health and safety
- 2.4 evaluate the work environment in terms of:
 - 2.4.1 location
 - 2.4.2 floor plan of work area
 - 2.4.3 analysis of workflow patterns

- 2.5 evaluate a professional in a related occupation in terms of:
 - 2.5.1 training and certification
 - 2.5.2 interpersonal skills
 - 2.5.3 technical skills
 - 2.5.4 professional ethics

3. demonstrate basic competencies

- 3.1 demonstrate fundamental skills to:
 - 3.1.1 communicate
 - 3.1.2 manage information
 - 3.1.3 use numbers
 - 3.1.4 think and solve problems
- 3.2 demonstrate personal management skills to:
 - 3.2.1 demonstrate positive attitudes and behaviours
 - 3.2.2 be responsible
 - 3.2.3 be adaptable
 - 3.2.4 learn continuously
 - 3.2.5 work safely
- 3.3 demonstrate teamwork skills to:
 - 3.3.1 work with others
 - 3.3.2 participate in projects and tasks

COURSE MWA3900: APPRENTICESHIP SAFETY

Level: First Period Apprenticeship

Prerequisite: None

Description: Students develop the knowledge and skills required to maintain a personal health and safety plan; identify the steps for obtaining a journey person certificate; and describe how to apply legislation, regulations, and practices of the industry. Students also learn to use the codes and standards that are applied in the industrial mechanic (millwright) trade.

Parameters: Access to a material work centre, complete with basic industrial mechanic (millwright) tools and materials, and to instruction from an individual with journey person certification in the industrial mechanic (millwright) trade.

Outcomes: The student will:

1. apply legislation, regulations, and practices ensuring safe work in the industrial mechanic (millwright) trade

- 1.1 demonstrate the application of the *Occupational Health and Safety Act, Regulation, and Code*
- 1.2 describe the employer's and employee's role with Occupational Health and Safety (OH&S) regulations, Worksite Hazardous Materials Information Systems (WHMIS), fire regulations, Workers' Compensation Board regulations, and related advisory bodies and agencies
- 1.3 describe industry practices for hazard assessment and control procedures
- 1.4 describe the responsibilities of workers and employers to apply emergency procedures
- 1.5 describe tradesperson attitudes with respect to housekeeping, personal protective equipment (PPE), and emergency procedures
- 1.6 describe the roles and responsibilities of employers and employees with the selection and use of PPE
- 1.7 select, use, and maintain appropriate PPE for worksite applications
- 1.8 use required PPE for tasks

2. use industry standard practices for climbing, lifting, rigging, and hoisting in the industrial mechanic (millwright) trade

- 2.1 describe manual lifting procedures
- 2.2 describe rigging hardware and associated safety factors
- 2.3 select equipment for rigging loads
- 2.4 describe hoisting and load moving procedures
- 2.5 describe crane and hoisting types
- 2.6 describe crane and hoisting components
- 2.7 describe the applications of knots
- 2.8 describe the construction of chains
- 2.9 describe the application of chains
- 2.10 describe hoisting- and moving-equipment inspection procedures
- 2.11 describe the construction of wire rope
- 2.12 describe the construction of steel and fibre slings
- 2.13 describe the application of steel and fibre slings
- 2.14 describe hand-rigging equipment
- 2.15 perform rigging and hoisting calculations

- 2.16 maintain PPE for climbing, lifting, and load moving equipment
- 2.17 use PPE for climbing, lifting, and load moving equipment
- 2.18 use hoisting- and moving-equipment signaling
- 2.19 perform load moving procedures
- 3. apply industry standard practices for hazardous materials and fire protection in this trade**
 - 3.1 describe roles, responsibilities, features, and practices related to the WHMIS program
 - 3.2 describe three key elements of WHMIS
 - 3.3 describe handling, storing, and transporting procedures for hazardous material
 - 3.4 describe venting procedures when working with hazardous materials
 - 3.5 describe hazards, classes, procedures, and equipment related to fire protection
- 4. manage an apprenticeship to earn journeyperson certification**
 - 4.1 describe the contractual responsibilities of the apprentice, employer, and Alberta Apprenticeship and Industry Training
 - 4.2 describe the purpose of the apprentice record book
 - 4.3 describe the procedure for changing employers during an active apprenticeship
 - 4.4 describe the purpose of the course outline
 - 4.5 describe the procedure for progressing through an apprenticeship
 - 4.6 describe advancement opportunities in this trade
- 5. use communication strategies and techniques**
 - 5.1 describe interpersonal communication skills
 - 5.2 describe communication methods
- 6. demonstrate basic competencies**
 - 6.1 demonstrate fundamental skills to:
 - 6.1.1 communicate
 - 6.1.2 manage information
 - 6.1.3 use numbers
 - 6.1.4 think and solve problems
 - 6.2 demonstrate personal management skills to:
 - 6.2.1 demonstrate positive attitudes and behaviours
 - 6.2.2 be responsible
 - 6.2.3 be adaptable
 - 6.2.4 learn continuously
 - 6.2.5 work safely
 - 6.3 demonstrate teamwork skills to:
 - 6.3.1 work with others
 - 6.3.2 participate in projects and tasks
- 7. create a transitional strategy to accommodate personal changes and build personal values**
 - 7.1 identify short-term and long-term goals
 - 7.2 identify steps to achieve goals