

MILLWRIGHT/INDUSTRIAL MECHANIC (MWIN)

Registration in some course sections is restricted to students in particular programs. See Timetables - [kpu.ca/registration/timetables](http://www.kpu.ca/registration/timetables) (<http://www.kpu.ca/registration/timetables/>) - for current section information.

Visit the BC Transfer Guide - [bctransferguide.ca](https://www.bctransferguide.ca) (<https://www.bctransferguide.ca/>) - for information about course transfer in B.C.

MWIN 1101 2 credits

Millwright Trade Safety

Students will address safe work practices and how they pertain to industrial work sites. They will examine the Occupational Health and Safety Regulation and Guidelines of WorkSafeBC applicable to the millwright trade. Students will practice the safe handling and storage methods for materials and equipment. They will participate in weekly toolbox safety orientation sessions. Students will interact with other students on a program safety committee to achieve an effective safe working environment.

Level: VO

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1106 1 credit

Print Reading and Sketching

Students will identify the types of drawings and diagrams associated with the millwright trade. They will produce sketches, using the elements common to all drawings, plans and sketches.

Level: VO

Co-requisite(s): MWIN 1101

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1112 1 credit

Measuring Tools

Students will use a variety of measuring tools and measuring techniques appropriate and necessary to make non-precision and precision measurements in either inch or metric standard. They will complete assignments that challenge them to make informed decisions on selection, use, concepts and procedures used with each tool or combination of tools taught. Students will develop an understanding of the need for consistency and accuracy based on equipment use. They will make sketches that use detailed methods of reporting.

Level: VO

Co-requisite(s): MWIN 1101

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1113 1.5 credits

Layout and Machine Foundations

Students will perform two distinctly different types of layouts; shop layout and machine foundation layout. In shop layout, the student will develop strategy from a blueprint or sketch, then lay out the shapes of objects (parts) for manufacturer. In machine foundation layout, the student details all aspects of machine foundations, including identifying types of bases, methods of anchoring, setting, and leveling bases to correct elevations. They will identify, select, and use the appropriate layout tools to produce machine foundation layouts to the desired accuracy required for setting industrial machines.

Level: VO

Co-requisite(s): MWIN 1101

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1121 1 credit

Hand Tools and Bench Work

Students will develop basic hand skills that are the foundation for becoming a millwright (industrial mechanic) craftsperson. They will complete shop projects that involve bench work to practice hand skills using metal cutting tools, holding tools, striking tools, and assembling tools. Students will develop knowledge and skill in tool identification, tool selection, and tool maintenance.

Level: VO

Co-requisite(s): MWIN 1101

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1131 1 credit

Power Hand Tools

Students will develop and practise the skills required to safely use a large selection of power hand tools used in industrial applications. They will use electric, pneumatic, as well as powder actuated power tools. Students will plan and develop strategies to complete projects, and will create written maintenance reports on pieces of equipment or procedures for tool use. They will be certified in the use of selected powder actuated (explosive) tools.

Level: VO

Co-requisite(s): MWIN 1101

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1135 2 credits

Rigging

Students practice and develop the skills to tie knots, bends and hitches for specific rigging applications. They will select ropes, slings, hoists, attachments, and other rigging equipment to safely lift and move heavy objects. Students demonstrate their knowledge of Provincial Occupational Health and Safety Regulations pertaining to rigging through practical competencies and written tests.

Level: VO

Co-requisite(s): MWIN 1101

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1140 4 credits

Machine Tool Basics

Students will operate standard machine tools like metal-cutting saws, drilling machines, bench grinders and surface grinders. They will learn machining fundamentals and common methods of machining and shaping parts to meet given specifications. Students will practice common machining techniques to accurately produce shapes of various types on these machine tools. They will use reasoning and problem solving skills to interpret print information, plan machine tool operations and demonstrate safety awareness when using the machine tools.

Level: VO

Prerequisite(s): MWIN 1131

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1141 3 credits

Machine Tool Basics

Students will operate standard machine tools like metal-cutting saws, drilling machines and bench grinders. They will learn machining fundamentals and common methods of machining and shaping parts to meet given specifications. Students will practice common machining techniques to accurately produce shapes of various types on these machine tools. They will use reasoning and problem solving skills to interpret print information, plan machine tool operations and demonstrate safety awareness when using the machine tools.

Level: VO

Co-requisite(s): MWIN 1101

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1150 2 credits

Machine Tools

Students will operate machine tools like milling machines, lathes and a variety of other machine tools to produce industrial components/parts. They will develop machining knowledge and skills while accurately producing these various parts to given specifications. Students will use reasoning and problem solving skills to interpret print information, plan machine tool operations and demonstrate safety awareness when using the machine tools.

Level: VO

Prerequisite(s): MWIN 1140

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1160 1 credit

Fasteners and Fittings

Students will identify and use a wide variety of fasteners to complete assignments that require them to differentiate between thread systems. They will use drawings, parts catalogues and service manuals to locate technical information on fasteners. Students will select the necessary and appropriate hand tools to make bolted and screwed connections and ensure that parts are assembled to specifications.

Level: VO

Co-requisite(s): MWIN 1101

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1170 1.5 credits

Metallurgy

Students will participate in lectures and will work in small discussion groups to examine and differentiate the properties of metals, interpret heat-treatment terms, and learn the requirements for different metal heat-treatments. They will learn the basics of different metal manufacturing processes. Students will experiment with identifying different properties of metals and non-metals, with conducting heat-treatments, and with destructive and non-destructive tests on metal samples in the shop.

Level: VO

Prerequisite(s): MWIN 1121

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1180 2.5 credits

Level 1 Welding for Millwrights

Students will use a variety of welding processes, welding equipment and other metal working tools appropriate and necessary for the task of joining metals. They will learn and practise procedures, terminology and appropriate safety precautions, as applied to oxy-acetylene use and shielded metal arc welding processes.

Level: VO

Prerequisite(s): MWIN 1101

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)

MWIN 1205 1 credit

Lubrication

Students will study principles of friction, lubrication theory, and the function of lubricating products. They will dismantle, inspect, assemble, and test mechanical lubrication systems for maintenance then complete maintenance reports.

Level: VO

Co-requisite(s): MWIN 1101

Attribute: TRAD (<https://calendar.kpu.ca/courses-az/#courseattributestext>)