MILLWRIGHT (INDUSTRIAL MECHANIC) (MWIN)

This is a list of the Millwright (Industrial Mechanic - MWIN) courses available at KPU.

Enrolment in some sections of these courses is restricted to students in particular programs. See the Course Planner - kpu.ca/registration/timetables - for current information about individual courses.

For information about transfer of credit amongst institutions in B.C. and to see how individual courses transfer, go to the BC Transfer Guide bctransferguide.ca

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.

MWIN 1106 **1 Credits**
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.

Co-requisites: MWIN 1101

MWIN 1112 (formerly MWIN 1111) **1 Credits**
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.

Co-requisites: MWIN 1101

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.

Co-requisites: MWIN 1101

MWIN 1121 **1 Credits**
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 invlolve 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.

Co-requisites: MWIN 1101

MWIN 1131 **1 Credits**
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.

Co-requisites: MWIN 1101

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.

Co-requisites: MWIN 1101

MWIN 1141 (formerly MWIN 1140) **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.

Co-requisites: MWIN 1101

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.

Prerequisites: MWIN 1140

MWIN 1160 (formerly MWIN 1230) **1 Credits**
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.

Co-requisites: MWIN 1101

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.

Prerequisites: MWIN 1101

MWIN 1205 **1 Credits**
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.

Co-requisites: MWIN 1101

MWIN 1235 **3.5 Credits**
Hydraulics
Students will learn fluid power theory, terms, and basic hydraulic system design attending lectures and working in small groups. They will use computer simulation software and hydraulic training panels to construct and trouble-shoot circuits and examine how system components interact. In the shop students will inspect and reassemble selected hydraulic components.

Prerequisites: MWIN 1120 and 1145 and 1146

MWIN 1240 **3 Credits**
Pneumatics
Students will learn gas theory and circuit design methodologies while attending lectures and working in small groups. They will use computer simulation software and pneumatic training panels to design, construct, and trouble-shoot circuits and examine how systems components interact. In the shop, students will report on distribution systems, conduct routine compressor inspections, and dismantle, inspect and reassemble pneumatic components.

Prerequisites: MWIN 1120 and 1145 and 1146