METAL FABRICATION (MFAB)

This is a list of the Metal Fabrication (MFAB) courses available at KPU.

MFAB 1100   **2.5 Credits**
Safe Working Procedures
Students will use personal protective equipment, adhere to applicable safety regulations and use fire suppression equipment. They will employ safe lifting techniques, use cranes, lift trucks and material handling equipment, as well as tie knots, bends, and hitches in ropes to be used in the rigging of equipment. Students will use safety procedures to erect ladders and scaffolding and investigate the common causes of accidents in metal fabrication shops and job sites and address special precautions to be taken in adverse weather conditions.

MFAB 1110   **2 Credits**
Trade-specific Tools
Students will select and use appropriate tools for various tasks with an emphasis on safety. They will complete various assignments and projects using hand tools, bench and hand grinders, portable power tools, and drill presses specific to the metal fabrication industry.

Prerequisites: MFAB 1100

MFAB 1115   **2 Credits**
Basic Stationary Power Equipment
Students will operate metal fabrication equipment including power shears, power brake press, power plate rolls, ironworker, pipe cutters, hole punches, and power metal saws. They will safely complete various basic projects using stationary shop equipment as they relate to the metal fabrication industry.

Prerequisites: MFAB 1100

MFAB 1120   **2 Credits**
Oxy-fuel and Cutting Equipment
Students will assemble and disassemble cutting equipment and use safety procedures for oxy-fuel equipment. They will use oxy-fuel equipment to heat and cut various plate and structural shapes and pipe smoothly and accurately, with hand-held torches and machines.

Prerequisites: MFAB 1100

MFAB 1125   **2.5 Credits**
Welding for Metal Fabrication
Students will learn the theory of oxy-fuel and arc welding. They will weld various gauges of metal with oxy-fuel, and arc weld various shapes of metal using Shielded Metal Arc Welding (SMAW) and Gas Metal Arc Welding (GMAW) practices. Students will learn the theory of air carbon arc cutting and plasma arc cutting, and will use air carbon arc cutting equipment to complete various practical projects. They will also use mechanical testing equipment for testing weld specimens.

Prerequisites: MFAB 1100

MFAB 1130   **2 Credits**
Read Basic Drawings
Students will interpret basic blueprints, and sketch or draw objects in a variety of methods including orthographic projection, isometric projection, and secondary views of objects. They will interpret drafting and welding symbols, multi-view shop drawings as well as basic structural drawings. Students will lay out simple templates, identify common structural shapes, use basic layout terms, and develop patterns using parallel line development.

MFAB 1141   **4 Credits**
Basic Metal Fabrication
Students will perform shop layout tasks, math calculations, and will prepare work orders. They will differentiate among common fitting considerations and procedures, safe work practices, standard allowances, required accuracy, and shop tolerances. Students will complete a variety of metal fabrication practical projects using different types of equipment, metals, and structural shapes. They will utilize common methods of metal preparation for fine finishing of projects and application of a variety of coatings and paints.

Prerequisites: MFAB 1100

MFAB 1150   **1.5 Credits**
Metallurgy Theory
Students will describe the effects of heat and stress on metals and differentiate among the types, grades and properties of steels, as well as choose appropriate stress relieving techniques for metals. They will employ standard destructive testing inspection techniques.

MFAB 1206 (formerly MFAB 1205)   **2 Credits**
Metal Fabrication Math
Students will study applied trades mathematics required by metal fabricators. They will solve problems involving dimension, area, weight and volume. Students will calculate ratio and proportion. They will apply geometric construction, trigonometry and Pythagoras theorem to practical applications.

In the event of a discrepency between this document and the official KPU 2015-16 Calendar (available at www.kpu.ca/calendar/2015-16), the official calendar shall be deemed correct.

2015-16 Calendar   **www.kpu.ca/calendar/2015-16**