

COURSE FAB1040: OXYACETYLENE WELDING**Level:** Introductory**Theme:** Fabrication Processes**Prerequisite:** FAB1010 Fabrication Tools & Materials**Description:** Students develop basic skills in the safe handling and operation of oxyacetylene equipment.**Parameters:** Access to a materials work centre complete with oxyacetylene welding equipment and fabrication facilities, and to instruction from an individual with formal specialized training in basic oxyacetylene welding.**Curriculum and Assessment Standards**

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> recognize health and safety hazards associated with oxyacetylene welding (OWA), and take preventive measures to avoid accidents and personal injury to self and others perform safe oxyacetylene start-up and shut-down procedures 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> ongoing observed performance related to: <ul style="list-style-type: none"> appropriate selection and use of personal protective equipment maintenance of a clean and tidy workstation safe use of equipment and materials. <p><i>Assessment Tool</i> <i>Fabrication Process: Basic Oxyacetylene Welding, FAB1040-1</i></p> <p><i>Standard</i> <i>Performance rating of 1 for each applicable task</i></p>	10
	<ul style="list-style-type: none"> demonstration of safe start-up and shut-down procedures, using Oxyacetylene Welding (OAW) equipment. <p><i>Assessment Tool</i> <i>Equipment Checklist: OAW Start-up and Shut-down Procedures, FABEQUIP-5</i></p> <p><i>Standard</i> <i>All procedures to be performed correctly</i></p>	20

COURSE FAB1040: OXYACETYLENE WELDING (continued)

Concept	Specific Outcomes	Notes
<ul style="list-style-type: none"> • Oxyacetylene Welding (continued) • Weld Joints, Position and Types • Health and Safety 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe how welding tips are sized • describe how welding tips are cleaned • describe the characteristics of: <ul style="list-style-type: none"> – an oxidizing flame – a carburizing flame – a neutral flame • identify typical weld types; e.g.: <ul style="list-style-type: none"> – fillet – groove – plug • identify typical weld positions; e.g.: <ul style="list-style-type: none"> – flat – horizontal – vertical – overhead • list and describe the basic weld joints; e.g.: <ul style="list-style-type: none"> – butt – lap – tee – corner – edge • describe the hazards associated with oxyacetylene welding in relation to: <ul style="list-style-type: none"> – use of personal protective equipment – use of flammable gases under pressure – the need to remove or protect all combustible materials around the welding area • describe a plan of action in the event of an accident. 	<p>Review the parts of a flame and demonstrate where the greatest amount of heat is produced.</p> <p>Explain the importance of not allowing pure oxygen to come in contact with oily or greasy materials under any circumstance.</p>

COURSE FAB1040: OXYACETYLENE WELDING (continued)

Concept	Specific Outcomes	Notes
<p>Planning and Management</p> <ul style="list-style-type: none"> • Start-up and Shut-down Procedures 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe and demonstrate the safe start-up and shut-down procedures for oxyacetylene welding • prepare a selection of coupons for welding lap joints • select the appropriate tip for a given application • identify appropriate gas pressure for proper flame control • identify the appropriate fire extinguisher in the event of a fire. 	<p>In this course, students are not expected to set up the welding equipment; however, they are expected to demonstrate safe start-up and shut-down procedures.</p>
<p>Implementation</p> <ul style="list-style-type: none"> • Fusion Welding 	<ul style="list-style-type: none"> • demonstrate proficiency in: <ul style="list-style-type: none"> – creating lines of fusion without using a filler rod – creating lines of fusion with filler rod – welding fillet welds in the flat position. 	<p>Students should gain experience welding various thicknesses of materials using different diameters of filler rods and welding tip sizes.</p>
<p>Assessment</p> <ul style="list-style-type: none"> • Quality Control • Career Preparation 	<ul style="list-style-type: none"> • complete a visual inspection of a weld by considering the overall appearance, size and shape of the beads, plate penetration, fusion and degree of undercutting and overlapping • prepare a record of completed activities within a portfolio. 	<p>Have students identify the defects in unacceptable welds and suggest ways to overcome these imperfections.</p>