

COURSE FAB2030: OXYFUEL WELDING**Level:** Intermediate**Theme:** Fabrication Processes**Prerequisite:** FAB1040 Oxyacetylene Welding**Description:** Students develop basic skills in the safe and efficient use of oxyfuel equipment and supplies to braze and fusion weld.**Parameters:** Access to a fabrication work centre complete with oxyfuel welding equipment and supplies and to instruction from an individual with formal, specialized training in oxyfuel welding practices.**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"> • describe the essential differences between braze welding and fusion welding • demonstrate basic braze welding competencies 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • an oral or written response that outlines the essential differences between braze welding and fusion welding • completion of a series of braze weld applications in the flat and horizontal positions. <p><i>Assessment Tool</i> <i>Fabrication Process: Basic Oxyfuel Welding, FAB2030-1</i></p> <p><i>Standard</i> <i>Beads are to be slightly convex and of uniform width and height; ripples are to be evenly spaced and free of craters</i> <i>Performance rating of 2 for each applicable task</i></p>	<p>10</p> <p>30</p>

COURSE FAB2030: OXYFUEL WELDING (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> • demonstrate basic oxyfuel weld (OFW) competencies in the flat, horizontal and vertical positions • demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • completion of light and heavy gauge fillet and square groove butt welds in the flat, horizontal and vertical positions. <p><i>Assessment Tool</i> <i>Fabrication Process: Basic Oxyfuel Welding, FAB2030-1</i> <i>Illustrative Example: Vertical Butt Joint Fusion Weld, FAB2030-2</i></p> <p><i>Standard</i> <i>Weld profile should be slightly convex and of uniform width and height; ripples are to be close, bullet shaped and free of voids, evidence of undercutting and overlapping. Good depth of penetration should be evident over the entire length of the weld</i> <i>Performance rating of 2 for each applicable task</i></p> <ul style="list-style-type: none"> • observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any Assessment Tools noted above</i></p>	<p>60</p> <p>Integrated throughout</p>

Concept	Specific Outcomes	Notes
<p>Orientation</p> <ul style="list-style-type: none"> • Health and Safety 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe health and safety issues such as: <ul style="list-style-type: none"> – using the appropriate personal protective equipment and clothing – keeping the welding area free of combustible materials – insuring adequate ventilation particularly when braze welding – returning and storing all consumables as directed – locating appropriate fire extinguishers in the event of a fire 	

COURSE FAB2030: OXYFUEL WELDING (continued)

Concept	Specific Outcomes	Notes
<ul style="list-style-type: none"> • Storage and Set Up of Oxygen and Fuel Cylinders • Oxyfuel Gases • Welding Principles 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe the appropriate moving, storing and set-up procedures • identify local codes and restrictions related to the use and storage of oxygen and acetylene cylinders • describe the alternative gases available for heating; their comparative temperatures and applications such as MAPP and propane • describe the differences between fusion welding and braze welding • list the advantages and disadvantages of braze welding. 	<p>Review WHMIS regulations regarding the safe storage and handling of oxyfuel cylinders.</p> <p>Explain the difference between cohesive and adhesive bonding.</p>
<p>Planning and Management</p>	<ul style="list-style-type: none"> • select the correct filler rod and tip size for a given application • set working gas pressures to match the tip size • describe the appropriate clearance allowed between parts of a braze weldment. 	<p>Review safe start-up and shut-down procedures.</p>
<p>Implementation</p> <ul style="list-style-type: none"> • Oxyfuel Welding 	<ul style="list-style-type: none"> • demonstrate basic skills in braze welding in the flat and horizontal positions • demonstrate basic fusion welding skills in the flat, vertical and horizontal positions. 	<p>Have students practise making a bead before attempting a braze weld.</p> <p>It is recommended that students practice flat butt joints before proceeding to the vertical and horizontal positions.</p>
<p>Assessment</p> <ul style="list-style-type: none"> • Quality Control • Career Information • Career Preparation 	<ul style="list-style-type: none"> • prepare a destructive and non-destructive weld assessment • research applications of oxyfuel welding • prepare a record of completed activities within a portfolio. 	

