

COURSE FAB2060: ARC WELDING 2**Level:** Intermediate**Theme:** Fabrication Processes**Prerequisite:** FAB2050 Arc Welding 1**Description:** Students identify appropriate electrodes, visually assessing a weld, and making the necessary adjustments to improve weld quality while developing horizontal position welding skills.**Parameters:** Access to a fabrication work centre complete with shielded metal arc welding equipment and supplies and to instruction from an individual with formal, specialized training in arc 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"> explain the current systems used to classify electrodes in Canada and the United States identify strategies to assess and improve weld quality 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> accurate identification of the characteristics of three different electrodes using the Canadian Standards Association (CSA) and the American Welding Society (AWS) codes. <p><i>Assessment Tool</i> <i>Response Assessment: Electrode Coding, FAB2060-1</i></p> <p><i>Standard</i> <i>Response rating of 2</i></p>	10
	<ul style="list-style-type: none"> assessment of a weld given a cross-section and plan view and strategies to correct observed faults to include: <ul style="list-style-type: none"> use of the correct electrode type of current and current settings travel speed electrode angle and inclination <p><i>Assessment Tool</i> <i>Assessment Framework: Product Assessment, FABPRD</i></p>	15

COURSE FAB2060: ARC WELDING 2 (continued)

Concept	Specific Outcomes	Notes
<ul style="list-style-type: none"> • Arc Control • Weld Assessment • Joint Preparation 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • compare straight and reverse polarity and the resultant heat distribution • describe the advantages and disadvantages of using alternating and direct current • identify the cause and corrective measures for arc blow • describe the effects of a short and long arc on mild steel • describe the effects of improper: <ul style="list-style-type: none"> – amperage setting – arc length – travel speed • explain the importance of removing: <ul style="list-style-type: none"> – oil – paint – rust – mill scale from a joint before welding. 	<p>Explain the conditions that contribute to and prevent undercutting, overlapping, incorrect bead formation and lack of penetration.</p>
<p>Planning and Management</p> <ul style="list-style-type: none"> • Electrode Selection 	<ul style="list-style-type: none"> • describe the electrode(s) that can be used for a given application by considering: <ul style="list-style-type: none"> – properties of the base metal – weld position – flux requirements – material thickness – static and dynamic load characteristics. 	
<p>Implementation</p> <ul style="list-style-type: none"> • Shielded Metal Arc Welding 	<ul style="list-style-type: none"> • use the appropriate electrode and machine setting to make single and multiple pass fillet in the horizontal position and groove welds in the flat position. 	

COURSE FAB2060: ARC WELDING 2 (continued)

Concept	Specific Outcomes	Notes
Assessment <ul style="list-style-type: none"><li data-bbox="207 447 443 478">• Quality Control<li data-bbox="207 600 391 663">• Career Preparation	<i>The student should:</i> <ul style="list-style-type: none"><li data-bbox="488 447 1125 579">• inspect a weld by considering the overall appearance, size and shape of the beads, plate penetration, fusion and degree of undercutting and overlapping<li data-bbox="488 600 1101 663">• prepare a record of completed activities within a portfolio.	Have students understand that stray arc marks and excessive spatter also detract from the quality of the weld.