

COURSE FAB2090: SHEET FABRICATION 2 (MACHINE PROCESSES)**Level:** Intermediate**Theme:** Fabrication Processes**Prerequisite:** FAB1090 Sheet Fabrication 1 (Hand Processes)**Description:** Students use basic layout, cutting, bending and fastening operations to transform common types of sheet metals into consumer products.**Parameters:** Access to a fabrication work centre complete with basic sheet metal cutting, forming and fastening tools and to instruction from an individual with specialized training in sheet metal 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"> • identify and describe common types of stock sheet metal materials and related tools • demonstrate approved materials handling and storage practices • perform basic sheet metal fabrication skills and practices to produce a product 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • accurate identification and description of five different sheet metal materials and 10 sheet metal machine tools • observed performance related to: <ul style="list-style-type: none"> – use of personal protective equipment – correct lifting techniques – measures taken to protect materials from surface damage – proper storage of cut-offs • successful completion of a given rectangular sheet metal product that uses one or more common seams and hems. <p><i>Assessment Tool</i> <i>Product Assessment: Basic Sheet Metal Products, FAB2090-1</i></p> <p><i>Standard</i> <i>The product should be structurally sound, free of surface defects and meet the stated size and shape specifications.</i> <i>Performance rating of 2 for each applicable task</i></p>	<p>20</p> <p>10</p> <p>70</p>

COURSE FAB2090: SHEET FABRICATION 2 (MACHINE PROCESSES) (continued)

General Outcomes	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> demonstrate basic competencies. 	<p><i>Assessment of student achievement should be based on:</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>Integrated throughout</p>

Concept	Specific Outcomes	Notes
<p>Orientation</p> <ul style="list-style-type: none"> Sheet Stock Identification and Handling Cutting Sheet Stock Bending Sheet Stock Seaming Riveting Threaded Fasteners Soldering and Welding 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> identify common samples of sheet metal stock by their appearance and properties describe the most appropriate way to safely handle and store metal stock explain how sheet metal thicknesses are measured and stated explain the safe use of hand and machine tools to make internal and external: <ul style="list-style-type: none"> straight cuts curved cuts explain the safe use of hand and machine tools to form a product describe and give examples of uses for: <ul style="list-style-type: none"> flange/butt lap folded grooved seams describe the advantages and disadvantages of: <ul style="list-style-type: none"> tinner's rivets pop rivets identify the common sizes and types of metal fastening screws and bolts identify appropriate conditions and techniques to solder or weld a seam 	<p>Point out that even though sheet metal work tends to be focused around a specific trade, the principles learned here have widespread applications.</p>

COURSE FAB2090: SHEET FABRICATION 2 (MACHINE PROCESSES) (continued)

Concept	Specific Outcomes	Notes
<ul style="list-style-type: none"> • Finishing 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • research common finishing techniques. 	<p>Suggested finishes include:</p> <ul style="list-style-type: none"> – paint – powder spray – lacquer.
<p>Planning and Management</p> <ul style="list-style-type: none"> • Pattern Layout • Operation Sequencing 	<ul style="list-style-type: none"> • calculate the appropriate hem and seam allowances for a given product • calculate and mark the sequence and direction of all bends. 	
<p>Implementation</p> <ul style="list-style-type: none"> • Material Processing and Fabrication 	<ul style="list-style-type: none"> • demonstrate basic sheet metal process and fabrication skills related to: <ul style="list-style-type: none"> – layout – cutting – bending – fastening procedures. 	
<p>Assessment</p> <ul style="list-style-type: none"> • Quality Control • Career Preparation 	<ul style="list-style-type: none"> • inspect a completed rectangular product for the overall attention to: <ul style="list-style-type: none"> – fit of seams – accuracy of measurement – structural soundness – quality of finish • prepare a record of completed activities within a portfolio. 	

