

**COURSE FAB3160: PREFABRICATION PRINCIPLES**

<b>Level:</b>	Advanced
<b>Theme:</b>	Production Systems and Processes
<b>Prerequisite:</b>	FAB2160 Custom Fabrication
<b>Description:</b>	Students work in a cooperative learning environment to plan and construct a prefabricated product/ structure to meet the specific needs of a client.

**Parameters:** Access to fabrication facilities and equipment and to instruction from an individual with journeyman qualifications if students are involved in customer work related to welding or other trade-related activities.

**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"> <li>perform basic shop drawing take-off skills</li> <li>demonstrate advanced level resource management skills</li> <li>demonstrate appropriate prefabrication skills and practices</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>development of an accurate cutting list and fabrication flow chart</li> </ul>	20
	<ul style="list-style-type: none"> <li>observed resource management skills used to access and deploy human and material resources</li> </ul>	20
	<ul style="list-style-type: none"> <li>successful prefabrication of a component that fulfills the design specifications, quality and quantity requirements.</li> </ul> <p><i>Assessment Tool</i>  <i>Product Assessment: Prefabricated Project, FAB3160-1</i>  <i>Illustrative Example, Gear Puller, FAB3160-2</i></p> <p><i>Standard</i>  <i>Jigs and fixtures are to be developed and appropriate tools and materials acquired and used efficiently through proper scheduling and time allocations</i></p>	60
	<ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul> <p><i>Assessment Tool</i>  <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	Integrated throughout

**COURSE FAB3160: PREFABRICATION PRINCIPLES (continued)**

Concept	Specific Outcomes	Notes
<p>Orientation</p> <ul style="list-style-type: none"> <li>• Prefabrication Principles</li> </ul>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• cite examples of products that are built from prefabricated parts</li> <li>• describe the advantages and disadvantages of prefabricating a component</li> <li>• identify specific design considerations that must be adhered to when using prefabricated components</li> <li>• explain procedures that are used to create a cutting list from a shop drawing</li> <li>• describe safe rigging procedures that are used to move materials and components.</li> </ul>	<p>Greater efficiency and productivity are achieved by using pre-fabrication processes. However, extra care must be taken to ensure that components have been accurately designed and fabricated in the shop prior to the assembly on site.</p>
<p>Planning and Management</p> <ul style="list-style-type: none"> <li>• Quality Customer Service</li> </ul>	<ul style="list-style-type: none"> <li>• create a cutting list from a shop drawing</li> <li>• prepare the required templates jigs and fixtures</li> <li>• locate appropriate materials and supplies</li> <li>• identify specialized equipment and processes that will be required</li> <li>• prepare production flow chart</li> <li>• show how to meet with the customer to determine the product/structure specifications</li> <li>• create a suitable prefabricated design, timeline and budget</li> <li>• show how to apprise the customer of any need to make changes.</li> </ul>	<p>Good communication between the customer, designer engineer and fabricator is a must.</p> <p>Students need to develop their interpersonal and communication skills.</p>

**COURSE FAB3160: PREFABRICATION PRINCIPLES (continued)**

Concept	Specific Outcomes	Notes
<p>Implementation</p> <ul style="list-style-type: none"> <li>• Material Processing</li> </ul>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• assign responsibilities to:               <ul style="list-style-type: none"> <li>– break out materials according to a prearranged plan</li> <li>– process materials with a minimum number of set-ups</li> <li>– assemble, finish and prepare the product for delivery</li> </ul> </li> <li>• explain the need to:               <ul style="list-style-type: none"> <li>– identify group and individual responsibilities</li> <li>– identify and capitalize on individual strengths</li> </ul> </li> <li>• help install/assemble the product if contracted.</li> </ul>	
<p>Assessment</p> <ul style="list-style-type: none"> <li>• Quality Control</li> <li>• Career Preparation</li> </ul>	<ul style="list-style-type: none"> <li>• participate in group and self-evaluation processes</li> <li>• demonstrate strategies for positive criticism</li> <li>• complete a customer satisfaction follow-up survey</li> <li>• prepare a record of completed activities within a portfolio.</li> </ul>	<p>Students need to understand the importance of having good intra- and interpersonal skills.</p>

