

COURSE FAB2170: PIPE FITTING**Level:** Intermediate**Theme:** Fabrication Processes**Prerequisite:** FAB1010 Fabrication Tools & Materials**Description:** Students learn about the uses of pipes, basic piping principles and fabrication skills.**Parameters:** Access to a fabrication work centre complete with cutting, threading and assembly tools, and to instruction from an individual with specialized training in pipe cutting and fitting practices.**Supporting Course:** FAB1110 Bar & Tubular Fabrication**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 pipe fitting materials and applications research and profile a trade or occupation within the pipe fitting field demonstrate approved methods of joining common types of pipes and materials 	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> accurate identification and description of four different pipe materials and appropriate applications 	25
	<ul style="list-style-type: none"> presentation of a career profile that outlines: <ul style="list-style-type: none"> present and future career opportunities skill requirements training opportunities. <p><i>Assessment Tool</i> <i>Research Process: Piping Systems, FAB2170-1</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each applicable task</i></p>	15
	<ul style="list-style-type: none"> completion of a simple piping system that incorporates a variety of pipe materials, fittings and components. <p><i>Assessment Tool</i> <i>Assessment Framework: Activity Assessment, FABACT</i></p> <p><i>Standard</i> <i>The system should be accurately laid out and connected with tight joints. Overall workmanship should meet trade expectations</i> <i>Performance rating of 2 for each applicable task</i></p>	60

COURSE FAB2170: PIPE FITTING (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"> Piping Systems Pipe Materials Pipe Components Joining Pipes 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> research and describe the types of piping systems used to provide: <ul style="list-style-type: none"> gas supply systems sprinkler systems hot water and heating services steam and superheated steam cooling systems petroleum and chemical products identify and provide applications for: <ul style="list-style-type: none"> standard pipe (black and galvanized) thin wall pipe extra strong (xs) pipe research and give examples of how common piping materials are coded and specified list and describe components found in piping systems; e.g.: <ul style="list-style-type: none"> flanges and fittings valves traps pumps describe appropriate applications and methods of joining pipe, by: <ul style="list-style-type: none"> threading welding mechanical fasteners. 	<p>Discuss residential and commercial applications of piping systems.</p>

COURSE FAB2170: PIPE FITTING (continued)

Concept	Specific Outcomes	Notes
<ul style="list-style-type: none"> • Joining Pipes (continued) • Calculations and Layout 	<p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe how to join dissimilar pipe materials; e.g.: <ul style="list-style-type: none"> – steel pipe to copper – steel pipe to plastic • analyze various methods to measure pipe lengths and calculate offsets • identify appropriate methods of laying, hanging and securing pipe. 	
<p>Planning and Management</p> <ul style="list-style-type: none"> • Print Reading 	<ul style="list-style-type: none"> • describe the appropriate type and size of pipe, fittings and components for a given drawing • calculate the length of a given offset. 	
<p>Implementation</p> <ul style="list-style-type: none"> • Health and Safety • Pipe Fabrication 	<ul style="list-style-type: none"> • identify all safety procedures related to: <ul style="list-style-type: none"> – use of personal protective clothing – lifting heavy weights – use of ladders and scaffolds – use of tools and materials • describe a safety plan in case of accident • use the appropriate tools to make a small pipe assembly that incorporates a variety of fittings and components. 	<p>Students may have to go off campus to gain practical experience in this course.</p>
<p>Assessment</p> <ul style="list-style-type: none"> • Quality Control • Career Information 	<ul style="list-style-type: none"> • test a simple pipe assembly for: <ul style="list-style-type: none"> – accuracy – tightness of joints – overall workmanship • research career and further training opportunities related to pipe work • evaluate personal interests and abilities related to making realistic career choices 	

COURSE FAB2170: PIPE FITTING (continued)

Concept	Specific Outcomes	Notes
<ul style="list-style-type: none">• Career Preparation	<p><i>The student should:</i></p> <ul style="list-style-type: none">• prepare a record of completed activities within a portfolio.	