

COURSE CON2080: PLUMBING SYSTEMS**Level:** Intermediate**Theme:** Building Systems (Processes and Applications)**Prerequisite:** CON1010 Basic Tools & Materials**Description:** Students develop basic knowledge and skills to fabricate and make repairs to residential drainage, waste, vent (DWV) and water supply systems.**Parameters:** Access to a building site and/or construction facility and to instruction from an individual with specialized training in plumbing.**Supporting Course:** CON1070 Building Construction**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 the parts of a residential plumbing system | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> a written or oral presentation that correctly identifies the: <ul style="list-style-type: none"> components of a water supply system drainage, waste and vent components types of pipe and fittings used on each of these systems. <p><i>Assessment Tool</i> <i>Presentations/Reports: Common Plumbing Systems, CON2080-1</i></p> <p><i>Standard</i> <i>Performance rating of 2 for each applicable task</i></p> | 10 |
| <ul style="list-style-type: none"> create a drawing of a water supply, drainage, waste and vent system for a typical plumbing fixture | <ul style="list-style-type: none"> a plan for a water supply and DWV system for a household fixture in a bathroom or kitchen. <p><i>Assessment Tool</i> <i>Activity Assessment: Installing a Plumbing Fixture, CON2080-2</i></p> <p><i>Standard</i> <i>The plan is consistent with conventional plumbing practice and code requirements</i></p> | 15 |

COURSE CON2080: PLUMBING SYSTEMS (continued)

| General Outcomes | Assessment Criteria and Conditions | Suggested Emphasis |
|--|--|--|
| <p><i>The student will:</i></p> <ul style="list-style-type: none"> • apply plumbing skills to assist in the installation of a water supply, waste and vent system • profile a trade or occupation within the plumbing field • demonstrate basic competencies. | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • demonstrations of appropriate work skills related to installation of a plumbing fixture. <p><i>Assessment Tool</i> <i>Activity Assessment: Installing a Plumbing Fixture, CON2080–2</i></p> <p><i>Standard</i> <i>Installation practices should correspond to those accepted in the plumbing industry</i> <i>Performance rating of 2 for each applicable task</i></p> <ul style="list-style-type: none"> • presentation of an occupation profile that outlines: <ul style="list-style-type: none"> – description of the occupation and working conditions – employment opportunities – training centres and entry requirements. <p><i>Assessment Tool</i> <i>Research Process: Career Opportunities in Plumbing, CON2080–3</i></p> <p><i>Standard</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>65</p> <p>10</p> <p>Integrated throughout</p> |

MODULE CON2080: PLUMBING SYSTEMS (continued)

| Concept | Specific Learner Expectations | Notes |
|---|---|---|
| <p>Orientation</p> <ul style="list-style-type: none"> • Residential Plumbing Systems • Plumbing Design • Installation Procedures | <p><i>The student should:</i></p> <ul style="list-style-type: none"> • identify and describe the piping systems in a conventional residence such as water supply, vent, drainage and gas supply • examine the principles related to proper sizing, venting, pressures and drainage angles • investigate and compare the use of iron, copper, brass and plastic components • identify the symbols that are used to depict common fixtures and fittings • identify the code requirements for installing a residential plumbing system • identify appropriate methods of cutting, iron, copper, steel and plastic pipe • describe and demonstrate approved methods of joining pipe using solder, adhesives, mechanical joints and threaded fasteners • determine when to use face-to-face, centre-to-centre and shoulder-to-shoulder measurements. | |
| <p>Planning and Management</p> <ul style="list-style-type: none"> • Layout • Health and Safety | <ul style="list-style-type: none"> • sketch a typical water supply and DWV system for a typical household fixture • use a plumbing layout drawing to create a detailed material list and cost estimate • locate and use the appropriate fire extinguisher for a given type of fire • describe the health hazards associated with the use of solder and plastic adhesives. | <p>Point out the need to comply with building code regulations.</p> |

MODULE CON2080: PLUMBING SYSTEMS (continued)

| Concept | Specific Learner Expectations | Notes |
|--|---|-------|
| <p>Implementation</p> <ul style="list-style-type: none"> • Material and Tool Processes | <p><i>The student should:</i></p> <ul style="list-style-type: none"> • use the appropriate tools, materials and techniques to: <ul style="list-style-type: none"> – rough-in a water supply, DWV system – pressure-test a supply system – install a fixture and connect supply and drainage lines. | |
| <p>Assessment</p> <ul style="list-style-type: none"> • Career Information • Career Preparation | <ul style="list-style-type: none"> • outline the trade qualifications and employment opportunities related to the plumbing trade • analyze personal interests and abilities related to making realistic career choices • maintain a record of completed activities within a portfolio. | |