



COURSE OUTLINE: PLM660 - PLUMBING SYSTEMS I

Prepared: Mike King

Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title	PLM660: PLUMBING SYSTEMS - LEVEL I
Program Number: Name	6240: PLUMBER - LEVEL I
Department:	PIPING TRADES
Academic Year:	2022-2023
Course Description:	In this course students will gain basic knowledge about pipe and fitting materials including pipe supports and hangars. Students will also learn about drainage systems, waste pipe systems and venting systems as well as code regulations.
Total Credits:	12
Hours/Week:	12
Total Hours:	96
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Essential Employability Skills (EES) addressed in this course:	<div><div>EES 1</div><div>Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</div></div> <div><div>EES 2</div><div>Respond to written, spoken, or visual messages in a manner that ensures effective communication.</div></div> <div><div>EES 3</div><div>Execute mathematical operations accurately.</div></div> <div><div>EES 4</div><div>Apply a systematic approach to solve problems.</div></div> <div><div>EES 5</div><div>Use a variety of thinking skills to anticipate and solve problems.</div></div> <div><div>EES 6</div><div>Locate, select, organize, and document information using appropriate technology and information systems.</div></div> <div><div>EES 7</div><div>Analyze, evaluate, and apply relevant information from a variety of sources.</div></div> <div><div>EES 8</div><div>Show respect for the diverse opinions, values, belief systems, and contributions of others.</div></div> <div><div>EES 9</div><div>Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.</div></div> <div><div>EES 10</div><div>Manage the use of time and other resources to complete projects.</div></div> <div><div>EES 11</div><div>Take responsibility for ones own actions, decisions, and consequences.</div></div>
Course Evaluation:	<div>Passing Grade: 50%, D</div> <div>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</div>
Other Course Evaluation & Assessment Requirements:	<div>V. EVALUATION PROCESS/GRADING SYSTEM:</div> <div>The final grade for the course will be established from the average of seven possible weekly</div>



	<p>tests.</p> <p>The following semester grades will be assigned to students:</p> <p>Grade Definition Grade Point Equivalent A+ 90 100% 4.00 A 80 89% B 70 - 79% 3.00 C 60 - 69% 2.00 D 50 59% 1.00 F (Fail) 49% and below 0.00</p>					
Books and Required Resources:	<p>Plumbing - Illustrated Series by Orderline Publisher: ORDERLINE ISBN: 9781897498804</p> <p>Level 1 Basic Plumbing Workbook for PLM660 by Sault College Publisher: Ak Graphics</p> <p>IPT's Trades Handbook by Robert A. Lee</p>					
Course Outcomes and Learning Objectives:	<table><tr><th>Course Outcome 1</th><th>Learning Objectives for Course Outcome 1</th></tr><tr><td>I. COURSE DESCRIPTION: Theory element for level one of the in-school portion of apprenticeship training for plumbers.</td><td>Identify various types of piping materials and their use. Potential Elements of the Performance: know the difference between different types of copper tube and their correct use as required by the applicable regulatory authorities know the different types plastics and their correct use as required by the applicable regulatory authorities select steel pipe for application as dictated by its manufacturing method know various types of piping material and their application as required by code requirement or piping system component Properly design and size drain plans and elevation drawings. Potential Elements of the Performance: select the proper pencils and set squares to clearly and neatly complete drain plans and stack elevations correctly follow oral and written instructions when completing drawings correctly size drains and vents as required by Part Seven of the Ontario Building Code Solve various trade related calculations using the required formulas and tables. Potential Elements of the Performance: select and apply the correct formula to calculate center to center measurements for 45 offsets and 45 rolling offsets select and apply the correct formula to calculate the center to center measurements for 22.5 angles</td></tr></table>		Course Outcome 1	Learning Objectives for Course Outcome 1	I. COURSE DESCRIPTION: Theory element for level one of the in-school portion of apprenticeship training for plumbers.	Identify various types of piping materials and their use. Potential Elements of the Performance: know the difference between different types of copper tube and their correct use as required by the applicable regulatory authorities know the different types plastics and their correct use as required by the applicable regulatory authorities select steel pipe for application as dictated by its manufacturing method know various types of piping material and their application as required by code requirement or piping system component Properly design and size drain plans and elevation drawings. Potential Elements of the Performance: select the proper pencils and set squares to clearly and neatly complete drain plans and stack elevations correctly follow oral and written instructions when completing drawings correctly size drains and vents as required by Part Seven of the Ontario Building Code Solve various trade related calculations using the required formulas and tables. Potential Elements of the Performance: select and apply the correct formula to calculate center to center measurements for 45 offsets and 45 rolling offsets select and apply the correct formula to calculate the center to center measurements for 22.5 angles
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	<p>select and apply the correct formula to calculate allowances required for bending of pipe or tubing apply the correct tables or charts to obtain the end to end measurement which apply to various types of piping materials</p> <p>Identify and use the requirements of Part Seven of the Ontario Building Code pertaining to drainage systems. Potential Elements of the Performance: select and apply the correct section, sub-section, clause, sentence or table as required to properly design and size plumbing drainage systems</p> <p>Identify and use the requirements of Part Seven of the Ontario Building Code pertaining to venting systems. Potential Elements of the Performance: select and apply the correct section, sub-section, clause, sentence or table as required to properly design and size plumbing venting systems</p>				
Evaluation Process and Grading System:	<table> <tr> <th>Evaluation Type</th><th>Evaluation Weight</th></tr> <tr> <td>written tests</td><td>100%</td></tr> </table>	Evaluation Type	Evaluation Weight	written tests	100%
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Date:	July 11, 2022				
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.				