



COURSE OUTLINE: PLM860 - PLUMBING SYSTEMS III

Prepared: Mike King

Approved: Corey Meunier, Chair, Technology and Skilled Trades

Course Code: Title	PLM860: PLUMBING SYSTEMS - LEVEL III
Program Number: Name	6242: PLUMBER - LEVEL III
Department:	PIPING TRADES
Semesters/Terms:	20W
Course Description:	This course provides the students with information and knowledge in waste pipe and water distribution systems, codes, storm and drainage systems, as well as sewage disposal systems. In addition, students will learn about hydronic heating systems, natural gas, medical gas, and industrial process piping systems.
Total Credits:	18
Hours/Week:	18
Total Hours:	144
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:	EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others. EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 50%, D
Other Course Evaluation & Assessment Requirements:	The final grade for the course will be established from the average of seven possible weekly tests. The following semester grades will be assigned to students: Grade



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	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 CR (Credit) Credit for diploma requirements has been awarded. S Satisfactory achievement in field /clinical placement or non-graded subject area. U Unsatisfactory achievement in field/clinical placement or non-graded subject area. X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course. NR Grade not reported to Registrar's office. W Student has withdrawn from the course without academic penalty.					
Books and Required Resources:	Level 3 Advanced Plumbing Workbook by Sault College Publisher: AK Graphics					
Course Outcomes and Learning Objectives:	<table><tr><th>Course Outcome 1</th><th>Learning Objectives for Course Outcome 1</th></tr><tr><td>Theory element for Level III of the in school portion of training for plumber apprentices.</td><td> Upon successful completion of this course, the student will demonstrate the ability to: Identify equipment requiring specific waste pipe and venting systems. Potential Elements of the Performance: - know the equipment which require acid waste systems. - provide information on the venting and waste requirements as stated in Part 7 of the 2006 Ontario Building Code. (O.B.C.) - know the equipment which requires indirect waste systems. - provide information for vent and waste pipe sizing as required by Part 7 of O.B.C. Identify various components of a water distribution system, their associated terminology and perform calculations required for a particular system. Potential Elements of the Performance: - explain the term water service. - explain the difference between private and municipal water supplies. - provide a detailed explanation of private water pump selection using the required information and calculations. - explain what type of water treatment equipment is required to maintain water quality. - define cross connection and backflow prevention. - design and size a water distribution piping system using charts and/ or tables. - explain the requirements for hot water storage tanks and heaters. Identify various piping designs for high rise buildings. Potential Elements of the Performance: - explain when booster pumps are required for water distribution systems. </td></tr></table>		Course Outcome 1	Learning Objectives for Course Outcome 1	Theory element for Level III of the in school portion of training for plumber apprentices.	Upon successful completion of this course, the student will demonstrate the ability to: Identify equipment requiring specific waste pipe and venting systems. Potential Elements of the Performance: - know the equipment which require acid waste systems. - provide information on the venting and waste requirements as stated in Part 7 of the 2006 Ontario Building Code. (O.B.C.) - know the equipment which requires indirect waste systems. - provide information for vent and waste pipe sizing as required by Part 7 of O.B.C. Identify various components of a water distribution system, their associated terminology and perform calculations required for a particular system. Potential Elements of the Performance: - explain the term water service. - explain the difference between private and municipal water supplies. - provide a detailed explanation of private water pump selection using the required information and calculations. - explain what type of water treatment equipment is required to maintain water quality. - define cross connection and backflow prevention. - design and size a water distribution piping system using charts and/ or tables. - explain the requirements for hot water storage tanks and heaters. Identify various piping designs for high rise buildings. Potential Elements of the Performance: - explain when booster pumps are required for water distribution systems.
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	- explain the difference between up fed systems and down fed piping systems. - detail the requirements pertaining to pressure reducing valves.					
Evaluation Process and Grading System:	<table><tr><th>Evaluation Type</th><th>Evaluation Weight</th></tr><tr><td>instructors tests</td><td>100%</td></tr></table>		Evaluation Type	Evaluation Weight	instructors tests	100%
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Date:	February 10, 2020					
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.					