

I. COURSE DESCRIPTION:

Theory element for level one of the in-school portion of apprenticeship training for plumbers.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. *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

2. *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

3. *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
- 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

4. 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

5. 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

III. TOPICS:

1. Pipe materials
2. Drain plans and stack elevations
3. 45 degree offsets, latent and sensible heat, btu. calculations and temperature scale conversion
4. Combined drains, semi combined drains, sizing drains
5. Back vent, continuous waste and vent, dual vent, stack vent, wet vent, and vent stacks

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Basic plumbing workbook
Part seven of the Ontario Building Code
IPT's Pipe Trades Handbook

V. EVALUATION PROCESS/GRADING SYSTEM:

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	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	

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.

VI. SPECIAL NOTES:

Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

Particular attention to the attendance requirements during the introduction to the apprentices by the Training Consultant for the Ministry of Training, Colleges and Universities must be adhered to for successful completion of the course.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.