MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

Faculty is required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Academic Affairs and Standards Council.

DEPT. Plumbing & Heating Technology
COURSE NUMBER: PLHT 1110
NUMBER OF CREDITS: 2(1 lecture, 1 lab)
COURSE TITLE: Code I

CATALOG DESCRIPTION: Provide an understanding of many of the technical rules of the Minnesota Plumbing Code. Topics included are Minnesota licensing laws, plumbing industry definitions, basic plumbing principles and general regulations, requirements and calculations for plumbing installations, potable water distribution systems, Drain, Waste and Vent systems, and various requirements for plumbing fixtures.

AUDIENCE: Students interested in pursuing a career in plumbing and heating.

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)
Area: by meeting the following competencies:
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PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE:
N/A

LENGTH OF COURSE: Semester

THIS COURSE IS USUALLY OFFERED:
Every other year ☐ fall ☐ spring ☐ summer ☐ undetermined ☐

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT: The academic objectives of this course are:
   b. Identify definitions, basic plumbing principles and general regulations.
   c. Determine requirements and calculations for plumbing installations, potable water distribution systems, drain, waste and vent systems.

2) THINKING SKILLS: This course will help students improve the effectiveness of their thinking skills through:
a. Completing homework (reading, reports, and worksheets)
b. Participating in classroom discussions
c. Taking open and closed book quizzes and tests
d. Complete assigned lab projects

3) COMMUNICATIONS SKILLS: This course will help students improve their oral and written communication skills through:
a. Participate in classroom discussions and reports.
b. Participate in assignments, worksheets and reports

4) HUMAN DIVERSITY: This course will help students recognize, understand, and appreciate human diversity through:
a. Participate in classroom discussions.
b. Work with fellow students on projects.
c. Working with students from other cultures.

TOPICS TO BE COVERED:
1. Minnesota licensing laws, plumbing industry definitions, basic plumbing principles.
2. General regulations, requirements and calculations for plumbing installations, potable water distribution systems, drain, waste and vent systems.
3. Requirements for plumbing fixtures.

COURSE LEARNING OUTCOMES (GENERAL):
   a. Analyze basic and general plumbing principles
   b. Explain plumbing terminology related to the plumbing code
   c. Identify materials used for fixtures and fittings
   d. Identify materials used in water supply and distribution
   e. Determine needed components for selected applications
   f. Demonstrate the ability to select proper materials for selected applications

STUDENT LEARNING OUTCOMES (SPECIFIC):
Students will:
1. Recall plumbing definitions, basic principles and general regulations.
2. List acceptable piping materials for various plumbing systems.
3. Identify materials used for water supply systems.
4. Identify materials used for building sewers and storm sewers.
5. Identify materials used for soil, waste and vent piping.
6. Explain code requirements for various joints and connections.
7. Define various plumbing traps and cleanouts.
8. Explain code regulations for traps and cleanouts.
10. List various plumbing fixtures.
11. Explain spacing requirements for fixture installation.
12. List requirements for hangers and supports.
13. Define indirect waste and special waste.
14. Explain components of water supply and distribution systems.
15. State location and purpose of control valves in water supply systems.
16. Identify methods used to protect potable water systems.
17. Compute minimum required air gap for indirect for indirect wastes.
18. Choose the correct backflow device for various potential hazards.
19. Summarize installation/testing requirements for RPZ backflow preventers.

LEARNING/TEACHING TECHNIQUES used in the course are:

- Collaborative Learning
- Problem Solving
- Student Presentations
- Creative Projects
- Interactive Lectures
- Individual Coaching
- Lecture
- Demos
- Films/Videos/Slides
- Other (describe below)
- Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:

- Reading
- Tests
- Individual Projects
- Oral Presentations
- Worksheets
- Collaborative Projects
- Textbook Problems
- Papers
- Portfolio
- Group Problems
- Term Paper
- Other (describe below)

Veteran Services: Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

The information in this course outline is subject to revision

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or via your preferred Telecommunications Relay Service.

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20. Explain methods used to disinfect potable water systems.
21. Illustrate proper water meter installation.
22. Interpret drainage system sizing charts.
23. Identify fixture unit values for various plumbing fixtures.
24. Identify minimum fixture trap and drain size for plumbing fixtures.
25. Interpret sizing charts for drainage piping.
26. Explain code regulations for drainage piping.
27. Explain vent piping requirements.
28. Interpret sizing charts for vent piping.
29. Explain vent piping terminology.
30. Summarize requirements for wet venting, stack venting and battery venting.
31. Define yoke vent and applicable requirements for yoke vents.
32. Illustrate proper island fixture venting methods.
33. Define storm sewers.
34. Compute sizes for storm sewers and rain leaders.
35. Compute available water pressure for sizing a supply system.
36. Perform calculations for sizing water supply distribution systems.
37. Design and size drain, waste and vent systems.
38. Calculate the developed length of vent piping.
39. Use code charts and calculations to size water distribution systems.
40. Perform drainage load calculations.