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 1150

NUMBER OF CREDITS: 2 (2 lab)

COURSE TITLE: Sheet Metal Technology

CATALOG DESCRIPTION: Gain experience using sheet metal tools with proper applications. Measuring and layout, pattern matching, making edges and seaming will be taught. Students will be exposed to sizing, measuring pressures, and calculating losses.

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:

LENGTH OF COURSE: Semester

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

Four goals are emphasized in course at Minnesota West Community & Technical College:
1) ACADEMIC CONTENT: The academic objectives of this course are:
   a. Demonstrate the proper use of tools and sheet metal equipment.
   b. Understand techniques for measuring, layout patterns, matching and preparing ductwork.
   c. Identifying procedures for sizing and calculating pressures.
   d. Safe use of metal preparation equipment and personal protective equipment.

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. Sheet metal fabrication for duct work preparation in accordance with Minnesota State Plumbing and HVAC code.
2. Proper use of hand tools and manual fabrication equipment.
3. Design and layout of materials to construct duct work.
4. Proper use of measuring tools and techniques.
5. Safe handling practices for metal fabrication equipment and personal protective equipment.

COURSE LEARNING OUTCOMES (GENERAL):
   a. Learn the proper use of hand tools of the trade and sheet metal fabrication equipment.
   b. Measure, layout patterns, match to construct useable ductwork.
   c. Sizing, calculating pressures, and gauge use will improve the understanding of proper duct sizing.
   d. Demonstrate safety practices in shop and job site and personal protective equipment
   e. Practical mathematical calculations.

STUDENT LEARNING OUTCOMES (SPECIFIC):
Students will:
1. Design ductwork for a heating system using a house plan.
2. Construct and assembly metal ducts.
3. Layout sheet metal elbows.
4. Determine the codes that are needed for proper installation
5. Demonstrate all types of seams and edging.
6. Use proper tools and techniques for building the ductwork.
7. Explain heating, air conditioning, and ventilation methods
8. Measure duct velocities, pressures, and duct losses in air flow
9. Use hand tools and manual fabrication equipment properly.
10. Demonstrate proper use of personal protective equipment.

LEARNING/TEACHING TECHNIQUES used in the course are:
  x Collaborative Learning       x Problem Solving
Student Presentations  Interactive Lectures
x Creative Projects  x Individual Coaching
x Lecture  Films/Videos/Slides
x Demonstrations  Other (describe below)
x Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:

x Reading  x Tests  x Individual Projects
☐ Oral Presentations  x 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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