Sheet Metal-HVAC Ducts and Fittings

Program Overview
The sheet metal worker reads blueprints, prepares layouts and operates fabricating devices such as special hand tools, power shears, nibbler, brake, bar folder, turning machines, spot and arc welders, soldering equipment and plasma cutting systems. The skilled sheet metal worker gathers general information and specifications from blueprints for the fabrication and installation of ducts for heating, cooling, filtering and humidifying air. Also, sheet metal workers fabricate and install metal roofing and siding, stainless steel equipment for homes and industry, chutes for material transfer, signs and rain dispersal equipment. Satisfactory preparation for the sheet metal program may include high school courses in algebra and geometry. Other helpful courses are mechanical drafting and metal shop. Much of the sheet metal work starts with two-dimensional objects and ends with a three-dimensional product. Sheet metal work requires good spatial perception.

Career Opportunities
According to the U.S. Department of Labor, employment of sheet metal workers in construction is expected to increase about as fast as the average for all occupations. Graduates may go to work for firms that fabricate sheet metal products and become skilled production, precision, or construction sheet metal workers.

Program Outcomes
1. Graduates will have the knowledge and skills to layout, fabricate, and assemble all types of sheet metal products.
2. Graduates will have the ability to safely operate all types of sheet metal fabricating equipment.
3. Graduates will have the knowledge and skills to complete sheet metal welding and soldering processes.
4. Graduates will have the knowledge and skills to use computer-aided drafting for the design and fabrication of sheet metal products.
5. Graduates will have the knowledge and skills to use drafting and blueprint reading to design HVAC duct systems.

Transfer Opportunities
Saint Paul College has a transfer articulation agreement between the following program and post-secondary institutions for the baccalaureate degree programs listed below. For more information please go to saintpaul.edu/Transfer.

Minimum Program Entry Requirements
Students entering this program must meet the following minimum program entry requirements:

Reading: Score of 60+ or grade of “C” or better in READ 0721
Writing: Score of 60+ or grade of “C” or better in ENGL 0921
Arithmetic: Score of 31+
Spatial assessment required: Score 50+ on spatial assessment

Assessment Results and Prerequisites:
Students admitted into Saint Paul College programs may need to complete additional courses based on assessment results and course prerequisite requirements. Certain MATH, READ, and ENGL courses have additional prerequisites.

Program Faculty
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Program Requirements
☐ Check off when completed

Special supplies, tools, and estimated costs
The list for required tools is supplied by the program advisor. The cost of tools for the program is approximately $300. Contact program faculty for more information.

Course
☐ SMET 1410 Sheet Metal Fitting Layout and Design ........................................ 4
☐ SMET 1415 OSHA 30 HR Training ........................................... 2
☐ SMET 1420 Sheet Metal Fabrication ............................................ 4
☐ SMET 1430 Sheet Metal Drafting & Blueprint Reading .................................... 2
☐ SMET 1440 Sheet Metal Welding ............................................... 5
☐ SMET 1450 Sheet Metal Practical Problem Solving ..................................... 2
☐ SMET 1510 Duct System Layout & Design ......................................... 4
☐ SMET 1520 Duct System Fabrication ........................................... 4
☐ SMET 1530 Architectural Sheet Metal ........................................... 4
☐ SMET 1540 Power Machine Operation ......................................... 3
☐ SMET 1550 Sheet Metal CAD/CAM Systems ..................................... 3

Subtotal ........................................... 37

General Education/MnTC Requirements
Refer to the Minnesota Transfer Curriculum Course List for each Goal Area
☐ Goal 1: Communication .......................................................... 7
ENGL 1711 Composition 1 – 4 cr
COMM 17XX – 3 cr
☐ Goal 3 or Goal 4 ............................................................. 6
Goal 3: Natural Sciences OR
Goal 4: Mathematical/Logical Reasoning
☐ Goal 5: History, Social Science and Behavioral Sciences ................................... 3
☐ Goal 6: Humanities and Fine Arts ............................................. 3
Select a minimum of 4 additional credits
☐ Goals 1 – 10 of the Minnesota Transfer Curriculum .................................. 4
Select a minimum of 4 additional credits

General Education Requirements ........................................... 23

Total Program Credits ........................................... 60

Program Start Dates
Fall
Full-time enrollment is required
Students must be enrolled full-time with a cohort of students. Technical courses only offered during days.

Course Sequence
The following sequence is recommended.

First Semester
SMET 1410 Sheet Metal Fitting Layout and Design .................................. 4
SMET 1415 OSHA 30 HR Training .................................................. 2
SMET 1420 Sheet Metal Fabrication .................................................. 4
SMET 1430 Sheet Metal Drafting & Blueprint Reading ..................... 2
SMET 1440 Sheet Metal Welding ................................................... 5
SMET 1450 Sheet Metal Practical Problem Solving ......................... 2
Goal 1: COMM 17XX ........................................... 3
Total Semester Credits .......................................................... 22

Second Semester
SMET 1510 Duct System Layout & Design ...................................... 4
SMET 1520 Duct System Fabrication ............................................. 4
SMET 1530 Architectural Sheet Metal ............................................. 4
SMET 1540 Power Machine Operation ......................................... 3
SMET 1550 Sheet Metal CAD/CAM Systems .................................. 3
Total Semester Credits ...................................................... 18

General Education Requirements (20 additional credits)
Total Program Credits ........................................... 60