

COURSE SYLLABUS

LAST REVIEW	Fall 2022
COURSE TITLE	Basic Sheet Metal
COURSE NUMBER	HVAC 0107
DIVISION	Career and Technical Education
DEPARTMENT	HVAC
CIP CODE	47.0201
CREDIT HOURS	2
CONTACT HOURS/WEEK	Class: 0.5 Lab: 3
PREREQUISITES	HVAC 0100

COURSE DESCRIPTION

This course will introduce students to basic methods of sheet metal fabrication. This course will include basic sheet metal bending, cutting, special tools, all types of screws, rivet assembly, and blue print reading. Students will learn the safe and proper methods of sheet metal work.

PROGRAM ALIGNMENT

This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit:

https://kansasregents.org/workforce_development/program-alignment

PROGRAM LEARNING OUTCOMES

1. The student will be able to demonstrate the ability to perform HVAC procedures in a safe manner
2. The student will be able to classify the different needs of equipment and summarize a solution.
3. The student will be able to exhibit a high level of professionalism including appropriate dress, attendance, communication skills and other soft skills necessary.

TEXTBOOKS

<http://kckccbookstore.com/>

METHODS OF INSTRUCTION

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels,

conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE

- I. Basic Sheet Metal
 - A. The Plenum System
 - B. The Extended Plenum System
 - C. The Reducing Plenum
 - D. The Perimeter Loop System
 - E. The Duct System Standards
 - F. Duct Materials
 - 1. Galvanized Steel Duct
 - 2. Fiberglass Duct
 - 3. Spiral Metal Duct
 - 4. Flexible Duct
 - 5. Combination Duct Systems
 - G. Duct Air Movement
 - 1. Takeoff fitting
 - 2. Inertia
 - H. Balancing Dampers
 - I. Duct Insulation
 - J. Blending the Conditioned Air with Room Air
 - K. The Return Air Duct System
 - L. Sizing Duct for Moving Air
 - M. Measuring Air Movement for Balancing
 - N. The Air Friction Chart
 - O. Math for Basic Sheet Metal
 - P. Measuring for Basic Sheet Metal

COURSE LEARNING OUTCOMES AND COMPETENCIES

Upon successful completion of this course, the student will:

- A. Demonstrate an understanding of duct systems.
 - 1. Explain supply air flow throughout the structural.
 - 2. Demonstrate trunk sizing.
 - 3. Demonstrate run sizing.
- B. Demonstrate an understanding of good airflow through a duct system.
 - 4. Demonstrate duct static pressure.
 - 5. Demonstrate Cubic feet per minute (CFM) air flow.
 - 6. Explain air turbulence.
- C. Demonstrate an understanding of a return air system.
 - 7. Demonstrate how to create a low pressure.

8. Demonstrate how pressure drops.
9. Demonstrate how to find temperature splits.
10. Discuss indoor air quality (IAQ).

D. Demonstrate an understanding of fractions.

11. Demonstrate addition and subtraction of fractions.
12. Demonstrate the ability to write fractions as decimals and percents.
13. Demonstrate the ability to convert fractions to decimal form.
14. Demonstrate use of a tape measure and other measuring devices.
15. Demonstrate use of basic personal safety equipment.
16. Identify and learn proper use of standard hand tools.
17. Learn safety standards for use of power shears.

ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES

Student Handbook

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

College Catalog

<https://www.kckcc.edu/academics/catalog/index.html>

College Policies and Statements

<https://www.kckcc.edu/about/policies-statements/index.html>

Accessibility and Accommodations

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.