ATIN-2020: FUNDAMENTAL INSULATION III - MECHANICAL SYSTEMS

Cuyahoga Community College

Viewing: ATIN-2020 : Fundamental Insulation III - Mechanical Systems

Board of Trustees:
October 2024

Academic Term:
Spring 2025

Subject Code
ATIN - Applied Industrial Technology - Insulators

Course Number:
2020

Title:
Fundamental Insulation III - Mechanical Systems

Catalog Description:
Classify the various Mechanical Systems relating to the insulation industry. Review Plumbing and Duct systems. Introduce and describe Chilled water, Heating water, Steam, and Cryogenic systems.

Credit Hour(s):
3

Lecture Hour(s):
3

Requisites

Prerequisite and Corequisite
Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

Outcomes

Course Outcome(s):
Describe various Mechanical Systems.

Objective(s):
1. Review HVAC Duct and Plumbing Systems.
2. Distinguish mechanical systems per bids.
3. Analyze individual mechanical systems.

Course Outcome(s):
Demonstrate Insulation Application methods per system.

Objective(s):
1. Analyze and perform the necessary applications methods for HVAC Heating pipe.
2. Analyze and perform the necessary applications methods for Chilled water pipe.
3. Analyze and perform the necessary applications methods for Steam pipe.
4. Analyze and perform the necessary applications methods for Cryogenic pipe.

Methods of Evaluation:

1. Quizzes from International
2. Tests from International
3. Final exam from International
4. Graded Projects
5. Estimation exercises
6. Homework worksheets
7. Geometric construction projects

Course Content Outline:

1. Review Previous Systems
   a. HVAC Duct
   b. Plumbing Pipe
2. HVAC Pipe
   a. Identification and recognition
   b. Temperature ranges
   c. Equipment and components
   d. Standard and non-standard systems
   e. Common materials
   f. Best application practices
3. Chilled Pipe
   a. Identification and recognition
   b. Temperature ranges
   c. Equipment and components
   d. Standard and non-standard systems
   e. Common materials
   f. Best application practices
4. Steam Pipe
   a. Identification and recognition
   b. Temperature ranges
   c. Equipment and components
   d. Standard and non-standard systems
   e. Common materials
   f. Best application practices
5. Cryogenic Pipe
   a. Identification and recognition
   b. Temperature ranges
   c. Equipment and components
   d. Standard and non-standard systems
   e. Common materials
   f. Best application practices

Resources

International Association of Heat and Frost Insulators and Asbestos Workers. *Fundamental Insulation I Piping Manual - Version 2*. International Association of Heat and Frost Insulators and Asbestos Workers, 2014.

International Association of Heat and Frost Insulators and Asbestos Workers. *Fundamental Insulation II Equipment Manual - Version 2*. International Association of Heat and Frost Insulators and Asbestos Workers, 2015.

Heat and Frost Insulators – Local 3 . *Piping Textbook*. Cleveland, OH: Heat and Frost Insulators – Local 3 , 2023.

. Heat and Frost Insulators – Local 3 Cleveland. *Duct Textbook*. Cleveland, OH: . Heat and Frost Insulators – Local 3 Cleveland, 2024.

Resources Other
www.jatctraining.com (http://www.jatctraining.com) 2024

Top of page
Key: 5269