MNT-230 Pumps and Piping Systems

COURSE DESCRIPTION:

Prerequisites: None

Corequisites: None

This course covers pump installation and maintenance and related valves and piping systems. Topics include various types of pump systems and their associated valves, piping requirements, and other related topics. Upon completion, students should be able to select and install pump and piping systems and demonstrate proper maintenance and troubleshooting procedures. Course Hours Per Week: Class, 1. Lab, 3. Semester Hours Credit, 2.

LEARNING OUTCOMES:

Upon completing requirements for this course, the student will be able to:

1. Understand the fundamental concepts of hydronic heating systems
2. Understand the properties of water
3. Familiarization with specialty valves and components of hydronic systems
4. Understand fluid flow in a hydronic system
5. Understand how to size water piping in a hydronic heating system
6. Understand pump concepts
7. Understand how to interpret pump curves and size pumps
8. Demonstrate proper maintenance and troubleshooting procedures

OUTLINE OF INSTRUCTION:

1. Fundamental Concepts
2. Hydronic Heat Sources
3. Properties of Water
4. Piping, Fittings, and Valves
5. Fluid Flow in Piping
6. Circulating Pumps
7. Expansion Tanks
8. Heat Emitters
9. Radiant Panels
10. Distribution Piping Systems
11. Air Removal, Filling, and Purging
12. Specialty Items

REQUIRED TEXTBOOK AND MATERIAL:

The textbook and other instructional material will be determined by the instructor.