

MNT 230
PUMPS AND PIPING SYSTEMS

COURSE DESCRIPTION:

Prerequisites: MAT 060, RED 090, or satisfactory score on placement test

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.

COURSE OBJECTIVES:

- a. Understand the fundamental concepts of hydronic heating systems
- b. Understand the properties of water
- c. Familiarization with specialty valves and components of hydronic systems
- d. Understand fluid flow in a hydronic system
- e. Understand how to size water piping in a hydronic heating system
- f. Understand pump concepts
- g. Understand how to interpret pump curves and size pumps
- h. 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:

Siegenthaler, John. Modern Hydronic Heating. 2nd ed. ISBN 0-7668-1637-0.

STATEMENT OF STUDENTS WITH DISABILITIES:

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 686-3696 or by visiting the Student Support Services Division in the Wynn Center.