Virginia Western Community College
AIR 200
Hydronics

Prerequisites
Complete HVACR programs or equivalent in work experience

Course Description
Presents design and installation of hydronic systems for heating and cooling. Includes steam heated and chilled water systems. Primarily concerns systems using water under forced circulation. Preparing students to become entry-level technicians. With strong emphasis on sizing, installation, service and troubleshooting.

Semester Credits: 3 Lecture Hours: 2 Lab/Clinical/Internship Hours: 2

Required Materials

Textbook:
Hydronic Heating Systems and Applications ISBN 978-1-64564-652-5

Other Required Materials:
Safety glasses will be provided by the student and are required to be worn at all times while in the lab.

Course Outcomes

At the completion of this course, the student should be able to:

- **On completion of this course, the successful student will have a general working knowledge and theory and sequence of operation of the various types of hydronic systems.**
- **Be able to identify and locate basic components and typical system construction and/or layout.**
- **Be able to use associated tools and test equipment along with measurement and/or calculation of operating conditions.**
- **Be able to recognize and troubleshoot common faults.**

Topical Description

1. **Week 1 ch.1 Human comfort and heat transfer**
2. **Week2 ch.2 Safety**
3. **Week 3 ch.3 Boilers**
4. **Week 4 ch. 4 gas burners and Ignition systems**
5. **Week 5 ch. 5 Oil systems**

6. **Week 6 ch. 6 Boiler fittings and air removal devices**
7. **Week 7 ch. 7 Hydronic piping systems**
8. **Week 8 ch. 8Boiler control and safety devices**
9. **Week 9 ch. 9 Valves**
10. **Week 10 ch. 10 Circulating pumps**
11. **Week 11 ch. 11 Terminal devices**
12. **Week 12 ch. 12 Radiant heating systems**
13. **Week 13 ch. 15 Boiler installation**
14. **Week 14 ch. 16 Boiler startup**
15. **Week 15 ch. 17 Boiler maintenance and service**
16. **Week 16 Final**

Notes to Instructors

ADA Statement (PDF)

Title IX Statement (PDF)