

**Virginia Western Community College**  
**AIR 154**  
**Heating Systems I**

**Prerequisites**

AIR 122 and AIR 238

**Course Description**

Introduces types of fuels and their characteristics of combustion; types, components and characteristics of burners, and burner efficiency analyzers. Studies forced air heating systems including troubleshooting, preventive maintenance and servicing. Part I of II.

**Semester Credits: 2 Lecture Hours: 2 Lab/Clinical/Internship Hours: 4**

**Required Materials****Textbook:**

Modern Refrigeration and Air Conditioning. 19th edition. ISBN#: 9781619601994.

**Other Required Materials:**

Safety glasses are required 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 several types of heating systems, including electric, gas, oil, hydronic and electric heat pumps.
- 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**

Week	Activity / Topic	Text Reference	Week	Activity / Topic	Text Ref.
1	Syllabus	All Units	9	Gas Heat	Unit 31
2	Electric Heat	Unit 30	10	Gas Heat	Unit 31
3	Electric Heat	Unit 30	11	Unit test / Oil Heat	Unit 32
4	Unit test	Unit 30	12	Oil Heat	Unit 32
5	Heat Pump	Unit 43	13	Geo thermal Heat	Unit 44
6	Heat Pump	Unit 43	14	Geo thermal Heat	Unit 44
7	Heat Pump	Unit 43	15	Test review	
8	Unit test / Gas Heat	Unit 31	16	Oil/Geo thermal Exam	

**Notes to Instructors**

None