



Western Technical College

## 10601107 HVACR Forced Air Heating

### Course Outcome Summary

#### Course Information

<b>Description</b>	This course emphasizes the operation, maintenance, testing and repairing of residential furnaces. Gas and oil furnaces will be covered. The learner will use hand tools and test instruments. Topics include combustion, combustion safety, venting, filters, thermostats, heat transfer, gas piping, and carbon monoxide, circulation blowers, gas conversion, furnace components and function and typical location. HVACR is a common reference to Heating, Ventilation, Air Conditioning and Refrigeration.
<b>Career Cluster</b>	Architecture and Construction
<b>Instructional Level</b>	Associate Degree Courses
<b>Total Credits</b>	4
<b>Total Hours</b>	108

#### Textbooks

*Refrigeration and Air Conditioning Technology*. 9th Edition. Copyright 2021. Whitman, Bill, Bill Johnson, John Timczyk, and Eugene Silberstein. Publisher: Cengage Learning. **ISBN-13:978-0-357-12227-3**. Required.

#### Learner Supplies

Safety glasses with side eye protection that meet Z87 OSHA guidelines. **Vendor:** Campus Shop. Required.

Uniform: One long sleeve and one short sleeve uniform shirt. **Vendor:** Campus Shop. Required.

#### Success Abilities

1. Cultivate Passion: Increase Self-Awareness
2. Live Responsibly: Foster Accountability

### **High Impact Practices**

1. Community Based Learning Project: a key learning outcome of this course is to connect academic learning and civic development while simultaneously addressing a community partner's needs, interests, or problems.

### **Program Outcomes**

1. Install HVACR systems
2. Service HVACR systems
3. Troubleshoot HVACR systems
4. Evaluate HVACR system designs

### **Course Competencies**

1. **Practice shop safety.**
2. **Explore the science of heating.**
3. **Use HVACR related tools and instruments.**
4. **Size and assemble piping systems.**
5. **Investigate the operation of a natural gas furnace.**
6. **Investigate the operation of a fuel oil furnace.**
7. **Investigate the operation of an electric furnace.**
8. **Examine the purpose and means of filtering air.**
9. **Examine the operation of thermostats.**
10. **Perform a complete heating service and problem analysis.**
11. **Apply codes and standards.**