

Master Syllabus

HVA 1401 - HVAC Mechanical & Electrical Troubleshooting

Division: Science, Mathematics and Engineering

Department: HVAC-R Engineering Technology

Credit Hour Total: 3.0

Lecture Hrs: 2.0 **Lab Hrs:** 3.0

Prerequisite(s): HVA 1201 AND HVA 1221 AND EET 1120

Date Revised: January 2015

Course Description:

Diagnostic methods of mechanical, electrical and control system problems in heating and cooling systems. Other topics include common faults and how to avoid repair failures. Two lecture, three lab hours per week.

General Education Outcomes:

- Critical Thinking/Problem Solving Competency
- Information Literacy Competency

Course Outcomes:

Component replacement procedures

Employ accepted component replacement procedures.

Assessment Method: Locally developed exams

Performance Criteria:

70% or more correct responses

Avoiding repeat failures

Describe methods for avoiding repeat failures in equipment.

Assessment Method: Locally developed exams

Performance Criteria:

70% or more correct responses

Safety controls

Describe the function and purpose of safety controls.

Assessment Method: Locally developed exams

Performance Criteria:

70% or more correct responses

Component failure rates

Identify component failure rates.

Assessment Method: Locally developed exams

Performance Criteria:

70% or more correct responses

Common mechanical and electrical problems

Identify common mechanical problems in light commercial heating and cooling equipment.

Assessment Method: Simulations

Performance Criteria:

Troubleshoot problems presented on the simulator with at least 80% accuracy

Proper troubleshooting techniques

Demonstrate proper troubleshooting techniques on equipment and systems.

Assessment Method: Behavioral observations

Performance Criteria:

Troubleshoot problems presented in equipment with at least 80% accuracy

Outline:

Common problems and their frequency
Solutions to common problems
Prevention of common problems
Data gathering before failures occur
Proper diagnostic methods
Systematic procedures for solving common problems
Monitoring equipment to aid in diagnostic methods
Proper repair procedures recommended by the HVAC industry