

Washtenaw Community College Comprehensive Report

UAT 119 HVACR Residential Technician (UA 6028) Effective Term: Spring/Summer 2018

Course Cover

Division: Advanced Technologies and Public Service Careers

Department: United Association Department

Discipline: United Association Training

Course Number: 119

Org Number: 28200

Full Course Title: HVACR Residential Technician (UA 6028)

Transcript Title: HVACR Resid Technician (6028)

Is Consultation with other department(s) required: No

Publish in the Following: College Catalog , Web Page

Reason for Submission: New Course

Change Information:

Rationale: New UAT course

Proposed Start Semester: Spring/Summer 2018

Course Description: In this course, students will focus on performance testing of residential Heating, Ventilation, Air Conditioning, Refrigeration (HVACR) equipment, measuring and analyzing of data for air flow, water flow, and electrical power input. Students will perform practical exercises on testing equipment training modules and/or functional building equipment. Upon completion, students are required to submit documentation on two field performance tests from their training center. Limited to United Association program participants.

Course Credit Hours

Variable hours: No

Credits: 1.5

The following Lecture Hour fields are not divisible by 15: Student Min ,Instructor Min

Lecture Hours: Instructor: 22.5 Student: 22.5

The following Lab fields are not divisible by 15: Student Min, Instructor Min

Lab: Instructor: 1.5 Student: 1.5

Clinical: Instructor: 0 Student: 0

Total Contact Hours: Instructor: 24 Student: 24

Repeatable for Credit: NO

Grading Methods: Letter Grades

Audit

Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Requisites

General Education

Degree Attributes

Below College Level Pre-Reqs

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Perform air (CFM) and water (GPM) flow performance testing.

Assessment 1

Assessment Tool: Skills demonstration

Assessment Date: Spring/Summer 2018

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Skills demonstration checklist

Standard of success to be used for this assessment: 90% of the students will score 100%

Who will score and analyze the data: U.A. training coordinator

2. Perform refrigerant flow and electrical power consumption testing.

Assessment 1

Assessment Tool: Skills demonstration

Assessment Date: Spring/Summer 2018

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Skills demonstration checklist

Standard of success to be used for this assessment: 90% of the students will score 100%

Who will score and analyze the data: U.A. training coordinator

Course Objectives

1. Review specific tools and their operation to properly measure CFM, GPM, refrigerant flow, and power consumption.
2. Review charts and new electronic devices for specific heating and cooling equipment to determine their CFM, GPM, refrigerant flow, and electrical power consumption.
3. Calculate CFM air flow through specific furnaces and review effects of operation if not within parameters.
4. Calculate air flow and fluid flow ratio of a hydronic coil and its effect on system operation.
5. Review refrigerant cycle and determine proper system pressures when using 410A refrigerant as well as safety precautions when measuring refrigerants.
6. Plot pump curve and calculate horsepower.
7. Measure voltage and amp draw of specific pumps and fans to determine proper operation.
8. Calculate cost efficiencies for financial savings of proper operation.

New Resources for Course

Course Textbooks/Resources

Textbooks

IPTJTC. *Start, Test, and Balance*, first ed. United Association, 2003

Manuals

Periodicals

Software

Equipment/Facilities

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
Faculty Preparer: <i>Tony Esposito</i>	<i>Faculty Preparer</i>	<i>Nov 16, 2017</i>
Department Chair/Area Director: <i>Marilyn Donham</i>	<i>Recommend Approval</i>	<i>Nov 17, 2017</i>
Dean: <i>Brandon Tucker</i>	<i>Recommend Approval</i>	<i>Dec 27, 2017</i>
Curriculum Committee Chair: <i>David Wooten</i>	<i>Recommend Approval</i>	<i>Mar 12, 2018</i>
Assessment Committee Chair: <i>Michelle Garey</i>	<i>Recommend Approval</i>	<i>Mar 28, 2018</i>
Vice President for Instruction: <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Mar 29, 2018</i>