Washtenaw Community College Comprehensive Report

UAT 136 Daikin VRV Systems (UA 6013)
Effective Term: Fall 2020

Course Cover

Division: Advanced Technologies and Public Service Careers
Department: United Association Department
Discipline: United Association Training
Course Number: 136
Org Number: 28200
Full Course Title: Daikin VRV Systems (UA 6013)
Transcript Title: Daikin VRV Systems 6013
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog
Reason for Submission: Course Change
Change Information:
Consultation with all departments affected by this course is required.
Course description
Outcomes/Assessment
Objectives/Evaluation
Rationale: Update United Association course
Proposed Start Semester: Fall 2020
Course Description: In this course, students will study the Daikin variable refrigerant volume (VRV) system, a multi-split type air conditioner that uses VRV control. Through classroom and hands-on activities, students will cover the history, installation, and VRV technology, including 401A refrigerant and the piping required. In addition, students will review the electrical and VRV control requirements, wiring, and net communications including simulation software available for use at their local 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. Identify and describe the function of the components of the Daikin VRV system and its technology.
   Assessment 1
   Assessment Tool: Oral exam
   Assessment Date: Fall 2020
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 80% of the students will score 80% or higher.
   Who will score and analyze the data: U.A. instructors

2. Demonstrate installation techniques, remote control installation, commissioning and troubleshooting of the VRV Daikin system.
   Assessment 1
   Assessment Tool: Skills demonstration
   Assessment Date: Fall 2020
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: Skills checklist
   Standard of success to be used for this assessment: 80% of the students will score 80% or higher.
   Who will score and analyze the data: U.A. instructors

3. Prepare and present Daikin VRV instructional resources including demonstrating the simulation software.
   Assessment 1
   Assessment Tool: Presentation
   Assessment Date: Fall 2020
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: Observational checklist
   Standard of success to be used for this assessment: 80% of the students will score 80% or higher.
   Who will score and analyze the data: U.A. instructors

Course Objectives

1. Compare and contrast the benefits and efficiency of VRV systems with standard cooling units.
2. Review safety procedures and personal protective equipment (PPE) associated with Daikin equipment and refrigerant.
3. Communicate and practice proper commissioning procedures needed for startup.

4. Discuss the history of refrigeration, the refrigerants used, and the advantages of variable flow.
5. Describe Daikin product, and compare and contrast similar products.
6. Describe error codes and probable causes.
7. Discuss the science behind piping installation for refrigerant flow in VRV systems.
8. Discuss installation of control wiring, including interfacing with DIII-NET communication system.
9. Explain the sequence of operating and commissioning a system.
10. Discuss installation troubleshooting techniques.
11. Locate and navigate Daikin VRV instructional resources.
12. Demonstrate the Daikin VRV simulation software.
13. Discuss best practices for instructional delivery in the classroom.
14. Prepare and present a classroom activity for use at the student's local Training Center.

New Resources for Course

Course Textbooks/Resources

Textbooks

Daiken Group . *Daikin VRV IV Service Manual and Installation & Commissioning Guide*, First ed. Daiken , 2015

Manuals

Periodicals

Software

Equipment/Facilities

Reviewer	Action	Date
Faculty Preparer:		
Tony Esposito	*Faculty Preparer*	*May 26, 2020*
Department Chair/Area Director:		
Marilyn Donham	*Recommend Approval*	*May 27, 2020*
Dean:		
Jimmie Baber	*Recommend Approval*	*May 27, 2020*
Curriculum Committee Chair:		
Lisa Veasey	*Recommend Approval*	*Jun 19, 2020*
Assessment Committee Chair:		
Shawn Deron	*Recommend Approval*	*Jun 23, 2020*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Jul 06, 2020*