

Washtenaw Community College Comprehensive Report

UAT 266 Air and Water Balance Effective Term: Spring/Summer 2014

Course Cover

Division: Advanced Technologies and Public Service Careers

Department: United Association Department

Discipline: United Association Training

Course Number: 266

Org Number: 28200

Full Course Title: Air and Water Balance

Transcript Title: Air and Water Balance

Is Consultation with other department(s) required: No

Publish in the Following: College Catalog , Web Page

Reason for Submission: Three Year Review / Assessment Report

Change Information:

Course description

Credit hours

Total Contact Hours

Outcomes/Assessment

Objectives/Evaluation

Rationale: Course update

Proposed Start Semester: Spring/Summer 2014

Course Description: In this course, UA instructors will be equipped with presentations, resources and hands-on demonstration and evaluation exercises to conduct HVAC Start-Test and Balance training as well as methods of teaching about air and water balance. The principles of teaching heat transfer and fluid flow as related to hydronic balancing and system performance as well as electrical testing and measurement will also be covered. The installation, maintenance, repair and operation of system components such as fans, pumps, duct systems and hydronic piping systems will also be discussed. Limited to United Association program participants.

Course Credit Hours

Variable hours: No

Credits: 1

Lecture Hours: Instructor: 15 **Student:** 15

Lab: Instructor: 0 **Student:** 0

Clinical: Instructor: 0 **Student:** 0

Other: Instructor: 5 **Student:** 5

Total Contact Hours: Instructor: 20 **Student:** 20

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. Demonstrate methods of teaching the central concepts of air and water balance utilizing UA approved materials.

Assessment 1

Assessment Tool: Presentation

Assessment Date: Spring/Summer 2014

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: 75% of students will achieve 75% or above.

Who will score and analyze the data: Departmental faculty

2. Demonstrate teaching practicum on the proper maintenance and repair procedures related to air and water balance equipment.

Assessment 1

Assessment Tool: Skill assessment

Assessment Date: Spring/Summer 2014

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Performance parameters with rubric

Standard of success to be used for this assessment: 75% of students will achieve 75% or above.

Who will score and analyze the data: Departmental faculty

3. Present an original lesson about HVAC topics as it pertains to fluid properties and start, test and balance concepts.

Assessment 1

Assessment Tool: Presentation

Assessment Date: Spring/Summer 2014

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: 75% of students will achieve 75% or above.

Who will score and analyze the data: Departmental faculty

Course Objectives

1. Identify the applications of air and water balancing related calculations.

Matched Outcomes

2. Recognize the importance of air and water balancing procedures.

Matched Outcomes

3. Distinguish the thermodynamics and physical properties of fluids and fluid flow.

Matched Outcomes

4. Demonstrate competencies in ductwork, piping, fans, pumps, and other related information.

Matched Outcomes

5. Demonstrate appropriate use and knowledge of course materials.

Matched Outcomes

6. Demonstrate fan analysis via comparisons of input power approximations, inlet & outlet pressures and RPM plotted on the fan curve.

Matched Outcomes

7. Demonstrate pump analysis via comparisons of dead head/impeller size info plotted on the pump curve.

Matched Outcomes

8. Explain fluid flows in pipes and ducts and compare the data to the information plotted on the fan and pump curves.

Matched Outcomes

9. Explain how to measure voltage, amperage and calculate horsepower input.

Matched Outcomes

10. Identify data defined on the pump curve.

Matched Outcomes

11. Measure hydronic flow at AHU balancing devices and measure flow via pressure drop at the inlet and outlet fittings.

Matched Outcomes**New Resources for Course****Course Textbooks/Resources**

Textbooks

Manuals

Periodicals

Software

Equipment/Facilities

Data projector/computer

Reviewer**Action****Date****Faculty Preparer:**

Amanda Scheffler

Faculty Preparer

Jun 27, 2013

Department Chair/Area Director:

Scott Klapper

Recommend Approval

Feb 03, 2014

Dean:

Marilyn Donham

Recommend Approval

Feb 05, 2014

Vice President for Instruction:

Bill Abernethy

Approve

Apr 21, 2014