

Washtenaw Community College Comprehensive Report

UAT 220 Pipe Trades Applied Mathematics Effective Term: Fall 2020

Course Cover

Division: Advanced Technologies and Public Service Careers

Department: United Association Department

Discipline: United Association Training

Course Number: 220

Org Number: 28200

Full Course Title: Pipe Trades Applied Mathematics

Transcript Title: Pipe Trade Applied Mathematics

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 U.A. course

Proposed Start Semester: Fall 2020

Course Description: In this course, students will develop methods and techniques for teaching pipe trades math for apprentices and journey workers at their local Training Centers. Students will be introduced to various teaching styles, testing and exams, as well as developing math curriculum using an online learning management system (LMS) such as Blackboard™. An emphasis will be placed on algebra and trigonometry related to the pipe trade using U.S. Standard and Metric measurements, calculated by hand, and calculated using a trade-specific calculator or application. 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. Analyze and identify techniques for teaching Trade Mathematics.

Assessment 1

Assessment Tool: Essay questions

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. Identify algebra and trigonometric properties and their applications to Pipe Trades Mathematics by hand and using the Pipe Trades Pro calculator.

Assessment 1

Assessment Tool: Outcome-related written exam questions

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: Answer key

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 lesson plan using Blackboard and online math resources.

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. Identify the six-step method of trade teaching.
2. Recognize the features of good lesson plans and elements of effective teaching styles.
3. Explain how to use a Pipe Trades Pro Calculator.
4. Discuss previous techniques for teaching trade math.

5. Compare and contrast previous teaching methods with new teaching methods.
6. Discuss engaging trade math activities for the classroom.
7. Discuss and apply dimensional and conversion functions.
8. Review and practice run, travel, and offset functions through trigonometry.
9. Complete trade math worksheets.
10. Use trigonometric functions to solve for an unknown.
11. Demonstrate use of quick keys to solve offset problems.
12. Label parts of rolling offset and calculate dimensions using algebra and trigonometry functions.
13. Open the Blackboard portal and create a course.
14. Access and utilize the United Association Online Learning Resource (UAOLR) for math resources.
15. Prepare and present a five-minute lesson plan to demonstrate teaching methods.

New Resources for Course

Course Textbooks/Resources

Textbooks

International Association of Plumbing and Mechanical Officials. *Related Mathematics*, 5th ed. IAPMO Group, 2017

Manuals

Periodicals

Software

Equipment/Facilities

Level I classroom

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
Faculty Preparer: <i>Tony Esposito</i>	<i>Faculty Preparer</i>	<i>Apr 22, 2020</i>
Department Chair/Area Director: <i>Marilyn Donham</i>	<i>Recommend Approval</i>	<i>Apr 28, 2020</i>
Dean: <i>Jimmie Baber</i>	<i>Recommend Approval</i>	<i>May 27, 2020</i>
Curriculum Committee Chair: <i>Lisa Veasey</i>	<i>Recommend Approval</i>	<i>Jul 23, 2020</i>
Assessment Committee Chair: <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Aug 25, 2020</i>
Vice President for Instruction: <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Aug 26, 2020</i>