Washtenaw Community College Comprehensive Report

UAT 275 Trade Related Trigonometry
Effective Term: Spring/Summer 2025

Course Cover

College: Advanced Technologies and Public Service Careers
Division: Advanced Technologies and Public Service Careers
Department: United Association Department (UAT Only)
Discipline: United Association Training
Course Number: 275
Org Number: 28200
Full Course Title: Trade Related Trigonometry
Transcript Title: Trade Related Trigonometry
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Web Page
Reason for Submission: Inactivation
Change Information:
    Consultation with all departments affected by this course is required.
Rationale: U.A. Course no longer relevant: course enrollment fell to two or less for two consecutive years.
Proposed Start Semester: Winter 2025
Course Description: In this course, students will learn about methods of teaching the principles of trade-related trigonometry. Following a review, students will discuss and develop skills to instruct on topics such as trigonometry, application of a right triangle, Pythagorean theorem, rolling offsets (including cut-downs/degree of roll), equal spread offsets and miter joints. Teaching techniques will be addressed and problematic areas will be discussed to provide student instructors with ideas for their own classrooms teaching. 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. Demonstrate methods of teaching the central concepts of pipe trades trigonometry.
   ### 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: Skill checklist 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

2. Demonstrate teaching practicum on the central concepts of trigonometry for pipe layout.
   ### 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

Course Objectives
1. Identify the basic trigonometry functions and principles of a right triangle.
2. Recognize how to use the Pythagorean Theorem as it pertains to the plumbing and pipefitting trades.
3. Apply trigonometry to calculate various rolling offsets, equal spread offsets and miter joints.
4. Recognize how trigonometry applies to pipe fabrication, pipe layout, tube bending, and optical survey.
5. Demonstrate operation of the Pipe Trades Pro calculator for various problems.
6. Demonstrate how a PC and EXCEL can be used for right angle trigonometry.
7. Develop and present a problem and solution using the EXCEL format.
8. Identify systematic and incremental learning approaches related to trade trigonometry.

New Resources for Course

Course Textbooks/Resources
Textbooks
Manuals
Periodicals
Software

Equipment/Facilities
Level III classroom
Other: An open classroom area to layout pipe fittings and apply measurements.

Reviewer	Action	Date
Faculty Preparer:		
Tony Esposito	*Faculty Preparer*	*Nov 01, 2024*
Department Chair/Area Director:		
Marilyn Donham	*Recommend Approval*	*Nov 04, 2024*
Dean:		
Eva Samulski	*Recommend Approval*	*Nov 06, 2024*
Curriculum Committee Chair:		
Randy Van Wagnen	*Reviewed*	*Apr 15, 2025*
Assessment Committee Chair:		
Vice President for Instruction:		
Brandon Tucker	*Approve*	*Apr 15, 2025*

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Division: Advanced Technologies and Public Service Careers
Department: United Association Department
Discipline: United Association Training
Course Number: 275
Org Number: 28200
Full Course Title: Trade Related Trigonometry
Transcript Title: Trade Related Trigonometry
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, students will learn about methods of teaching the principles of trade-related trigonometry. Following a review, students will discuss and develop skills to instruct on topics such as trigonometry, application of a right triangle, Pythagorean theorem, rolling offsets (including cut-downs/degree of roll), equal spread offsets and miter joints. Teaching techniques will be addressed and problematic areas will be discussed to provide student instructors with ideas for their own classrooms teaching. Limited to United Association program participants.

Course Credit Hours
Variable hours: No
Credits: 1
Lecture Hours: Instructor: 15 **Student:** 15
The following Lab fields are not divisible by 15: Student Min, Instructor Min
Lab: Instructor: 5 **Student:** 5
Clinical: Instructor: 0 **Student:** 0

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 pipe trades trigonometry.
     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: Skill checklist 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

2. Demonstrate teaching practicum on the central concepts of trigonometry for pipe layout.
     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

Course Objectives
  1. Identify the basic trigonometry functions and principles of a right triangle.
       Matched Outcomes
  2. Recognize how to use the Pythagorean Theorem as it pertains to the plumbing and
     pipefitting trades.
       Matched Outcomes
  3. Apply trigonometry to calculate various rolling offsets, equal spread offsets and miter joints.
       Matched Outcomes
  4. Recognize how trigonometry applies to pipe fabrication, pipe layout, tube bending, and
     optical survey.
       Matched Outcomes
  5. Demonstrate operation of the Pipe Trades Pro calculator for various problems.
       Matched Outcomes
  6. Demonstrate how a PC and EXCEL can be used for right angle trigonometry.
       Matched Outcomes
  7. Develop and present a problem and solution using the EXCEL format.
       Matched Outcomes
  8. Identify systematic and incremental learning approaches related to trade trigonometry.
       Matched Outcomes

New Resources for Course
Course Textbooks/Resources
  Textbooks
  Manuals
  Periodicals

Software
Equipment/Facilities
    Level III classroom
    Other: An open classroom area to layout pipe fittings and apply measurements.

Reviewer	Action	Date
Faculty Preparer:		
Amanda Scheffler	*Faculty Preparer*	*Feb 02, 2014*
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*