

Washtenaw Community College Comprehensive Report

UAT 261 Heat Fusion Joining of Polyethylene Pipe (UA 5017) Effective Term: Fall 2020

Course Cover

Division: Advanced Technologies and Public Service Careers

Department: United Association Department

Discipline: United Association Training

Course Number: 261

Org Number: 28200

Full Course Title: Heat Fusion Joining of Polyethylene Pipe (UA 5017)

Transcript Title: Heat Fusion Joining Pipe 5017

Is Consultation with other department(s) required: No

Publish in the Following: College Catalog , Web Page

Reason for Submission: Course Change

Change Information:

Consultation with all departments affected by this course is required.

Course title

Course description

Outcomes/Assessment

Objectives/Evaluation

Rationale: Update U.A. Course

Proposed Start Semester: Fall 2020

Course Description: In this hands-on course, students will study the theory, chemistry, applications, and procedures involved in heat fusion and electrofusion of polyethylene pipe (PE) used in the pipefitting industry. Students will join various size PE pipes in butt fusion, socket fusion, and saddle type joints using each method with emphasis on proper fusion procedures and manufacturers' recommendations. In addition, students will discuss specific courses that can be implemented at their local Training Center. The title of this course was previously Thermoplastic Fusion. 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 the proper equipment setup and procedures to make a satisfactory butt fusion joint on small diameter pipe using McElroy manual fusion equipment.

Assessment 1

Assessment Tool: 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: 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

2. Demonstrate the proper equipment setup and procedures to make a satisfactory saddle/tapping tee fusion joint using a McElroy sidewinder.

Assessment 1

Assessment Tool: 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: 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

3. Demonstrate the proper equipment setup and procedures to make a satisfactory socket fusion joint using McElroy socket fusion equipment.

Assessment 1

Assessment Tool: 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: 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

4. Demonstrate the proper equipment setup and procedures to make a satisfactory electrofusion joint using Central electrofusion equipment.

Assessment 1

Assessment Tool: 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: 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 history of polyethylene pipe and its uses in the piping industry.
2. Identify the fundamentals of plastics, socket fusion technology, and infrared fusion technology.
3. Demonstrate the processes used to operate and maintain the IR63 and IR225 machines and equipment used in heat fusion and electrofusion.
4. Demonstrate the sequence of operation of McElroy manual fusion equipment.
5. Identify characteristics of PE pipe as it relates to butt joints, socket weld, saddle fusion and electrofusion joints.
6. Review all safety requirements when operating equipment as well as the proper Personal Protection Equipment (PPE) required.
7. Demonstrate the sequence and operation of McElroy saddle fusion equipment.
8. Demonstrate the sequence of operation of McElroy socket fusion equipment.
9. Demonstrate the sequence of operation of central electrofusion equipment.
10. Discuss the chemical composition of PE pipe and the effects of the fusion process.
11. Compare and contrast the benefits and applications of heat fusion and electrofusion.
12. Demonstrate testing procedures to evaluate pipe connections.

New Resources for Course

Course Textbooks/Resources

Textbooks

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>Apr 21, 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>Aug 10, 2020</i>
Assessment Committee Chair: <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Aug 25, 2020</i>
Vice President for Instruction:		

