

Washtenaw Community College Comprehensive Report

UAT 182 Fire Pump Installation, Repair, and Maintenance (UA 7042)

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: 182

Org Number: 28200

Full Course Title: Fire Pump Installation, Repair, and Maintenance (UA 7042)

Transcript Title: Fire Pump Install Repair 7042

Is Consultation with other department(s) required: No

Publish in the Following: College Catalog , Time Schedule , Web Page

Reason for Submission: Course Change

Change Information:

Course description

Outcomes/Assessment

Objectives/Evaluation

Rationale: Course updates reflect current trends and technology in the industry.

Proposed Start Semester: Spring/Summer 2025

Course Description: In this course, students will acquire the working knowledge and skills for the installation, maintenance, and repair of the various types of Aurora and Alis-Chalmers fire pumps in accordance with the codes of the National Fire Protection Association (NFPA) 20 and 25, including personal protective equipment (PPE) per NFPA 70E. Practical and hands-on lab activities will include disassembling, detecting and troubleshooting faults as well as pump repairs and reassembling. Students will also demonstrate the use of a bearing heater and shaft laser alignment trainer. 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 disassembling and reassembling various types of fire pumps per NFPA 20 and 25 requirements.

Assessment 1

Assessment Tool: Outcome-related skills demonstration

Assessment Date: Spring/Summer 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Skills demonstration 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 use of a bearing heater.

Assessment 1

Assessment Tool: Outcome-related skills demonstration

Assessment Date: Spring/Summer 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Skills demonstration 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 V-tec laser alignment trainer.

Assessment 1

Assessment Tool: Outcome-related skills demonstration

Assessment Date: Spring/Summer 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Skills demonstration 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 troubleshooting methods and alignment processes of predetermined failures for specified pumps.

Assessment 1

Assessment Tool: Outcome-related skills demonstration

Assessment Date: Spring/Summer 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Skills demonstration 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. Review all safety procedures and PPE needed for fire pump hands-on lab.
2. Identify fire pump components using a PowerPoint presentation showing correct and incorrect installations.
3. Compare and contrast major and minor fire pump rebuilds and their costs in commercial and industrial applications.
4. Perform hands-on fire pump and driver alignment.
5. Replace bearings on fire pump motor shaft.
6. Discuss the safe disassembly and assembly of fire pumps as per each manufacturer's specifications.
7. Identify the safety lockout/tag-out procedures needed to perform maintenance on fire pumps.
8. Discuss the safe operation and PPE needed for a bearing heater.
9. Discuss the safe setup and use of the laser alignment tool.
10. Identify the following terms: pump packing, pump vibrations, and soft foot.
11. Discuss the causes of pump/driver failures and how to repair them.

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>Feb 04, 2025</i>
Department Chair/Area Director:		
<i>Marilyn Donham</i>	<i>Recommend Approval</i>	<i>Feb 07, 2025</i>
Dean:		
<i>Eva Samulski</i>	<i>Recommend Approval</i>	<i>Feb 07, 2025</i>
Curriculum Committee Chair:		
<i>Randy Van Wagnen</i>	<i>Recommend Approval</i>	<i>Jun 04, 2025</i>
Assessment Committee Chair:		
<i>Jessica Hale</i>	<i>Recommend Approval</i>	<i>Jun 09, 2025</i>
Vice President for Instruction:		
<i>Brandon Tucker</i>	<i>Approve</i>	<i>Jun 10, 2025</i>

Washtenaw Community College Comprehensive Report

UAT 182 Fire Pump Installation, Repair, and Maintenance (UA 7042) Effective Term: Fall 2020

Course Cover

Division: Advanced Technologies and Public Service Careers

Department: United Association Department

Discipline: United Association Training

Course Number: 182

Org Number: 28200

Full Course Title: Fire Pump Installation, Repair, and Maintenance (UA 7042)

Transcript Title: Fire Pump Install Repair 7042

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 description

Outcomes/Assessment

Objectives/Evaluation

Rationale: Update United Association course

Proposed Start Semester: Fall 2020

Course Description: In this course, students will develop skills for the installation, maintenance and repair of Aurora fire pumps. Hands-on activities include disassembling and reassembling of fire pumps as well as troubleshooting and repair. Students will refer to code requirements per National Fire Protection Association (NFPA) 20 and NFPA 25 for installation, repair and maintenance for fire pumps along with requirements for proper Personal Protection Equipment (PPE) per NFPA 70E. 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

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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. Disassemble and reassemble two types of Aurora fire pumps.

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 demonstration 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 proper procedure of replacing Aurora pump bearings, including proper use of bearing heater.

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 demonstration 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 troubleshooting methods and alignment process of predetermined failures of Aurora pumps.

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 demonstration 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. Review all safety procedures and PPE needed for fire pump hands-on lab.
2. Identify fire pump components using a PowerPoint presentation showing correct and incorrect installations.

3. Identify jockey pump piping and fitting arrangements using a PowerPoint presentation showing correct and incorrect installations.
4. Compare and contrast major and minor fire pump rebuilds and their costs in commercial and industrial applications.
5. Discuss the identification of and procedure for best techniques for proper troubleshooting.
6. Perform hands-on fire pump and driver alignment.
7. Replace bearings on fire pump motor shaft.
8. Practice disassembling and reassembling fire pumps per manufacturers' specifications.
9. Discuss the safe and proper use of bearing heaters.
10. Identify pump packing, pump vibration, and soft foot along with their failures, causes, and repairs.
11. Discuss the indications, causes, and repairs of pump driver failures.
12. Discuss the set-up and operation of the laser alignment tool.

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 30, 2020</i>
Department Chair/Area Director: <i>Marilyn Donham</i>	<i>Recommend Approval</i>	<i>May 07, 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 15, 2020</i>
Assessment Committee Chair: <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Jul 21, 2020</i>
Vice President for Instruction: <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Jul 28, 2020</i>