

## Washtenaw Community College Comprehensive Report

### UAT 183 Revit for Fire Protection I (UA 7025) Effective Term: Fall 2020

#### Course Cover

**Division:** Advanced Technologies and Public Service Careers

**Department:** United Association Department

**Discipline:** United Association Training

**Course Number:** 183

**Org Number:** 28200

**Full Course Title:** Revit for Fire Protection I (UA 7025)

**Transcript Title:** Revit for Fire Protect I 7025

**Is Consultation with other department(s) required:** No

**Publish in the Following:**

**Reason for Submission:** New Course

**Change Information:**

**Rationale:** New United Association Course

**Proposed Start Semester:** Fall 2020

**Course Description:** In this course, students will use Autodesk Revit Building Information Modeling (BIM) technology to create digital fire protection systems to be used at their local Training Center. Students will focus on the life safety systems used in the fire protection industry using HydraCAD for Revit. This course for virtual installation of wet and dry sprinkler systems will include subjects such as sprinkler location, hanging and bracing, system components, along with an introduction into hydraulic calculations. 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. Design a wet-pipe sprinkler system, complete with hydraulic calculations.

#### **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 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. Design a dry-pipe sprinkler system, complete with hydraulic calculations.

#### **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 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. Design an appropriate fire pump room layout using BIM technology.

#### **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 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. Discuss the history of fire systems, compare and contrast two-dimensional drawings to three-dimensional computer layouts.
2. Discuss spacing and layout of sprinklers and branch lines.
3. Discuss and create system mains and build a piping riser for a wet and dry sprinkler system. Provide hangers and bracing of the system.
4. Compare and contrast between installing the piping mains and components of wet and dry sprinkler systems.
5. Perform hydraulic calculations for water supply connections to city water mains.
6. Discuss and create connections of water supply to a fire pump detail.
7. Discuss the purpose of valve placement, and add Outside Screw and Yoke (OS&Y) valve on the suction side of the fire pump to diagrams.

8. Discuss the purpose and locations of check valves and butterfly valves needed on discharge of fire pump.
9. Compare and contrast between operating a dry and wet sprinkler systems as related to Revit BIM drawings.
10. Discuss code required components of a fire pump room layout.
11. Design a wet sprinkler piping system using BIM technology.
12. Calculate dimensions and material take-off of a dry sprinkler piping system for bid proposal.
13. Design a dry sprinkler piping system using BIM technology.
14. Calculate dimensions and material take-off of a dry sprinkler piping system for bid proposal.
15. Design a standard fire pump room layout with predetermined measurements for system calculations.

## New Resources for Course

### Course Textbooks/Resources

Textbooks  
Manuals  
Periodicals  
Software

### Equipment/Facilities

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
<b>Faculty Preparer:</b> <i>Tony Esposito</i>	<i>Faculty Preparer</i>	<i>May 19, 2020</i>
<b>Department Chair/Area Director:</b> <i>Marilyn Donham</i>	<i>Recommend Approval</i>	<i>May 20, 2020</i>
<b>Dean:</b> <i>Jimmie Baber</i>	<i>Recommend Approval</i>	<i>May 27, 2020</i>
<b>Curriculum Committee Chair:</b> <i>Lisa Veasey</i>	<i>Recommend Approval</i>	<i>Jul 15, 2020</i>
<b>Assessment Committee Chair:</b> <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Jul 21, 2020</i>
<b>Vice President for Instruction:</b> <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Jul 28, 2020</i>