Washtenaw Community College Comprehensive Report

UAT 152 Utilizing Jobsite Technology (UA 3050)
Effective Term: Fall 2020

Course Cover

Division: Advanced Technologies and Public Service Careers
Department: United Association Department
Discipline: United Association Training
Course Number: 152
Org Number: 28200
Full Course Title: Utilizing Jobsite Technology (UA 3050)
Transcript Title: Utilizing Jobsite Tech 3050
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 be introduced to current technology and equipment being used in construction projects. Students will perform hands-on demonstrations that include reality capture cameras, 3-D laser scanners, and robotic total station layout, as well as current tool and mobile technologies for the jobsite. In addition, students will review field-related augmented reality and compare cost return on investment (ROI) of this technology to standard practices in construction. 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. Explain the documentation process for the different phases of a construction project using reality captured devices.
   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: 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. Demonstrate hanger layout utilizing a total robotic station.
   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. Identify and describe the application of current mobile technology devices available in the construction industry.
   Assessment 1
   Assessment Tool: Oral quiz
   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: 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

Course Objectives

1. Define vocabulary and acronyms associated with jobsite technology.
2. Demonstrate uses of Autodesk software programs: AutoCAD, Navisworks, BIM 360, Fabrication.
3. Identify uses of electronic surveying and Quality Assistance/Quality Control (QA/QC) equipment used on jobsites, such as total stations and laser scanners.

4. Utilize augmented reality, virtual reality, and 3D simulation in the classroom.
5. Identify the connections between tablets, computers, and software with their uses in jobsite productivity.
6. Discuss the applications of cutting-edge technology such as drones and 3D printers.
7. Identify the existing problems that hinder jobsite productivity, responsibility, and accountability.
8. List different types and the operation of reality capture devices in construction.
9. Compare and contrast technology device applications per jobsite scenarios.
10. Describe the process for capturing a digital twin model using a reality capture device.
11. Compare and contrast the use and operations of total robotic stations.
12. Identify the control points for the hanger layout area.
13. Use the total robotic station prism to accurately lay out the hangers of a given area.
14. Discuss current mobile devices and their applications in the industry today.
15. Compare and contrast current mobile technology solutions to those of the past.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Computer workstations/lab
Data projector/computer

Reviewer	Action	Date
Faculty Preparer:		
Tony Esposito	*Faculty Preparer*	*Jul 14, 2020*
Department Chair/Area Director:		
Marilyn Donham	*Recommend Approval*	*Jul 14, 2020*
Dean:		
Jimmie Baber	*Recommend Approval*	*Jul 14, 2020*
Curriculum Committee Chair:		
Lisa Veasey	*Recommend Approval*	*Jul 15, 2020*
Assessment Committee Chair:		
Shawn Deron	*Recommend Approval*	*Jul 21, 2020*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Jul 28, 2020*