Washtenaw Community College Comprehensive Report

UAT 193 Robotic Total Station (RTS) Layout Basics (UA 3045)
Effective Term: Fall 2024

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: 193
Org Number: 28200
Full Course Title: Robotic Total Station (RTS) Layout Basics (UA 3045)
Transcript Title: RTS Layout Basics (UA 3045)
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 2024
Course Description: In this course, students will learn the basics of Robotic Total Station (RTS) systems as they apply to Trimble®, Leica®, and Topcon® manufacturers. Topics include basic setup, layout, and quality control. Additional topics include verifying surveyed control points and establishing building control points to other levels of the structure. Hands-on applications using current software and equipment will be emphasized as students load model files as well as points files into the Total Station Tablets for each manufacturer. This is a required course towards UA RTS Certification. 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. Identify the similarities and differences in the application and operation of RTS units per manufacturers' recommendations.
   Assessment 1
   Assessment Tool: Outcome-related written exam questions
   Assessment Date: Fall 2024
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: Answer key
   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 setup, layout, and quality assurance/control for each manufacturer's robotic total station unit.
   Assessment 1
   Assessment Tool: Outcome-related demonstration
   Assessment Date: Fall 2024
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: 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 ability to lay out points with various RTS units accurately within a given time frame.
   Assessment 1
   Assessment Tool: Outcome-related demonstration
   Assessment Date: Fall 2024
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: 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 the components and uses of various manufacturers' RTS units.
2. Compare and contrast different manufacturers' RTS units.
3. Explain different types of control setups and their uses within manufacturers' recommended tolerances.
4. Discuss the role of control points and tolerances in the setup process of each RTS manufacturers.
5. Complete a setup with each different RTS unit and layout points with accuracy and speed.
6. Demonstrate the ability to troubleshoot and solve minor setup issues with various RTS units.

7. Identify techniques to accurately and quickly layout points with various RTS units.
8. Demonstrate proper positioning and posture for handling the prism pole for each RTS unit.
9. Discuss the various methods of efficiently setting control points in a building.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Reviewer	Action	Date
Faculty Preparer:		
Tony Esposito	*Faculty Preparer*	*Jan 30, 2024*
Department Chair/Area Director:		
Marilyn Donham	*Recommend Approval*	*Feb 01, 2024*
Dean:		
Eva Samulski	*Recommend Approval*	*Feb 18, 2024*
Curriculum Committee Chair:		
Randy Van Wagnen	*Recommend Approval*	*May 17, 2024*
Assessment Committee Chair:		
Jessica Hale	*Recommend Approval*	*May 20, 2024*
Vice President for Instruction:		
Brandon Tucker	*Approve*	*May 30, 2024*