**MOHAWK VALLEY COMMUNITY COLLEGE**

**UTICA-ROME, NY**

**COURSE OUTLINE**

 **CT 251 Elementary Surveying Credit Hours: C -2, P -3, ILS -0, CR -3**

1. COURSE DESCRIPTION:

This course introduces surveying methods and theory relative to civil engineering and construction. Topics include proper note-keeping, setup and handling of

equipment, leveling, and horizontal distance measurement. Fieldwork includes the use of measurement equipment, differential leveling, total stations, and the Global Positioning System {GPS).

**Course Prerequisites/Corequisites: CT 141 Introduction to Civil Engineering Technology**

1. STUDENT LEARNING OUTCOMES:

Upon completion of this course, students will be able to:

1.Prepare accurate and legible notes in a field book in accordance with provided format specifications.

2.Demonstrate the ability to measure the elevation difference and horizontal distance between two points.

3.Perform traverse computations involving horizontal angles, azimuths, and

bearings.

4.Demonstrate the ability to collect and process data using GPS.

5.Demonstrate the ability to generate project deliverables using Autodesk Civil3d.

6.Function effectively as a member of a team.

1. MAJOR TOPICS:

Week

1. 1 Course introduction/overview
2. Surveying mathematics -units, significant figures, trigonometry, etc.
3. Errors -theory and analysis, error propagation
4. Leveling & Steel Tape
5. Exam 1 & Electronic distance measurement
6. Angles, Azimuths, and Bearings
7. Total Stations
8. Introduction to GPS
9. Basic GPS Operations
10. Exam 2
11. GPS Data Collection & Processing
12. GPS Data Collection & Processing
13. Advanced GPS Operations
14. Advanced GPS Operations
15. Exam 3