Prepared by: Alan Chace

Spring 2013

MOHAWK VALLEY COMMUNITY COLLEGE

UTICA-ROME, NEW YORK

ENGINEERING TECHNOLOGIES AND THE TRADES DEPARTMENT

COURSE OUTLINE

I. CATALOG DESCRIPTION:

CT254 Surveying 4 C‑0, P‑8, Cr.4

This course includes precision calculation techniques with extensive

exposure to statistics, coordinate geometry, 3-D coordinate transformations, tree identification, advanced stakeout and data collection technologies using total stations and Real Time GPS, as well as Computer Assisted and automated drafting.

Prerequisite: CT253 Surveying 3 or permission of instructor

II. MATERIALS:

Text: 1) Elementary Surveying, 13th Edition, by Wolf and Ghiliani

2) Trees by Harlow

III. COURSE OBJECTIVES:

The purpose of this course is to familiarize Surveying

Technology students with land surveying calculations,

techniques, and problems not covered in previous courses but

still found in New York State and other states in the United

States.

Object of the practicum period is to provide intense exposure

to:

1) The data reduction/processing of information collected

during Surveying 3.

2) The calculation methods used to adjust/utilize and map high‑order

surveying information.

3) Higher‑order surveying field measurement systems not

previously covered.

IV. STUDENT LEARNING OUTCOMES:

1. Students shall demonstrate hands on proficiency with the use of total stations and data collector.
2. Students shall demonstrate proficiency with Computer Assisted Mapping and automated mapping techniques.
3. Students will learn the statistical analysis of Surveying error, and the methods of adjustment of that error.
4. Students will learn the basic techniques of Real Time GPS surveying.
5. Students will obtain a basic background in dendrology and tree identification.

V. DETAILED COURSE OUTLINES

Week Topic Reading Homework Lab (schedule will vary)

1 Error Chapter 3 C3, 2,3,6,11,16,25a,27a Analysis of Sunshots

2 EDM’s Chapter 6 C6, 1,20,24,27,37 Total Station Calibration

3 Triangulation/Trilateration C19 to section 13. TBA Deed Research

4 Total Stations Chapter 8 C8, 3-8,12,20,30,31 Test one, Intro to Carlson

5 Coordinate Geometry Chapter 11 C11,1,7,9,15 Stakeout of Carlson Lab

6 “ “ C11, 17,18,21,36,37 Intro to Data Collection

7 Automated Mapping Handouts Mining Claims Lab Project Reconnaisance

8 Line Fitting Chapter 21 Per handout Midterm Examination

9 Data Collection Handouts per handout Automated Topography

10-11 Fieldwork on Class Project Data Collection and Reduction

* 1. Office work and Mapping of Class Project CAD Mapping, Test Two

1. Tree Identification

14 Tree Identification Harlow, 1st half RTK lab (hopefully)

15 Course Review Final Exam

It needs to be emphasized that the actual lab schedule will differ greatly from this outline, due to the nature of the class project and weather limitations.

**DISABILITY STATEMENT**

I would appreciate hearing from anyone in the class who has any type of disability (e.g., physical, learning, psychiatric, vision, hearing, etc.) which may require some special accommodation. Please see me during my office hours so that we can discuss your needs. Before services can begin, you must also contact Lynn Igoe, Coordinator of Disability Services, 792-5413 (Voice or TTY), or the college Learning and Assistive Technology Specialist,731-5702; both are located in Room 153 of the Academic Building on the Utica Campus. **(For classes on the Rome Campus, the contact person is Michael Badolato, PC A30, 334-7718).** They are the staff members who review your documentation, determine eligibility for accommodations, and help determine what those accommodations will be.

# COURSE NAME: \_\_\_CT254 \_\_\_\_Surveying 4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## **DATE FACULTY NAME CHANGE INPUT MEASUREMENT ASSESSMENT ACTION**

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| 2007 | Chace | New XYZ works data collectors. |  |  |  |  |
| 2009 | Chace | Robotic Total Station Demo. |  |  |  |  |
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