MOHAWK VALLEY COMMUNITY COLLEGE

UTICA & ROME, NEW YORK

SCHOOL OF SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS - CAREER

COURSE OUTLINE

Surveying 1

CT 151

REVIEWED AND FOUND ACCEPTABLE BY MIKE SISTI – 24 AUG 2022

### MOHAWK VALLEY COMMUNITY COLLEGE

### UTICA AND ROME, NEW YORK

CENTER FOR SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS

COURSE OUTLINE

1. CATALOG DESCRIPTION

CT 151 SURVEYING 1 C-2, P-4, Cr-4

This course introduces surveying, and includes the topics in the care and use of surveying instruments, field note procedures, land surveying, topographic surveying, construction surveying, and mapping from field notes. Fieldwork includes the use of measurement equipment, levels, transits, theodolites, total stations, Global Positioning Systems (GPS).

Course Co-requisite**:** MA 121 Fundamentals of College Mathematics 1

1. MATERIALS:

Text: Elementary Surveying, An Introduction to Geomatics, 14th ed.,

 C. Ghiliani, Pearson Publishing

Tools: A scientific calculator, with trig and exponential functions,

 and a decimical degrees to degrees, minutes, and seconds

 button. Engineering scale. Two small drafting triangles. 3H
 lead pencil.

1. STUDENT LEARNING OUTCOMES:
2. The student will demonstrate the understanding of the care and use of levels, theodolites, and total stations. (1)
3. The student will apply class theory through the use of total stations and GPS equipment. (1, 4)
4. Students will demonstrate the use of the proper format of Surveying note keeping. (3)
5. Students will solve problems using the basics of algebra, trigonometry, linear coordinate geometry and area calculations.(1)
6. Students will demonstrate basics of construction staking techniques. (4)

6. Students will analyze and differentiate between mistakes and error and which errors may be adjusted and follow up by adjusting said errors. (1, 4)

IV. DETAILED COURSE OUTLINE:

 READING/

WEEK TOPIC LAB CHAPTER ASSIGNMENTS

1. Introduction,

Trigonometry Pacing, Taping Trig handouts per handout

2.Notekeeping, History Auto Levels C2 C1, 2-5; C2, 17-20,24

3. Units and Significant Figures Auto Levels C2 C2,1,2,6,7,13,14,15

4. Exam 1, Leveling Theodolites C4, pp. 69-92 C4, 2,3,6

5. Taping Taping Traverse C6, pp.127-141 per handouts

 Apx. A, pp.884-886

6. Directions of Lines Traverse Reduction C7 C7, 1,3,6,8,15,17

7. Midterm Exams Total Stations C8 C8,1,3,4,12, 20-22

8. Basic Coordinate Geometry Topo Field Work C11 pp. 268-280 C11,1,2,9,13,15

9. Cartography, Ethics Topo Office work Handouts per Handouts

10. Errors and Statistics Topo Office Work C3,pp.43-60 C3, 3-

 6,11

11. Traverse Computations Traverse Fieldwork C10 C10, 1-

 3,5,9-11

12. Exam, Total Stations Traverse Computation C9 C10, 9-11

13. Area Calculations GPS labs C12 C12,

 7,21

14. GPS GPS labs C13 pp320-339 none

15. Course Review Field/Laboratory Exams

COURSE NAME: Survey 1, CT 151

DATE FACULTY NAME CHANGE INPUT MEASUREMENT ASSESSMENT ACTION

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Fall 2009 | Chace | Topo lab changed to using Total Stations |  |  |  |  |
| Fall 2010 | Chace | Wolfpack Lab incorporated |  |  |  |  |
| Fall 2014 | Chace | Textbook changed, new homework questions throughout semester |  |  |  |  |
| Fall 2014 | Chace | Wolfpack dropped, Copan added |  |  |  |  |
| 2020 | M Sisti | Updated ETAC-ABET criteria |  |  |  |  |
| 24 Aug 2022 |  | Reviewed for format |  |  |  |  |
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