

I. Course Overview:

Upon successful completion of this course, the students should be able to describe and demonstrate the duties of the rodman and chainman in basic field surveying and use the transit and level according to accepted professional standards with a high degree of accuracy.

II. Units:

Unit 1. Rodman Duties

General Outcome:

- 1.0 The students should be able to demonstrate a proficiency in the basic concepts of leveling, including the use of level rods.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 1.1 Describe the use of level rods.
- 1.2 Demonstrate the proper use of the Philadelphia rod, including proper waving action.
- 1.3 Describe safety precautions to be followed when working in traffic.

Unit 2. Chainman Duties

General Outcome:

- 2.0 The students should be able to demonstrate a proficiency in the basic concepts of measuring distances, including the use of the steel chain.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 2.1 Demonstrate the use and maintenance of taping equipment.
- 2.2 Demonstrate various procedures for improving accuracy in measuring distances.
- 2.3 Describe safety precautions to be followed when working in traffic.

Unit 3. Use of the Transit

General Outcome:

- 3.0 The students should be able to demonstrate a proficiency in the basic concepts and use of the open frame and optical plumb transits.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 3.1 Describe the use of the open frame and optical plumb transits.
- 3.2 Describe proper procedures for the maintenance of transits.
- 3.3 Describe procedures for improving accuracy when using transits.

Unit 4. Use of the Level

General Outcome:

- 4.0 The students should be able to demonstrate a proficiency in the basic concepts and use of the automatic level.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 4.1 Describe the use of the automatic level.
- 4.2 Describe proper procedures for the maintenance of the automatic level.
- 4.3 Describe procedures for improving accuracy when using levels.

Unit 5. Topographic Surveys

General Outcome:

- 5.0 The students should be able to demonstrate a proficiency in the basic concepts of topographic surveys including field work.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 5.1 Describe the procedures for locating points and lines as required in standard topographic surveys.
- 5.2 Describe the procedures for conducting a topographic survey, using the radiation method.
- 5.3 Describe the procedures for mapping, using stadia.