
MIDDLESEX COUNTY COLLEGE

COURSE SYLLABUS

Department:	Engineering Technologies
Program:	Civil Engineering Technology
Course Number:	CIT 205
Title of Course:	Construction Surveying II
Curriculum Coordinator:	Daniel Grek
Designation:	Required Course

Course Description:

A continuation of Construction Surveying I with emphasis on the methods of layout of construction projects. Topics include: traverse computations and adjustment; control surveys for topography; N.J. State Plane Coordinates: horizontal and vertical curve calculations and stakeout methods; radial stakeouts; pipeline and utility stakeouts; road and street stakeouts; building stakeouts; earthwork calculations and Right of Way acquisition computations. Laboratory exercises demonstrate and reinforce these topics. Computer software is available to aid in the computations.

Prerequisite:

CIT 104 Construction Surveying I

Co-requisite:

None

Textbooks and /or other required material:

Elementary Surveying by Ghilani and Wolf, Pearson, 15th Ed

Course Learning Outcomes and their relationships to Student Outcomes:

1. Recognize, define and explain common surveying terms and symbols.
2. Use traditional and modern surveying equipment for measurement of horizontal distances within a specified degree of accuracy, and compute appropriate corrections. **(SO 1)**
3. Compute accuracies for horizontal and vertical distance measurements.
4. Maintain a set of neat and legible surveying field notes in acceptable format. **(SO a)**
5. As a team, set up and use an automatic level and read a level rod; close a benchmark leveling circuit within a specified degree of accuracy. **(SO d)**
6. Perform profile and topographic leveling surveys; plot elevation data as ground profiles and contour lines using CAD software for mapping.
7. Use a total station for electronic measurement of horizontal and vertical angles; close the horizon at a survey station.
8. Understand the general theory and use of positioning with GPS.
9. Understand construction staking and preparation of cut sheets.

10. To relate this information to other courses and real world situations.

Topics Covered:

- Traverse Adjustments
- Control Surveys
- Field Methods for Topographic Mapping
- Coordinate Geometry
- State Plane Coordinates
- Horizontal Curve Calculations
- Vertical Curve Calculations
- Curve Stakeouts
- Radial Stakeouts
- Pipeline and Utility Stakeouts
- Road and Street Stakeouts
- Building Stakeouts
- Earthwork Calculations
- R.O.W. and property calculations

Lab Topics Covered:

- Controls Surveys
- Field Methods for Topographic Mapping
- Curve and Radial Stakeouts
- Pipeline, Utility, Road, and Street Stakeouts
- Building Stakeouts, and Earthwork
- R.O.W. & Property Calculations

Class/Laboratory schedule. Number of sessions each week and duration of each session:

3 lecture hours per week for 14 weeks

2 Laboratory hours per week for 14 weeks

Criterion 5 Contribution: Technical Content

Prepared By:	Edelson	Date:	9/16/08
Updated By:	B. Brevard (removed C.O. 1 & 2)	Date:	1/26/11
Rev 2:	Edelson Update mapping to 2014-2015 ABET student outcomes	Date:	4/8/14
Rev 3:	Carballo Learning outcome comprise CIT104 & CIT105 for FA14 & SP15 semester. They will be broken up for the following semesters. New instructor updated outcomes. Outcomes have been mapped to 2014-2015 Student outcomes.	Date:	9/22/14
Rev 4:	General Update	Date:	3/15/21