

CNST-2560: LAND DEVELOPMENT SYSTEMS

Cuyahoga Community College

Viewing: CNST-2560 : Land Development Systems

Board of Trustees:

December 2023

Academic Term:

Fall 2024

Subject Code

CNST - Construction Engineering Tech

Course Number:

2560

Title:

Land Development Systems

Catalog Description:

Advanced surveying topics including section and subdivision lines and residential properties. Reestablishment of property boundaries and legal considerations for boundary descriptions, including local municipal records. This course involves the development of preliminary plats, detailed plans, and a final plat in accordance with conveyance standards.

Credit Hour(s):

3

Lecture Hour(s):

2

Lab Hour(s):

2

Requisites

Prerequisite and Corequisite

CNST-1410 Architectural CAD I, and CNST-2110 Basic Survey Practices; or department approval.

Outcomes

Course Outcome(s):

Explain common reference systems used in Ohio and perform traverse calculations.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Explain reference systems and perform computations to convert between World Geodetic System to State Plane Coordinate System.
2. Explain the relevance of the History of Ohio Lands and Original Public Land Surveys to the surveyor.
3. Perform traverse closure calculations, error of closure, and traverse adjustments.
4. Perform traverse reduction and adjustments.

Course Outcome(s):

Create final record plat.

Essential Learning Outcome Mapping:

Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Explain retracement of Public Land Surveys.
 2. Explain land conveyance systems.
 3. Demonstrate subdivision of private lands, survey drawings, and legal description preparation.
 4. Prepare a sketch plat, preliminary plat, and development plan.
 5. Prepare a final record plat.
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Methods of Evaluation:

1. Exams
2. Quizzes
3. Homework
4. Laboratory Activities

Course Content Outline:

1. Traverse closure calculations, error of closure and traverse adjustments
 - a. Review of closure and error calculations
 - b. Comparison with type of survey and error allowed
 - c. Adjustments calculations review
 - d. Ohio Revised Code and Ohio Administrative Code allowances
2. Traverse reduction and adjustments
 - a. Comparison against standards
 - b. Applying adjustments
3. Basic geodesy, reference systems, and State Plane Coordinate Systems
 - a. Review of different reference systems used on earth
 - b. Converting between State Plane Coordinate Systems and World Geodetic Systems
 - c. Vertical Datums (Mean Sea Level, County Specific, International Great Lakes Datum, etc.)
4. Relevance of the History of Ohio Lands and Original Public Land Surveys to the Surveyor
 - a. Summary of Ohio Land Grants
 - b. County Records
 - c. Metes and Bounds
 - d. Grid System by Land Grant
5. Retracement of Public Land Surveys
 - a. Monuments
 - b. Methods of Re-establishing Monuments
 - c. Base, Township, Range, Sections, and Corners
 - d. Numbering
6. Land Conveyance Systems
 - a. State Standards and Minimum Requirements
 - i. Ohio Revised Code Requirements
 - ii. Ohio Revised Administrative Code Requirements
 - b. Types of Deeds
 - c. County Requirements
7. Subdivision of Private Lands, Survey Drawing and Description Preparation
 - a. Types of subdivision of land
 - b. Survey Drawing Requirements
 - c. Preparing a legal description
 - d. Plat requirements
8. Sketch Plat, Preliminary Plat and Development Plan Preparation
 - a. Plat Requirements
 - b. State and county standards
 - c. Initial sketch
 - d. Preparation of Development/Subdivision Plans
 - e. Additional components of a development plan
9. Final Record Plat Preparation

- a. Checklist of requirements
- b. Preparing preliminary plat
- c. Submission requirements for recording

Resources

Ghilani, Charles D. (2021) *Elementary Surveying: An Introduction to Geomatics*, Pearson.

Robillard, Walter G. & Donald Wilson . (2013) *Brown's Boundary Control and Legal Principles*, Wiley.

Resources Other

Cuyahoga County Transfer & Conveyance Standards (2023) <https://fiscalofficer.cuyahogacounty.us/en-us/transfer-conveyance-standards.aspx>

Cuyahoga County Fiscal Officer Recorded Documents Database (2023) <https://cuyahoga.oh.publicsearch.us/>

Cuyahoga County GIS (2023) <https://gis.cuyahogacounty.us/html5viewer/?viewer=cegis>

Ohio Revised Code (2023) <https://codes.ohio.gov/ohio-revised-code>

Ohio Administrative Code (2023) <https://codes.ohio.gov/ohio-administrative-code>

Cuyahoga County Right-of-Way Plats (2022) <https://fiscalofficer.cuyahogacounty.us/en-US/PlatSearch.aspx>

Top of page

Key: 5122