

SOUTHEAST COMMUNITY COLLEGE
ADVANCED TECHNOLOGIES AND SKILLED TRADES DIVISION
Land Surveying/GIS/Civil Engineering Technology Program
Revision Date: March 2026

I. CATALOG DESCRIPTION

Course Number: LSCE2626
Course Title: Advanced Civil CAD
Corequisite(s): LSCE2526
Catalog Description: Using AutoCAD Civil 3D software, complete drawings using survey field notes, legal descriptions, and city plat drawings. Draw up a boundary survey.
Credit Hours: 3.0
Class Hours: 15
Lab Hours: 90
Total Contact Hours: 105

II. COURSE OBJECTIVES: *Course will:*

- A. Disseminate the difference between a dependent resurvey and an official survey record drawing.
- B. Compute the area of a closed traverse using the DC 50 software.
- C. Determine how to draw a parcel of property using survey field notes and legal descriptions.
- D. Illustrate all the requirements of those items needed on property drawings.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Follow civil and survey drafting regulations.
 - 2. Show proper information required on all drawings.
 - 3. Properly annotate section corners in legends.
 - 4. Properly interpret field notes from past dependent resurveys, official survey records, plat notes, and student field books.
 - 5. Create a CAD drawing using dependent resurvey information and field notes.
 - 6. Create a CAD drawing using proper surveying annotations.
 - 7. Create a CAD drawing using field notes from an Official Survey Record.
 - 8. Calculate coordinates using field notes from an Official Survey Record.
 - 9. Draw a tract of land from legal descriptions.
 - 10. Draw a subdivision plat from legal descriptions and survey record.
 - 11. Calculate bearing, bearing intersect using HP50 DC50 software.
 - 12. Prepare a scale drawing from interpretation of legal description.
 - 13. Research internet for GIS drawings available.
 - 14. Use HP50 DC50 COGO software to determine closed traverse precision.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO #6: Career and Life Skills
Outcome 4: Use digital technology effectively to access, manage, integrate, evaluate, and present information.

IV. COURSE CONTENT/UNITS OF INSTRUCTION

- A. Unit 1- Lake Ann & Boot Lake Drawing from Field Notes
- B. Chapter 11: Pipe Networks
- C. Unit 2- Dependent Resurvey, Lancaster County
- D. Unit 3- Official Survey Record, Lancaster County
- E. Chapter 12: Pressure Networks
- F. Unit 4- Tract by Description Area
- G. Unit 5- Subdivision Plats
- H. Chapter 13: Working with Plan Production Tools and Data Shortcuts
- I. Unit 6- Floodway Schematic
- J. Unit 7- City Plats

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s): Exploring AutoCAD Civil 3D 2023 12th Edition, CADCIM Technologies, ISBN 978-1-64057-150-1
- B. Other Resources:
 - 1. Storage Device

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 - 1. Lectures
 - 2. Classroom demonstrations
 - 3. Classroom discussions
 - 4. Hands-on lab projects
 - 5. Lab demonstrations
 - 6. Lab assistance
 - 7. Instructional handouts

VII. METHODS OF EVALUATION

- A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 - 1. Assignment Worksheet
 - 2. Drawings
 - 3. Tests
 - 4. Participation

VIII. SPECIFIC COURSE REQUIREMENTS

- A. A minimum grade of “C” or higher is required in all courses designated or starting with LSCE to progress through or graduate from the program.
- B. Cell phones must be silenced and put away during class. Cell phone usage during class that is not approved will result in dismissal from class for the day and counted as an absence. Any use of ear buds or headphones during class will result in the same action.