

SOUTHEAST COMMUNITY COLLEGE
ADVANCED TECHNOLOGIES AND SKILLED TRADES DIVISION
Land Surveying/GIS/Civil Engineering Technology Program
Revision Date: August 2025

I. CATALOG DESCRIPTION

Course Number: LSCE1120
Course Title: Plane Surveying
Prerequisite(s): None
Catalog Description: Study of the use of surveying instruments and equipment. Includes units on measurement, beginning instrument use, field notes, taping procedures. Care of surveying instruments and surveying safety. Applications of trigonometry. Calculations of lengths of boundaries and elevation changes.
Credit Hours: 3.0
Class Hours: 23
Lab Hours: 68
Total Contact Hours: 91

II. COURSE OBJECTIVES: *Course will:*

- A. Demonstrate procedure to set-up a level, input level notes on a field book and meet the vertical precision requirements.
- B. Illustrate with accuracy, their pace distance. Match terms related to surveying with the correct definitions.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Define the term “surveying”.
 - 2. Distinguish between the two classifications of surveying.
 - 3. Match the different types of surveys with their appropriate descriptions.
 - 4. Complete statements concerning the proper procedure for setting up a leveling instrument.
 - 5. State equivalencies for various surveying measurements.
 - 6. Convert bearings to azimuths and azimuths to bearings.
 - 7. State the correct rule for converting back directions for either bearings or azimuths.
 - 8. Calculate bearings and azimuths from interior angles.
 - 9. Calculate bearings and azimuths from deflection angles.
 - 10. Convert bearings and azimuths into interior angles.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO #3: Critical Thinking & Problem Solving
Outcome 1: Collect, identify, interpret and analyze data.

IV. CONTENT/TOPICAL OUTLINE

- A. Unit 1
 - 1. Introduction to Surveying
 - 2. Surveying Measurements/Errors
 - 3. Surveying Field Notes
- B. Unit 2 Vertical Measurements
- C. Unit 3 Distance Measurements

D. Unit 4 Angles, Azimuths, & Bearings

V. INSTRUCTIONAL MATERIALS

- A.** Required Text(s): Charles D. Ghilani, *Elementary Surveying: An Introduction to Geomatics*
- B.** Other Resources: Handouts supplied by instructor when required.
- C.** Supplies: Scientific Calculator/Drafting tools when required.

VI. METHODS OF PRESENTATION/INSTRUCTION

- A.** Methods of presentation typically include a combination of the following:
 - 1.** Lecture
 - 2.** Classroom discussion
 - 3.** Videos
 - 4.** Demonstration
 - 5.** 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 Worksheets
 - 2.** Tests
 - 3.** 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.