

SOUTHEAST COMMUNITY COLLEGE
ADVANCED TECHNOLOGY AND SKILLED TRADES DIVISION
Geographic Information Systems Technician Program
Revision Date: November, 2025

I. CATALOG DESCRIPTION

Course Number: GIST 2130
Course Title: Location-based GIS Applications
Prerequisite: None
Catalog Description: This course introduces location-based GIS applications. The principles of global positioning systems (GPS) and the integration of GPS into geographic information systems (GIS) will be examined. Students will use data-driven maps to perform data collection and editing, find assets and information with their mobile device.
Credit Hours: 3
Class Hours: 45
Lab Hours: 0
Total Contact Hours: 45

II. COURSE OBJECTIVES: *Course will:*

- A. Introduce students to GPS technology and GPS concepts.
- B. Provide information on the GPS signal, and its processing by the receiver.
- C. Describe techniques by which GPS obtains position, velocity and time.
- D. Identify methods for data collection.
- E. Discuss configuring layers and maps for data collection.
- F. Demonstrate methods for processing data collection.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Define best practices for data collection.
 - 2. Complete field reconnaissance for preparation of data collection.
 - 3. Demonstrate data collection and processing.
 - 4. Edit data after collection.
 - 5. Import data into GIS.
 - 6. Create maps from data collected.
- 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 (*course outline may provide more detailed information*)

- A. Mobile apps for data collection
- B. Geographic Reference Systems
- C. Data capture
- D. Importing data into GIS software
- E. Processing data
- F. Editing data
- G. Creation of maps

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s): TBD Fu, Pinde, Getting to Know Mobile GIS, 1st ed., Esri Press, 2025, ISBN: 9781589488083

- B.** Other Resources: Smartphone with a data plan. Ability to download apps to phone.

VI. METHODS OF PRESENTATION/INSTRUCTION

- A.** Methods of presentation typically include a combination of the following:
- 1.** Module overviews
 - 2.** Video presentations
 - 3.** Readings and resources

VII. METHODS OF EVALUATION

- A.** Methods of evaluation typically include a combination of the following:
- 1.** Assignments
 - 2.** Discussions
 - 3.** Projects
 - 4.** Quizzes/Exams