

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Geographic Information Systems Technician Program
Revision Date: August 21, 2023

I. CATALOG DESCRIPTION

Course Number: GIST1150
Course Title: Advanced Exploratory GIS
Prerequisite(s): None
Catalog Description: In this course students will explore open source GIS applications, web mapping, collaborative mapping, and cutting edge digital mapping in the 21st century.
Credit Hours: 3
Class Hours: 45
Lab Hours: 0
Total Contact Hours: 45

II. COURSE OBJECTIVES: *Course will:*

- A. Introduce students to open source GIS applications.
- B. Provide students with an overview of Web GIS, including basic concepts and principles of design.
- C. Inspire students with the broad and real-world applications of Web GIS.
- D. Address appropriate methods of documenting and presenting data in various formats.
- E. Develop skills in building and using an array of GIS data structures.
- F. Provide students an opportunity to contribute to humanitarian GIS mapping.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Apply appropriate thematic map symbology to represent geographic phenomena.
 - 2. Obtain geospatial data from a variety of online sources and integrate into mapping processes.
 - 3. Incorporate appropriate analytical and spatial analysis tools to produce a desired outcome.
 - 4. Assess, select, and apply technologies that will contribute to project objectives.
 - 5. Integrate desktop GIS procedures and spatial databases with web-based mapping platforms.
 - 6. Demonstrate professional skills of effective communication and project management.
 - 7. Design and implement interactive digital maps to aid in visual storytelling.
 - 8. Join coordinated humanitarian mapping projects by taking a task and mapping a part of the world in OpenStreetMap.
- 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. Open Source GIS
- B. Web Mapping
- C. Collaborative Mapping

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s): Meier, Patrick, *Digital Humanitarians*, (Refer to CID and/or instructor for current edition)
- B. Other Sources: Internet and computer access

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 - 1. Module overviews
 - 2. Instructional materials
 - 3. Video presentations
 - 4. Readings and Resources

VII. METHODS OF EVALUATION

- A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 - 1. Assignments
 - 2. Discussions
 - 3. Projects