

GIST-151-GIS I 4 CREDITS

SYLLABUS

CATALOG DESCRIPTION

This class will cover the fundamental theories and applications of Geographic Information Systems (GIS). Students will learn the principles of GIS from classroom lectures and assigned readings, and then apply that knowledge to hands-on laboratory exercises designed to complement the lectures. Emphasis will be placed on the interdisciplinary nature of GIS and the development of applicable skills.

Prerequisites: None

Semester Offered: Fall or as Needed

Common Student Learning Outcomes

Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...

BROAD AND SPECIALIZED LEARNING

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

CRITICAL THINKING

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

CULTURAL AND CIVIC ENGAGEMENT

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

EFFECTIVE COMMUNICATION

Students will exchange ideas and information with clarity in multiple contexts.

INFORMATION LITERACY

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

INTEGRATING TECHNOLOGIES

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

Course Learning Outcomes

Upon successful completion of the course, the student will be able to...

1. Develop a broad understanding of GIS Principles, operations and applications.
2. Understand Geographic data types.

3. Develop basic GIS skills using industry standard GIS tools.

Specific Learning Outcomes

Upon successful completion of the course, the student will be able to...

1. Develop understanding of GIS to do the following: (B,C,E,I)
 - a. Recognize and explain fundamental GIS terminology and concepts.
 - b. Understand and use appropriate coordinate systems.
2. Understand and appropriately use and manipulate vector and raster data models. (B,C,E,I)
 - d. Acquire, edit and assess the quality of data in the two main data models.
 - e. Explore, query and map geospatial data.
3. Perform fundamental analyses using raster and vector geospatial data: (B,C,I)
 - a. Overlay, buffer, distance, and pattern analyses.
 - b. Terrain, viewshed, watershed, and interpolation methods.
 - c. Geocoding.
 - d. Basic network analyses.