SAN JUAN COLLEGE
Success Matters

GIST-230-GEOGRAPHIC IMAGE ANALYSIS 4 CREDITS

SYLLABUS

CATALOG DESCRIPTION

This course will cover the foundations of remote sensing, aerial photo interpretation, the use of imagery in GIS, and 3D visualization through lecture and lab. Students will engage in specific applications such as image classification and multi-spectral analysis to solve real world urban and environmental problems. Applications may include analyses of land use/land cover, planning, transportation, public safety, vegetation, biodiversity, ecology, water resources, and geology.

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. Gain a basic understanding of the theory and application of remote sensing and image processing techniques to a variety of fields.
2. Develop knowledge and skills in aerial photography interpretation.
3. Learn to use digital satellite and aerial imagery in a GIS.
4. Develop knowledge and skills in 3D geographic visualization.

Course Learning Outcomes

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

1. Acquire and process digital imagery for use in spectral analysis or classification studies. (B,C,I)
2. Demonstrate an understanding of the electro-magnetic spectrum, satellite platforms, imagery data sources, and their application to a variety of disciplines. (B,C,I)
3. Interpret aerial photographs for use in image processing, GIS data capture and analysis. (B,C,CC,I)
4. Process, orthorectify, and georeference imagery. (B,C,I)
5. Perform basic remote sensing analysis such as unsupervised land cover classification. (B,C,CC,I)
6. Create 3D visualizations of geographic data, spatial processes, or maps. (B,C,CC,E,I)