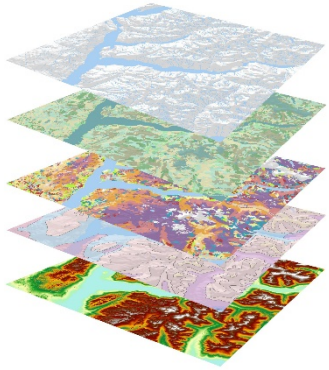
GEOG 9003: Introduction to GIS

San Francisco State University, Spring 2022
Friday & Saturday, 9:00 AM – 5:30(ish) PM (Online!)
Credit: 1.6 Continuing Education Units



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Course Description:

This course is an introduction to computer-based geographic analysis and problem-solving. It covers the fundamentals of Geographical Information Systems (GIS) technology and how it can be applied in various disciplines. Students will learn the necessary steps required for collecting, organizing, analyzing, and displaying geographic data. Each student will complete a series of lab exercises that illustrate the typical steps in a GIS project. ESRI's ArcGIS Pro software platform will be used for the laboratory portion of the course.

Learning Objectives for Course:

- Understand the theory of modeling, organizing, and visualizing geographic information.
- Define and describe a GIS; identify the components of a GIS.
- Understand the basic processes and elements of a GIS project.
- Become familiar with several applications of GIS.
- Input and manipulation of tabular and spatial data.
- Understand the basic cartographic concepts of scale, projections, generalization, and symbolization.

Prerequisites

None, but basic computer literacy and skills are an absolute must.

Assignments

You will be asked to complete a total of seven lab exercises. Lab answer sheet and results are due by the end of the day they were assigned.

Grading

This course is graded Credit/Non-Credit. To receive a Credit grade, students must demonstrate completion of each lab by providing answers for the in-lab questions and submitting final maps when prompted to do so.

Course Schedule

Friday, January 28th

9:00 – 9:30 AM: Introductions and Class Overview

9:30 – 9:40 AM: Coffee refill

9:40 – 10:15 AM: **Lecture 1 – Introduction to GIS**

10:15 – 10:30 AM: ArcGIS Pro software demo

10:30 – 12:00 PM: **Lab 1 – GIS Basics**

12:00 – 1:00 PM: Lunch

1:00 – 1:30 PM: **Lecture 2 – Vector Data**

1:30 – 2:45 PM: **Lab 2 – Using Vector Data**

2:45 – 3:00 PM: Coffee/tea/get a snack

3:00 – 3:30 PM: **Lecture 3 – Raster Data**

3:30 – 5:30 PM: **Lab 3 – Getting Acquainted with Raster Data**

5:30 PM: Log off!

Saturday, January 29th

9:00 – 9:45 AM: **Lecture 4 - Cartography**

9:45 – 10:00 AM: Coffee time!

9:45 – 11:00 AM: **Lab 4 – Cartography and You!**

11:00 – 11:30 AM: **Lecture 5 – Coordinate Systems in GIS**

11:30 – 12:00 PM: **Lab 5 – How to use Coordinate Systems in GIS (short lab, I promise)**

12:00 – 1:00 PM: Lunch

1:00 – 1:30 PM: **Lecture 6 – Attribute Tables**

1:30 – 3:00 PM: **Lab 6 – Attribute Tables and Structured Query Language**

3:00 – 3:15 PM: Coffee/tea/get a snack

3:15 – 4:00 PM: **Lecture 7 – Spatial Analysis**

4:00 – 5:30 PM: **Lab 7 – Basics of Spatial Analysis**

5:30 PM: Great job today, enjoy what is left of your weekend!!