GEOG 380: MAPS AND GEOGRAPHIC INFORMATION

Contact Information: David Banis (dbanis@pdx.edu)
Four credits with lectures and lab components

Recommended Text:
Map Use: Reading, Analysis, Interpretation by A. Jon Kimerling, Aileen Buckley, Philip Muehrcke, and Juliana Muerckre 8th Edition (2016)
If you plan to take Intro to GIS, consider this text: *GIS Fundamentals* by Paul Bolstad, 6th Edition (2019).

Course Content:
Throughout human history, maps have helped us envision human and physical phenomena and have influenced how we see the world. The proliferation of digital maps on the internet and the ever expanding use of Geographic Information Systems (GIS) allow more and more people to use and make maps. But just because we are exposed to maps all the time does not mean we understand them.

Learning about maps is much like learning a new language: there are numerous new words to learn (vocabulary), precise meanings of words to clarify (semantics), and rules for how the words are used together (syntax). The concepts in this course are not independent of each other but instead build on each other; the foundational concepts at the beginning of the course are necessary for understanding the interpretive concepts later in the course. Among the topics to be covered are: scale, map projections, locational reference systems, the use of remote sensing imagery, the nature of geographic data, types of thematic maps and symbolization, and map interpretation.

This course is a prerequisite for all other geography techniques courses dealing with GIS, remote sensing, or cartography. The goal of the course is to lay the conceptual foundation necessary to understand how mapping and map analysis occurs, both traditionally and within the context of contemporary computer-based techniques.

Learning Objectives:
Upon completion of this course, students should:
(1) know basic map terminology common to cartography, remote sensing and GIS;
(2) understand the fundamental technical principles of mapping, such as scale, projections, location systems, and symbolization;
(3) understand the procedures involved in collecting, storing, analyzing and presenting spatial information;
(4) be able to constructively evaluate and comment on the functionality, design, and veracity of various maps;
(5) become aware of how maps are embedded in societies and cultures and how they influence how we see and understand the world.

Requirements:
Lab Exercises- A central part of the course is a series of computer lab exercises. Each student must sign up for a weekly lab section. In the labs, students will explore the concepts covered in the lectures using a variety of software tools. Software for the lab exercises is available in both geography department computer labs, as well

as the PSU Virtual Computer Lab: vlab.pdx.edu. Consult with your lab teaching assistant about due dates and requirements.

Exams- There will be two midterms during class time and a take-home final exam. The midterms will be a combination of objective and essay questions. The take-home final is expository and will require you to integrate the basic concepts from the class.

Participation- There will be eight in-class exercises and a "map of the day" presentation that constitute your participation grade. These exercises will not be graded; answers will be either discussed in class or posted, so missed in-class work cannot be made up. Missing one in-class exercise will not likely affect your grade, but missing a few might, and missing most of them definitely will.
At some point in the term, and that's up to you when, each student must present the "map of the day"; this can be any map that you find interesting that you have seen on the web or in print. Email your instructor either a map image/pdf or a link for any web map you want to present.

Grading:
Lab and take-home exercises- 40%
Exams- 40%
Participation/In-class exercises- 20%

SCHEDULE

Week	Discussion Topic	Discussion Topic	Lab
1	Course Overview What is a Map?	Making Maps: Map Elements, Visual Variables	No Lab
2	Thematic Maps	Thematic Maps (continued) In-class: Thematic maps Digital Data Models	Lab 1: Thematic Maps
3	Map Scale In-class: Map Scale	Earth Geometry and Graticule	Lab 2: Digital Data Models
4	Projections	Projections (continued)	Lab 3: Projections
5	MIDTERM	Mental Maps In-class: Mental Maps Land Partitioning	No Lab
6	Location systems In-class: Quad coordinates	Aerial Photos and Visual Image Interpretation	Lab 4: Thematic Maps
7	Remotely Sensed Imagery	Interactive and Animated Maps Public Participatory Mapping	Lab 5: Remote Sensing
8	How Maps Lie In-class: Map Deconstruction	Distance and Direction, and Navigation Field Mapping/GPS In-class: Route finding	Lab 6: Google Earth
9	Relief Portrayal In-class: Contour Interpolation	MIDTERM	No Lab
10	Map Interpretation In-class: Reading Topo Maps	GIS Analysis and Applications	Lab 7: Digital Elevation Models
	Take-Home Final Due		