

Syllabus

SPATIAL DATA REPRESENTATION & DISPLAY – 01:450:357:01

Department of Geography, Rutgers University

Spring 2005

Instructor: David Gwynn

Location: B-266 Lucy Stone Hall, Livingston Campus

Time: MW 2:50-4:10 pm

Instructor Contact: gwynn@rci.rutgers.edu

Course Website: <http://geography.rutgers.edu/courses/05spring/357/index.html>

Office Hours: W 12:30-2:30 & by appointment, B-239 Lucy Stone Hall

Geography is a field dedicated to the study of the intersection between human practices and the natural environment. The current spatial patterns of human distribution and land use are the result of a series of discrete historical events that have taken place over a given area through time. One means of studying the current global mosaic of peoples and places is through the use of satellite imagery. In this course, the student will engage in a process of discovery and exploration of our world, and learn some skills that will aid him/her in creatively conveying that information to others.

Goals

Regarding theoretical issues, three fundamental goals for the student are:

1. Gain an understanding of the complexity of visual perception;
2. Understand the dual character of landscapes (natural and anthropogenic); and
3. Appreciate the history and future of human exploration on Earth and elsewhere.

While acquiring an understanding of the above “theoretical tenets” the student will engage in several hands-on projects that will hone his/her skill in identifying, understanding, and conveying geographic information from imagery. Specifically, the student will:

4. Develop and hone analytic skills (e.g., image interpretation, data mining); and
5. Become proficient with software and hardware (e.g., web editing, image processing, 3-D visualization, mapping).

In addition to the goals listed above, the student is advised to keep in mind the following fundamental questions throughout this course:

- A) Are humans an integral part of the landscape (like ants) or are they separate from it?
- B) How do visual modes of learning differ from written, oral, or sensory modes?
- C) Is the geographic data in satellite imagery inherently more reliable than from other sources?

Prerequisites

There are no official prerequisites for this course. However, a background of *basic* geographic concepts (locations, principles, theories) from both physical and human geography is expected. This course will commence its exploration of our world upon that framework.

Format of Class

This class will consist of three core components:

1. Lecture. Approximately half of class time in this course will be devoted to covering theoretical issues associated with spatial ontology, epistemology, and pedagogy. Lecture will be augmented with maps, satellite imagery, and low-altitude photography.
2. Discussion of papers. A weekly discussion of one or more selected scholarly articles will highlight some of the key theories in geography today. Students are expected to (a) read the assigned papers *before* class and (b) contribute to a lively discussion *in* class.
3. Lab Assignments. Students will work independently on a weekly laboratory assignment. A brief background lecture may be given on the day of the lab and students are expected to work on the lab during the rest of class time. Unless otherwise noted, assignments will be due one week after they are given.

In addition to the above items, the students will be expected to work as a group with all of the members of the class in the completion of several *Class Projects*. Specifically, the results from several of the laboratory assignments will be used to create online teaching tools that will be made available to the public.

Class Participation

Because of the heavy reliance on imagery (satellite and other) during class lectures and the need to complete assignments in the computer lab, attendance is mandatory. Student participation in the weekly class discussions is expected and encouraged. Individual contributions to the *Class Projects* will be assessed as part of the Labs, Assignments, & Quizzes portion of the grade.

Required Text

Johnston, A.K., 2004. *Earth from Space*. Smithsonian National Air and Space Museum. Firefly Books Ltd., New York. Pp. 272.

Selected additional papers from online sources will be assigned in class. Check the class website for weekly updates of reading materials.

Recommended Reading

Avery, T.E., and Berlin, G.L., 1992. *Fundamentals of Remote Sensing and Airphoto Interpretation* (5th Ed.). Macmillan Publishing Co., New York. Pp. 472.

Arthus-Bertrand, Y., 2001. *Earth from Above, 365 Days*. Harry N. Abrams, Inc, New York.

Grades

Labs, Assignments, & Quizzes	50%
Exam 1	20%
Exam 2	20%
Class Participation/Attendance	10%

Grade Assignment

A: 90-100%; B+: 87.5-89.9%; B: 80-87.4%; C+: 77.5-77.9%; C: 70-77.4%; D: 60-69.9%; F:<60%

Computer Lab Fee

The Department of Geography requires the payment of a \$20 computer laboratory fee. For details, see website (http://geography.rutgers.edu/computer_labs/forms/signup_ugrad.htm). Please submit payment to instructor within first two weeks of class. Failure to submit payment will result in termination of your Department of Geography computer account.

Computer Lab Hours

The software packages (e.g., Adobe GoLive, Photoshop, Powerpoint, ENVI, Imagine, ArcGIS) that will be used in this class are loaded on the computers in the Department of Geography computer lab (LSH B-266). Students can use the computers in this lab at any time during the week that the computer lab is open and a class is not in session in the lab. For laboratory hours, see door of LSH B-266 or refer to website (http://geography.rutgers.edu/computer_labs/lab_schedule/index.shtml).

Academic Integrity/Classroom Decorum

Each student is expected to submit his/her own work each week, and no cheating on exams will be tolerated. Any instance of cheating will be prosecuted according to the guidelines set by Rutgers University (see website <http://teachx.rutgers.edu/integrity/policy.html>). In addition, the Department of Geography requires that students adhere to a specific classroom decorum (see website http://geography.rutgers.edu/academics/classroom_etiquette.shtml).

Suggestions for Success

Attendance in this course is critical to student success. A sign-in sheet will be distributed during each class and will be used for calculating the Class Participation portion of the student's grade. The student is expected to keep up with assigned readings and is encouraged to raise questions during lecture. During lab sessions, the instructor will cover detailed functions of various software packages that are needed to complete each week's assignment. The student is expected to put in whatever additional time is needed to complete the lab outside of designated lab meeting time. As noted above, the hours of the Geography computer lab (LSH B-266) will be posted for easy access by the student. The student is also encouraged to attend the instructor's office hours to address questions BEFORE labs are due and well BEFORE each exam. NO EXTRA CREDIT will be offered in this course.