Remote Sensing and GIS
Environmental Studies 255
Fall, 2003

Prof. Charles Umbanhowar Jr.
Science Center 258, x3397, ceumb
Office Hours: T 11:45-1:15, W 8:00-10:00
or by appointment

Text: Lo, C.P. and A.K.W. Yeung. 2002. Concepts and techniques of Geographic Information Systems. Prentice Hall. Upper Saddle River, NJ.

Introduction

This course will introduce you to many of the fundamental concepts behind remote sensing and Geographic Information Systems (GIS), and will attempt to place them in the context of information systems, cartography, and a variety of other supporting disciplines. We will explore both the potential and the limitations of remote sensing and GIS. We will learn the basics of ArcView, a powerful and popular desktop GIS package developed by ESRI, but the focus is on concepts.

Grading

Midterm Exams (100*2)	150
Labs and Homework	150
Final Project Write-Up and Poster	125
Participation	25
Total	450

A 5% / day reduction in grade will be assessed for missing any deadline unless you speak with me first. There will be no extra credit.

Midterm Exams

The midterms are scheduled for **October 16** and **November 25**. They will be non cumulative. The exams will be of a short answer and essay format and will cover material covered in class. Be prepared to work with maps/images as part of the exams and be ready to apply the material we have learned to new situations/ problems. Use your notes as a guide to the level of detail I expect you to have mastered.

Labs and Homework

Many of the things we need to learn will only make sense once you actually work them -- for example GPS, projection and file conversion, plotting. So, to provide incentive (and credit) for working these examples I will be assigning laboratory and homework problems throughout the course of the semester. Lab attendance is mandatory and an unexcused absence could result in a failing grade.

Projects

You will be assigned a project during the middle of the semester that will require you to apply many of the concepts that we have discussed as well as learn new and additional skills. If you look at the syllabus you will see that the last sessions of class in December are devoted to your working on this project. This year our projects will be focused on the relationship between water quality of lakes (based on data taken from the MPCA and/or Landsat Imagery) and the characteristics of the surrounding watershed (including land use and catchment area). In completing this project you will each be asked to write a 3-5 page paper (individually) summarizing your work and conclusions. You will also be asked to create a poster (as a group) describing your work. The paper will be due at the time of the Final (**December 17**) as will your posters which will be displayed publicly in the Science Center lobby.