GIS4035/GIS4035L
Photo Interpretation and Remote Sensing
Fall 2011

Course Credit Hours: 4

Prerequisites or Co-Requisites: GIS4043 GIS4043L Introduction to GIS

Course Description:

This course is designed to familiarize students with the fundamentals of remote sensing and photo interpretation through hands-on techniques with aerial photographs and satellite imagery based on real-world applications. Both active and passive sensors will be discussed in lecture. The course is broken up into two distinct sections – the first five weeks are spent interpreting digital aerial photographs; the rest of the semester is spent examining and manipulating digital data from satellites and other remote sensors.

The lecture will focus on the history, technology, concepts, processes, and applications of Aerial Photography and Remote Sensing. The lab will focus on techniques for the practical use of digital aerial photography and satellite imagery using both Erdas Imagine and ESRI ArcGIS. The labs are structured to complement the material and readings assigned in lectures.

Instructor's Office Hours and Contact Information:

Instructors	Email	Office Hours
Brian Fulfrost (Lecturer)	bfulfrost@uwf.edu	W: 2:00 pm - 4:00 pm Or by appointment
Friedrich Langerfeld (Lab TA)	fml1@students.uwf.edu	M: 10:00 - 11:00 am T: 6:00 - 7:00 pm Th: 1:00 - 3:00 pm F: 5:00 - 6:00 pm Or by appointment

Office Hours: All office hours, unless otherwise stated, will be also be held in **Elluminate**. This feature allows direct interaction between students and instructors, as well as the ability to see selected programs on each other's desktops, such as ArcMap and Erdas Imagine. All sessions will be recorded and archived in eLearning.

eLearning material: All the information and assignments for this course will be provided solely through the eLearning page (http://elearning.uwf.edu). Unless otherwise stated, both lecture and lab instructions will be provided through eLearning. Lab assignments, homeworks, quizzes/mid-term will all require submission via eLearning.

Lecture Time: Live lectures will occur every Tuesday between 2:00 pm and 4:00 pm CST. Lectures are accessed through **Elluminate**, under **Online Rooms**, in eLearning. For those students who cannot make this day and time, the lecture and discussion will be recorded and available in the **Archives**. Power Point slide shows will also be available under each module's content.

Lectures: Students are required to watch the weekly lecture in power point and/or video formats. The weekly lecture topics can be found in the course schedule. The lectures provide background and context for the lab assignments. The textbook and reading materials complement the weekly lecture topics. Homework assignments, quizzes and the mid-term exam will be drawn from materials from lecture, the textbook, readings and lab assignments.

Textbook: *Remote Sensing of the Environment: An Earth Resource Perspective* (2/E), John Jensen. The book is required and is available from a number of online sources. All students are expected to read the text as assigned on a weekly basis in the lecture (see the course schedule for weekly reading assignment) in order to fully understand the lab topics.

Additional Readings: Additional readings will be assigned on a weekly basis to supplement the textbook. These readings will be in the form of journal articles, web pages, and white papers that cover the concepts from lecture and from the lab assignments. Some of the readings will contain real-world case studies of the application of aerial photo analysis and and remote sensing to environmental studies. Students are expected to finish both the textbook and additional readings the week they are assigned.

Homework: There will be 2 homework assignments. Both assignments are focused on identifying and researching case studies or applications of remote sensing and aerial photo interpretation so you can learn about how the remote sensing process has been applied in a real-world setting. The second homework is designed to provide impetus for students to begin thinking about their final project. You will have an entire month to complete each homework. The due dates for each homework assignment are listed in the course schedule.

Quizzes and Mid-Term: There will be 2 quizzes and 1 exam (mid-term). Both the quizzes and mid-term will be a combination of short answer and multiple choice. The questions will drawn from materials from lecture, the textbook, readings and lab assignments. There is an additional orientation quiz that must be completed for Module 1 content to become available, but the grade counts toward participation.

Final Project: The final project will require you to utilize the concepts, data types, processes, and techniques learned in both lab and lecture. The project should apply remote sensing data and image processing techniques to a topic or question of your choice. The goal of the project is to implement the *remote sensing process* on your own - and you will be graded on the application and documentation of the process (acquiring data, pre-processing it, analyzing , visualizing) and not the sophistication (or even outcome) of your analysis. In addition to the remote sensing analysis itself, you will be required to have a 5-10 page research paper (with bibliography) that documents and describes the project's process and outcomes (if any).

Lab Assignments: There will be 13 total lab assignments as well as a student-developed Final Project. All lab assignments will be posted on eLearning under the "Content" tab and must be completed by the "close date" listed on the course schedule.

eLearning Dropbox: All homework and lab assignments must be submitted to the appropriate dropbox in eLearning. All assignments are due by the close date of their respective module. All modules will close on Thursdays at 11:59 pm.

Participation: There will be 4 participation assignments throughout the semester. These 4 assignments include the following: (1) orientation quiz; (2) and (3) a discussion post on any topic (including lab and lecture materials) ; and (4) a brief (2-3 sentences) discussion post (in the"what's new in remote sensing" section) on a news related story that involved remote sensing or GIS. These will include tasks such as reporting on research papers or news stories in the discussion boards. These assignments are designed to encourage interest and conversation dealing with the topics of Remote Sensing and GIS.

Attendance policy: Students are expected to view and read **all lecture materials** and **finish all lab assignments.** If you know you are going to be out of town during an exercise, inform us as soon as possible. In the event of an illness, a doctor's documentation should be provided. **There will be no make up lab at the end of the semester**.

GRADING POLICY

Late assignments: All assignments are to be turned in on the **close date** of that module. All modules will close at **11:59 pm** on **Thursday**, the week after the module opens. Homework, quizzes, and participation assignments **will not be accepted** after the close date.

Late Labs: Lab assignments will be accepted late, but will be given a **50% reduced grade**. It is very important to complete all lab assignments, as the skills and techniques learned each week are likely to be used again later.

Grading Scheme		
Category	Number of Assignments	Percent of Final Grade
Participation	4	10 %
Quizzes and Mid-Term	3	15 %
Homework	2	10 %
Lab Assignments	13	50 %
Final Project	1	15 %

Grading Scale		
A	4.0	94-100%
A-	3.7	90-93%
B+	3.3	87-89%
B	3.0	83-86%
B-	2.7	80-82%
C+	2.3	77-79%
C	2.0	73-76%
C-	1.7	70-72%
D+	1.3	67-69%
D	1.0	60-66%
F	0.0	0-59%

Software Used/Prerequisites:

There is a lot of material to cover and this will be a fast-moving and fairly technologically advanced course. As such, there are a few basic prerequisites:

- Competence with the Windows XP operating system, including the storing, copying and management of multiple data types; managing multiple windows and applications; and discipline to save work frequently.

- Familiarity with data entry, sorting, editing and filtering using Microsoft Excel.

- A strong motivation to learn, explore and have fun with computer applications is essential. This course will require a significant amount of independent work and relies heavily on student initiative.

- A UWF email (gmail) account that you plan to check frequently. You will be asked to provide your blog link via email using your UWF gmail account on the first day of class in order to facilitate communications with the instructor. This will also let me know you are making your way through course orientation materials. I will only answer course related emails sent from your UWF email account.

This software is installed on eDesktop for GIS, which you have access to 24/7. This course has an expectation that all students will have access to a web-connected (Broadband/High Speed) computer capable of running Windows 98 (or greater), Internet Explorer (Version 5.0 or greater), and UWF's GIS terminal server (software fee assessed).

All students must have access to eDesktop for GIS (software) to participate in this course. Only Online GIS Certificate Program students are granted access and students must pay a one-time $250 fee to access by the end of drop/add period. Software utilized on eDesktop:

1. Erdas Imagine 10 (visual image interpretation, image processing and analysis)

2. ESRI ArcGIS 10 (visual image interpretation, image processing and analysis, and map creation)

ADMINISTRATIVE INFORMATION

Academic conduct: The Student Code of Conduct sets forth the rules, regulations and expected behavior of students enrolled at the University of West Florida. Violations of any rules, regulations, or behavioral expectations may result in a charge of violating the Student Code of Conduct. It is the student's responsibility to read the Student Code of Conduct and conduct themselves accordingly. You may access the current Student Code of Conduct at http://www.uwf.edu/judicialaffairs.

Academic Integrity Policy: All UWF students are expected to conduct their studies in a way that is honorable to themselves, their classmates, and the University. Academic Integrity is at the heart of the academic community and the university learning experience. As such, it is held in high regard within this course.

Plagiarism is a serious offense and will not be tolerated under any circumstances. The course plagiarism policy will follow UWF and College of Arts and Sciences policies as described in http://uwf.edu/cas/aasr/Plagiarism.pdf.

The UWF Student Handbook, Code of Student Conduct, Academic Misconduct, defines plagiarism as "Representing the words, data, works, ideas, computer program or output, or anything not self generated as one's own. Some examples of plagiarism include:

a. Copying phrases, sentences, sections, paragraphs or graphics from a source and not giving credit by citing the source.
b. Having another person write an assignment (for pay or for free) and submitting it as one's own.
c. Modifying or paraphrasing another's ideas or writings and submitting them as one's own."

For further clarification of plagiarism, see the UWF library tutorial at http://library.uwf.edu/Research/OnlineTutorials/Plagiarism/

UWF maintains a university license agreement for an online text matching service called Turnitin®. At my discretion I will use the Turnitin® service to determine the originality of student papers. If I submit your paper to Turnitin®, it will be stored in a Turnitin® database for as long as the service remains in existence. If you object to this storage of your paper:

1. You must let me know no later than two weeks after the start of this class.
2. I will utilize other services and techniques to evaluate your work for evidence of appropriate authorship practices.

Students found to have plagiarized, or otherwise violated an ethical code of conduct will be sanctioned to a degree up to and including receiving a failing grade in the course and suspension from the University.

Special technology utilized by students: medium (personal computer, spreadsheet programs, calculator, maps, and similar).

Student Learning Outcomes: After successfully completing this course, students will be able to critically examine the concepts, policies, and methodologies of earth science, and interpret how human activities affect, and are affected by, affected by Earth processes. Students will be able to describe their environment in terms of geological processes and principles.

Students with Special Needs: The Student Disability Resource Center SDRC at the University of West Florida supports an inclusive learning environment for all students. If there are aspects of the instruction or design of this course that hinder your full participation, such as time limited exams, inaccessible web content, or the use of non-captioned videos and podcasts, please notify the instructor or the SDRC as soon as possible. You may contact the SDRC office by e-mail at sdrc@uwf.edu or by phone at (850) 474-2387. Appropriate academic accommodations will be determined based on the documented needs of the individual.