GEOG 4400 – Introduction to Remote Sensing
Fall, 2013. Thursdays 6:00 - 8:50 PM, ENV 336
(This syllabus is for undergraduates only. See GEOG 5960 for the graduate syllabus)

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Office Hours: Wednesdays 4:30 – 6:00 PM, Thursdays 4:30 – 6:00 PM, or by appointment.

Objectives

This course is designed to introduce the principles of remote sensing and image analysis, including:

(1) The fundamental characteristics of electromagnetic radiation and how the energy interacts with Earth surface materials;
(2) Remote sensing platforms and instruments;
(3) Principles of visual interpretation and basic skills of digital image display and analysis; and
(4) Remote sensing of vegetation, water, soils, minerals, geomorphology, and urban landscape.

Textbook


Lab and Homework

Each class has an instruction session followed by an in-class lab session. Five individual homework assignments will be turned in and marked. Late homework will be marked down 10% for every day late. Students are required to read designated chapters for each week.

Grading Structure (90-100: A 80-89: B 70-79: C 60-69: D 0-59: F)

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<tr>
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<th>Undergraduates</th>
<th>Graduates</th>
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<tr>
<td>Homework (5)</td>
<td>50%</td>
<td>40%</td>
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<tr>
<td>Mid-term Examination</td>
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<td>Final Examination</td>
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<tr>
<td>Course Project</td>
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**Schedule**  (*with homework assignments due in two weeks.*)

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<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>Homework</th>
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| 1    | 08/29  | **What Is Remote Sensing?**  
Exercise 1: Using ERDAS Imagine Image Processing Software | Chapters 1, 2, and 3                          |
| 2*   | 09/05  | **Electromagnetic Radiation Principles**  
Exercise 2: Measurement and Analysis of Target Reflectance  
(Homeowrk 1) | Chapter 5                                     |
| 3    | 09/12  | **Elements of Visual Interpretation**  
Exercise 3: Interpretation and Analysis of Aerial and Satellite Imagery (1) | Chapter 7                                     |
| 4*   | 09/19  | **Multispectral Remote Sensing Systems (1)**  
Exercise 4: Interpretation and Analysis of Aerial and Satellite Imagery (2)  
(Homework 2) | Chapter 8                                     |
| 5    | 09/26  | **Multispectral Remote Sensing Systems (2)**  
Exercise 5: Thermal Infrared Image Interpretation | Chapters 8 & 9                                |
| 6    | 10/03  | **Hyperspectral Remote Sensing**  
Exercise 6: Imagery on the Internet | Chapter 9                                     |
| 7*   | 10/10  | **Radar and LiDAR Remote Sensing (1)**  
Exercise 7: Analysis and Interpretation of Radar Imagery  
(Homework 3) | Review                                        |
| 8    | 10/17  | **Mid-term Examination** | Chapter 9                                     |
| 9    | 10/24  | **Radar and LiDAR Remote Sensing (2)**  
Exercise 8: Analysis and Interpretation of Radar Imagery (continued) | Chapter 10                                    |
| 10*  | 10/31  | **Remote Sensing of Vegetation**  
Exercise 9: Remote Sensing of Vegetation  
(Homework 4) | Chapter 11                                    |
| 11   | 11/07  | **Remote Sensing of Water Resources**  
Exercise 10: Remote Sensing of Water Resources | Chapter 12                                    |
| 12*  | 11/14  | **Remote Sensing of Urban Landscapes**  
Exercise 11: Remote Sensing of Urban Landscapes  
(Homework 5) | Chapter 13                                    |
Exercise 12: Remote Sensing of Soils and Geomorphology | Chapter 13                                    |
| 14   | 11/28  | **Thanksgiving Day (no class).** | Chapter 13                                    |
| 15   | 12/05  | **Pre-Final Week – No class. Prepare for the final exam.** |                                            |
| 16   | 12/12  | **Final Examination (6:00 pm - 8:00 pm)** | Graduate students submit project report. |

**Statement on Cheating and Plagiarism**

Students caught cheating or plagiarizing will receive a "0" for that particular assignment or exam. Additionally, the incident will be reported to the Office of Student Rights and Responsibilities for further penalty. According to the UNT catalog, the term "cheating" includes, but is not limited to:

a. Use of any unauthorized assistance in taking quizzes, tests, or examinations;
b. Dependence upon the aid of sources beyond those authorized by the instructor in writing
papers, preparing reports, solving problems, or carrying out other assignments;
c. The acquisition, without permission, of tests or other academic material belonging to a
   faculty or staff member of the university;
d. Dual submission of a paper or project, or resubmission of a paper or project to a different
   class without express permission from the instructor(s); or

e. Any other act designed to give a student an unfair advantage.

The term "plagiarism" includes, but is not limited to:

a. The knowing or negligent use by paraphrase or direct quotation of the published or
   unpublished work of another person without full and clear acknowledgment; and
b. The knowing or negligent unacknowledged use of materials prepared by another person or
   agency engaged in the selling of term papers or other academic materials.

**Classroom Courtesy**

Please follow these guidelines to avoid disrupting the class:

a. Turn off cell phones before arriving;
b. Do not arrive late or leave early (except for a bathroom break or emergency);
c. Do not sleep during class;
d. Do not work on other assignments during class;
e. Do not talk or whisper to neighbors (except for formal class interaction).

**Accommodations**

The Department of Geography, in cooperation with the Office of Disability Accommodation,
complies with the Americans with Disabilities Act in making reasonable accommodations for
qualified students with disabilities. Please present your written accommodation request before the
12th class day.

**Student Evaluation of Teaching Effectiveness (SETE)**

The Student Evaluation of Teaching Effectiveness (SETE) is a requirement for all organized classes
at UNT. This short survey will be made available to you at the end of the semester, providing you a
chance to comment on how this class is taught. I am very interested in the feedback I get from
students, as I work to continually improve my teaching. I consider the SETE to be an important part
of your participation in this class. At the end of the semester, please visit https://sete.unt.edu and
login using your EUID and password to complete the short survey.