



# Louisiana Tech University

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Geographic Information Systems Science



## Remote Sensing GISC 260

Spring Quarter 2008  
Section 1 Thursday 2:00 – 5:15  
Lomax Hall, room #2

### Syllabus

[Course Objective](#)  
[Intended Audience](#)  
[Texts](#)  
[Class Schedule](#)  
[Instructor](#)

[Prerequisites](#)  
[Course Format](#)  
[Grading](#)  
[Office Hours](#)

#### **Course Objective:**

This class is designed to provide students with a working knowledge of the principles of obtaining information that describes natural resources and their condition from remotely sensed data.

#### **By completing this course, students will:**

- Gain a basic understanding of Remote Sensing concepts
- Realize the wide range of Remote Sensing applications
- Understand the technical language of Remote Sensing
- Gain practical experience using Image Processing software

#### **Intended Audience:**

This course is designed for people who are unfamiliar with Remote Sensing, yet have basic knowledge of computers and the internet.

**Prerequisites:** Suggested Sophomore Standing

**Course Format:**

Lectures, discussion, demonstrations of Remote Sensing topics, weekly readings and lab worksheets.

Students needing testing or classroom accommodations based on a disability are encouraged to discuss those needs with the instructor as soon as possible.

**Text:**

Remote Sensing for GIS Managers by Stan Aronoff, ESRI Press, 2005  
ISBN: 1-58948-081-3

Reading and study of the textbook is an important preparation for this course. It will help you to understand the material presented in class and gives you an opportunity to identify questions that you may have.

**Class Schedule:**

**Week 1. March 6 Introduction to Remote Sensing**

Lecture: Orientation, course overview, overview of Remote Sensing

Lab:

View samples of Remote Sensing images  
Answer questions on BlackBoard, Due: 5:15 today

Reading assignment:

Aronoff Ch 1 & 2

Written Assignment for next week:

Answer Remote Sensing Study Questions # 2-1 to 2-31

Due: March 13, 2:00PM on Blackboard

Study Vocabulary for week 1

**Week 2. March 13 Remote Sensing History**

Lecture: Remote Sensing History

Movie: National Geographic

Lab: Visit sites on History of Remote Sensing

Answer questions on BlackBoard, Due: 5:15 today

Reading assignment:

Aronoff Ch 3 & 4

Written Assignment for next week:  
Answer Remote Sensing Study Questions # 3-1 to 4-14  
Due: March 20, 2:00 PM  
Study Vocabulary for week 2

### **Week 3. March 20 The Remote Sensing Process**

#### **Quiz: Vocabulary weeks 1 & 2**

Lecture: Kinds of energy & their effects on photographic systems

Lab: Canada tutorial  
Answer questions on BlackBoard, Due: 5:15 today

Reading assignment:  
Aronoff Ch 5

Written Assignment for next week:  
Answer Remote Sensing Study Questions # 5-1 to 5-25  
Due: March 27, 2:00 PM  
Study Vocabulary for week 3

### **Week 4. March 27 Camera Systems And Image Analysis**

#### **1<sup>st</sup> draft of term paper due today at 2:00 PM**

Lecture: Camera systems, Image Processing & Classification

Lab: Introduction to ERDAS Ch. 1 & 5  
Classification Tutorial, Due: 5:15 today

Reading assignment:  
Aronoff Ch 10, 11

Written Assignment for next week:  
Answer Remote Sensing Study Questions # 10-1 to 11-26  
Due: April 3, 2:00 PM  
Study Vocabulary for week 4

### **Week 5. April 3 Image Analysis, Rectification**

#### **Midterm: Reading Ch. 1-5, Vocabulary 1-4**

Lecture: Image Analysis, Rectification

Lab: ERDAS Ch. 6, Rectification, Due: 5:15 today

Reading assignment:

Aronoff Ch 6 & 7

Written Assignment for next week:

Answer Remote Sensing Study Questions # 6-1 to 7-21

Due: April 10, 2:00 PM

Study Vocabulary for week 5

**Week 6. April 10 Sensors and Satellites**

Lecture: Sensors and Satellites

Lab: Movie: Landsat Data Collection

Reading assignment:

Aronoff Ch 8 & 9

Written Assignment for next week:

Answer Remote Sensing Study Questions # 8-1 to 9-10

Due: April 17, 2:00 PM

Study Vocabulary for week 6

**Week 7. April 17 Active Sensors**

Lecture: Active Sensors

Lab: Rectify and Mosaic images

**Week 8. April 24 Remote Sensing Problems**

**Term paper due by 2:00 PM**

Lecture: Sample Remote Sensing Problems

Lab: Solve RS Problems in groups

**Week 9. May 1 Student Presentations**

**Week 10. May 8 Final Exam 2:00**  
**(Comprehensive, reading questions and vocabulary)**

**Grading:**

Reading Questions	6%
Lab Exercises	18%
Quiz	2%
1 <sup>st</sup> Draft of Term Paper	6%
Mid Term Exam	24%
Term Paper	20%
Final Exam	24%
Total	100%

**Grading Scale:**

Percent	
91% - 100	A
81 - 90	B
71 - 80	C
61 - 70	D

**Important!!! All lab assignments are due by the end of the lab.** Reading assignments are due at the **beginning** of the next lab. If you can not make the lab, please contact me for arrangements to make up the lab.

In accordance with the Academic Honor Code, students pledge the following: **“Being a student of higher standards, I pledge to embody the principles of academic integrity”**. Help each other out, but do not copy each other’s work.

Read the following net site!!! Understand the concept of plagiarism.

<http://gervaseprograms.georgetown.edu/hc/plagiarism.html#Examples>

**Instructor:**

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**Office Hours:** Monday through Friday 10:30 to 12:30