

# Geography / Natural Resources 377/577

## Remote Sensing I

### Fall Semester

**Lecture:** Tuesday, Thursday 10:00-11:00 SCI A201  
**Lab Section #1** Tuesday 8:00-9:50 AM SCI B308  
**Lab Section #2** Wednesday, 8:00-9:50 AM SCI B308  
**Lab Section #3** Monday, 9:00-10:50 AM SCI B308

**Instructor:** Eric Larsen

**Office Hours:** Mon 1:00-2:00, Thurs. 11:00-12:00, or by appointment

**Office:** Science Building, Room B331

**Telephone:** (715) 346-4098

**E-mail:** [elarsen@uwsp.edu](mailto:elarsen@uwsp.edu)

**Text:** Remote Sensing of the Environment: An Earth Resource Perspective.  
Jenson, John R. (2nd edition)

#### Attendance and Grading Policy:

You are expected to be present for all lectures and labs. It is your responsibility to take the initiative to obtain materials and lecture notes for those classes you miss. Any absence from an exam must be cleared in advance with the instructor.

#### Grades:

Exams (3 exams @ 100 points each) 300  
 Lab exercises 200

(Note: Your final lab grade will be your percentage score of all the labs combined).

A	>= 93%	C	73-76%
A-	90-92%	C-	70-72%
B+	87-89%	D+	67-69%
B	83-86%	D	60-66%
B-	80-82%	F	<60%
C+	77-79%		

**How grades are calculated:** There are 500 points possible. Let's say (for example) you received the following PERCENTAGE scores on your work:

Exam 1 87%  
 Exam 2 75%  
 Exam 3 92%  
 Lab Exercises 95%

So your final grade would be  $(87+75+92+95+95) = 444/500 = 88.8\% = B+$

## Laboratory:

A lab manual will be provided.

A pocket stereoscope must be signed out from the CNR stockroom (Room 187). The stereoscopes will be signed out during the first lab period and returned at the end of the semester. If not returned, the university will bill you for the replacement cost (approximately \$45.00). **Lab exercises are due one week after assignment, unless otherwise instructed. Many labs will require working outside the 2 hour lab periods. During the lab introduction, computers are NOT to be used for any function except 377.**

**Late labs will be assessed at 25% late penalty. Late labs will only be accepted for two weeks after the lab due date.**

## Electronic devices:

Cell phones and other electronic devices should be turned off during class (lecture and lab). Laptops are OK as long as they are used for 377 only, please remember that electronic devices can be very disruptive to the learning process for those students sitting behind and around you.

## Course Objectives:

The objectives of this course are for you to develop the hands-on skills you will need for employment and/or graduate work in remote sensing, emphasizing applications in resource management. The student will develop skills in the following areas;

- 1.) Developing analytic skills in photogrammetry. These include determining scale, distance, area, heights, and density calculations from aerial imagery. Orthorectification and accuracy assessment of image maps will also be emphasized.
- 2.) Interpretation and land cover classification of panchromatic, color, and color infrared aerial imagery, in both digital and paper form. Developing skills in stereo viewing of imagery.
- 3.) Using aerial imagery in conjunction with field collected information, maps, GPS, and GIS.
- 4.) Development of skills in software used in the remote sensing field

**Students Rights and Responsibilities. Student commitment:** Students are expected to read all assigned materials and to ask informed questions regarding the subject matter. As per the Student Handbook, students should be prepared for two hours of course work for each hour of lecture or lab. GEOG/NRES 377 consists of two lecture and two lab hours a week meaning students can expect an estimated eight hours of self study beyond scheduled lecture and lab times. **Student Rights and Responsibilities:** Your rights and responsibilities within the UWSP campus community, including required behavior by students and faculty within the classroom environment are detailed in these documents: <http://www.uwsp.edu/admin/stuaffairs/rights/rightsCommBillRights.pdf> <http://www.uwsp.edu/admin/stuaffairs/rights/rightsChap14.pdf>. **ACADEMIC DISHONESTY:** Chapter 14 of the UWSP Handbook (web address below) defines academic misconduct as follows;

1. Seeks to claim credit for the work or efforts of another without authorization or citation
2. Uses unauthorized materials or fabricated data in any academic exercise.
3. Forges or falsifies academic documents or records.
4. Intentionally impedes or damages the academic work of others
5. Engages in conduct aimed at making false representation of a student's academic performance;  
or
6. Assists other students in any of these acts.
7. Violates electronic communication policies or standards as agreed upon when logging on initially.

Violation of the above policies on any exam or laboratory exercise will result in a zero for that assignment. A second offense will result in a referral to the Academic Misconduct Hearing Committee.

# Tentative schedule for Remote Sensing 1, Fall 2019

Geography/Natural Resources 377/577

Week	Lecture	Date	Lecture Topic	Book Chapters
1	1	3-Sep	Introduction to aerial photos & remote sensing	
1	2	5-Sep	Integrating remote sensing info with other geographic data	
2	3	10-Sep	Ocular Cues	5
2	4	12-Sep	Stereo Viewing	4,6p.162-169
3	5	17-Sep	Stereo Viewing & Image Interpretation: Landforms I	14
3	6	19-Sep	Stereo Viewing & Image Interpretation: Landforms II	14
4	7	24-Sep	Land Cover/Land Use Classification	13, p. 450-456
4	8	26-Sep	Land Cover/Land Use Classification	class notes
5	9	1-Oct	Image Interpretation: Vegetation	11
5	10	3-Oct	Image Interpretation: Vegetation	11
6	11	8-Oct	Photogrammetry– relief and tilt displacement	11
6		10-Oct	Review for exam #1	
7		15-Oct	<b>Exam #1</b>	
7	12	17-Oct	Photogrammetry– relief and tilt displacement	6
8	13	22-Oct	Photogrammetry - Distortion and scale	6
8	14	24-Oct	Electromagnetic radiation 1	2
9	15	29-Oct	Electromagnetic radiation 2	2
9	16	31-Oct	Spectral Reflectance of earth surface materials	2
10	17	5-Nov	Characteristics & use of remote sensing materials	6
10	18	7-Nov	Review for exam #2	
11		12-Nov	<b>Exam #2</b>	
11	19	14-Nov	Digital Imagery I	Class Notes
12	20	19-Nov	Digital Imagery II	Class Notes
12		21-Nov	Orthophotography/Digital rectification of aerial images	Class Notes
13	21	26-Nov	Orthophotography/Digital rectification of aerial images	Class Notes
13	22	28-Nov	<b>THANKSGIVING</b>	
14	23	3-Dec	Digital classification	Class Notes
14	24	5-Dec	Digital classification	Class Notes
15	25	10-Dec	Error Assessment of RS data	Class Notes
15		12-Dec	Review for final exam	
16			<b>Final Exam is 1230-2:30, Wednesday Dec. 18</b>	