

OGLALA LAKOTA COLLEGE

Course Syllabus for EnS 313 Remote Sensing

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Course Description: This challenging course rewards the student with an insight on classification methods of multi-spectral data. Students will study current remote sensing systems, focusing in on the digital image processing techniques utilized to analyze data collected by these systems. This course summarizes the physical background of earth's radiation interaction and provides detailed step-by-step instructions for using satellites in earth resources applications. Lectures will review the specific airborne and spaceborne systems, while lab assignments will cover the digital manipulation and analysis techniques employed by today's remote sensing technicians.

3 Credit Hours

Course Overview: The overall goal of this course is to provide students with practical skills in remote sensing using Erdas Imagine software. Towards this goal, this course will consist mainly of remote sensing laboratories with short topical ad-hoc lectures on the science behind remote sensing. At the conclusion of the course, students will be provided internship opportunities to work with the following imagery to collaboratively create a land cover map for the Pine Ridge reservation.

- 2006 Summer Landsat-7 imagery
- 2006 Winter Landsat-7 imagery
- 2006 Digital Globe multi-spectral imagery
- 2006 Orthophotos of Shannon County, Bennett County, Jackson (Washabash) County

Prerequisites: Background in GIS / remote sensing, and/or a strong work ethic.

Required Textbook: None – Students will be provided with class handouts.

Descriptive Reading Load: Grade14 reading level. Students will be required to read and understand class handouts and the Erdas Imagine helpfiles.

Types and Amounts of Writing Expected: The nature of this course does not require that a significant amount of writing to be completed as homework.

Lakota Perspective: This course stresses **Wolakotakiciapi** or “learning Lakota ways of life in the community”. Understanding how the methods taught in the course apply to the 'real world' requires patience and quiet observation. Participants in this course are expected to practice respect for each other and the instructor during this course.

Class Attendance: This class **requires** bi-weekly attendance. In accordance with OLC policy, you will be dropped from the course if you miss more than three consecutive class periods. If you miss more than five class periods during the semester, you will also be dropped from the

course. Missed classes may be made-up **only** with prior approval of the instructor.

Grading and Course Requirements: This course is hands-on and requires significant student participation in discussion and laboratory exercises. Students will be graded on their progress in completing in-class exercises and by class attendance. Students will receive a one-letter grade reduction for each missed class after the first class. Thus, missing two classes will result in a maximum grade of a 'B' and missing three classes will result in a maximum grade of a 'C' etc.

The following scale will be used:

A = 90% - 100%

B = 80% - 89.9%

C = 70% - 79.9%

D = 60% - 69.9%

F = below 60%

Course Philosophy: You are not studying and learning for the instructor, but for yourself. Grades are important for your academic career; nevertheless, your professional life really begins after you graduate. Understanding the hydrologic cycle will help you not only in your professional career, but also to understand and appreciate your surroundings and life itself. This is a chance to start building onto your existing knowledge. What you take out of this course is up to you. You have to invest your time. Between reading, problem-solving, writing, and completing your homework assignment, you should expect to work between 6 – 10 hours per week on this class.

Tips to Succeed in this Course:

Read chapters **before** trying to do the homework or the quiz. Then it will be much easier for you to follow the online lecture and to use online forums to ask questions about material that you did not understand.

Do not just “read” your textbook. Keep good notes in a separate notebook and use your notebook to comprehend new concepts and define new terms **in your own words**.

When you do your assignments, go back through the appropriate chapters and read them carefully a second time to find the answers.

Actively take part in the class using the online forums. This will help you solve problems in your homework in a collaborative fashion.

Note: The instructor reserves the right to make changes. Students will be informed of any such change.