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# Soils: NRM 2305

## Sul Ross State University

### Summer 2026

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#### Instructor Information:

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**Instructor:** Asia Cornelius  
**Office:** RAS Room 140

**Office hours:** By appointment  
**Email:** adc20gs@sulross.edu

#### Textbook:

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##### Required:

Elements of the Nature and Properties of Soils 4<sup>th</sup> Edition by Nyle C. Brady and Ray R. Weil.

##### Recommended:

Dirt: The Erosion of Civilizations by David R. Montgomery

The Soil Will Save Us by Kristin Ohlson

Building Soil: A Down to Earth Approach by Elizabeth Murphy

#### Course Description:

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This course was designed to make you think about the ground beneath your feet. Soil supports plant growth, stores and filters water, cycles nutrients, and provides habitat for many organisms. Despite its importance, soil is often overlooked.

In this course, we will explore the science of soil and its role in the natural environment. Topics include soil formation and classification, physical and chemical properties of soil, soil-water relationships, and overall soil health. Through lectures, discussions, and hands-on activities, students will learn how to observe, describe, and evaluate soils and understand how soil properties influence land use and ecosystem function.

A unique component of this course is the at-home soil lab, where students will collect and analyze their own soil sample throughout the semester. By the end of the course, I hope that students will develop an appreciation for soil as a living system, gained practical skills in soil assessment, and learned how soil management contributes to natural resource conservation.

## Student Learning Outcomes:

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By the end of this course, students will be able to:

### Knowledge and Technical Skills

- State the importance soil plays in ecosystems and their complex roles.
- Understand and quantify physical and chemical characteristics of soil.
- Integrate the knowledge of soil conservation and health into other areas such as agronomy and range science.

### Professional and Marketable Skills

- **Collaboration:** Work productively with peers to compare, analyze, and interpret soil data and observations.
- **Communication:** Effectively communicate soil science concepts through written reports, discussions and presentations.
- **Quantitative Reasoning:** Collect, analyze, and interpret soil data using appropriate calculations and scientific methods.
- **Critical Thinking:** Evaluate soil-related challenges and apply scientific reasoning to solve real-world land management problems.

## ADA Statement:

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SRSU Accessibility Services. Sul Ross State University (SRSU) is committed to equal access in compliance with the Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the student's responsibility to initiate a request each semester for each class. To help protect confidentiality, students seeking accessibility/accommodation(s) services must submit the Accommodation Request Form located on our website. Students are welcome to call the Office of Accessibility Services at 432-837-8203 or stop by Ferguson Hall Room 112 if they have any additional questions regarding the process. Our mailing address is PO Box C-122; Alpine, TX; 79832.

## Distance Education Statement:

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Students enrolled in distance education courses have equal access to the university's academic support services, such as library resources, online databases, and instructional technology support. For more information about accessing these resources, visit the SRSU website.

Students should correspond using Sul Ross email accounts and submit online assignments through Blackboard, which requires a secure login. Students enrolled in distance education courses at Sul Ross are expected to adhere to all policies pertaining to academic honesty and appropriate student conduct, as described in the student handbook. Students in web-based courses must maintain appropriate equipment and software, according to the needs and requirements of the course, as outlined on the SRSU website. Directions for filing a student complaint are located in the student handbook.

## Academic Integrity:

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Students in this class are expected to demonstrate scholarly behavior and academic honesty in the use of intellectual property. Students should submit work that is their own and avoid the temptation to engage in behaviors that violate academic integrity, such as turning in work as original that was used in whole or part for another course and/or professor; turning in another person's work as one's own; copying from professional works or internet sites without citation; collaborating on a course assignment, examination, or quiz when collaboration is forbidden. Students should also avoid using open AI sources unless permission is expressly given for an assignment or course. Violations of academic integrity can result in failing assignments, failing a class, and/or more serious university consequences. These behaviors also erode the value of college degrees and higher education overall. In this course, every element of class assignments must be fully prepared by the student. The use of generative AI tools for any part of your work will be treated as plagiarism. If you have questions, please contact me.

## Library Resources:

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The Bryan Wildenthal Memorial Library and Archives of the Big Bend in Alpine offer FREE resources and services to the entire SRSU community. Access and borrow books, articles, and more by visiting the library's website, [library.sulross.edu/](http://library.sulross.edu/). Off-campus access requires logging in with your LoboID and password. Librarians are a tremendous resource for your coursework and can be reached in person, by email ([srsulibrary@sulross.edu](mailto:srsulibrary@sulross.edu)), or by phone (432-837-8123). No matter where you are based, public libraries and many academic and special libraries welcome the general public into their spaces for study. SRSU TexShare Cardholders can access additional services and resources at various libraries across Texas. Learn more about the TexShare program by visiting [library.sulross.edu/find-and-borrow/texshare/](http://library.sulross.edu/find-and-borrow/texshare/) or ask a librarian by emailing [srsulibrary@sulross.edu](mailto:srsulibrary@sulross.edu). Mike Fernandez, SRSU Librarian, is based in Eagle Pass (Building D-129) to offer specialized library services to students, faculty, and staff. Utilize free services such as InterLibrary Loan (ILL), ScanIt, and Direct Mail to get materials delivered to you at home or via email.

## Assignment Submission and Late Work Policy:

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Due dates are provided throughout the course to help you keep on track and prevent a backlog of assignments at the end of the semester. I will accept late assignments without penalty, but I do encourage you to stay as close to the schedule as possible.

Many of the laboratory activities require multiple steps and observations over time, so waiting until the last week of the semester to begin your work will make it difficult to complete the course successfully. If you would like to finish early, you are welcome to work ahead.

All assignments, quizzes, discussions, and lab activities must be submitted by **August 9<sup>th</sup>**. Individual and group projects are due by **August 12<sup>th</sup>**. Please plan accordingly and reach out if you anticipate any issues with meeting these deadlines.

## Grading:

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You can monitor your progress throughout the semester by checking the Gradebook in Blackboard. There you will find your scores, instructor feedback, and comments on assignments, quizzes, discussions, and laboratory activities.

Because blackboard calculates grades based only on completed assignments, the displayed grade may change as additional coursework is submitted and graded. If you would like to estimate your current standing in the course, divide the total points you have earned by the total points possible for assignments that have been graded.

**Grade assignment: <60 = F; 60-69 = D; 70-79 = C; 80-89 = B; 90-100 = A**

Grade Breakdown:

### **Lecture (60% of grade)**

Quizzes	15%
Assignments	15%
Discussions	5%
Final Individual Project	15%
Final Group Project	10%

### **Lab (40% of grade)**

Completion of Lab with Photos	20%
Veemaps	20%

## Assignments, Quizzes, and Discussions:

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Each course unit will have an assignment and either a quiz or discussion. Please make sure you complete these for each course unit and submit them on time.

## Lab:

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Lab will be completed at home this semester. You will need to work through each lab, which starts with a field lab and then continues with analyzing your soil sample. The lab will give you the information you need to submit your final project and presentation for this class. You will not be able to pass the class without completing the lab. Lab instructions, videos, and links for submission of reports can be found in the Lans menu button under Course Content.

## Group Work:

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For your final project/presentation, you will be assigned to a group. You will be preparing your individual soil project and then will work with a group to present a compare and contrast project looking at how each of your soils differed.

**Schedule:**

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<b>Week</b>	<b>Lab/Lecture</b>	<b>Course Unit/Lab</b>	<b>Assignments</b>	<b>Due Date (Midnight CST)</b>
1 (July 6 – 12)	Lecture	Start Here	Intro Discussion and Syllabus Quiz (Quiz 1)	July 8th
	Lecture	Unit 1: An Introduction to Soil	Assignment 1; Quiz 2	July 12th
	Lab	Lab Prep and Site Selection		July 12th
	Lab	Lab 1: Soil Landscape Relationships	Lab 1 Veemap	July 12th
2 (July 13 – 19)	Lecture	Unit 2: Soil Taxonomy	Assignment 2	July 19th
	Lecture	Unit 3: Physical Properties	Assignment 3; Quiz 3	July 19th
	Lab	Lab 2: Soil Survey	Lab 2 Soil Survey Discussion	July 19th
	Lab	Lab 3: Sample Collection, Bulk Density	Lab 3 Veemap	July 19th
3 (July 20 – 26)	Lecture	Unit 4: The Dynamics of Pore Space	Assignment 4; Quiz 4	July 26th
	Lab	Lab 4: Sample Morphology	Lab 4 Veemap	July 26th
	Lab	Lab 5: Soil Texture	Lab 5 Veemap	July 26th
4 (July 27 – Aug 2)	Lecture	Unit 5: Soil Chemistry	Assignment 5; Quiz 5	August 2nd
	Lecture	Unit 6: Soil Carbon, OM, and Biota	Assignment 6; Quiz 6	August 2nd
	Lab	Lab 6: Soil Water	Lab 6 Veemap	August 2nd
	Lab	Lab 7: Calcium Carbonate	Lab 7 Veemap	August 2nd
5 (Aug 3 – 9)	Lecture	Unit 7: Plant Nutrients	Assignment 7; Quiz 7	August 9th

	Lecture	Unit 8: Soil Health	Assignment 8; Soil Conservation Discussion	August 9th
	Lab	Lab 8: Soil pH	Lab 8 Veemap	August 9th
	Lab	Lab 9: Soil CO <sub>2</sub>	Lab 9 Veemap	August 9th
6 Short Week (Aug 10 – 11)	Final Project	Unit 9: Course Wrap-Up	Work on Individual and Group Projects	
Finals (August 12th)	Final Project	Unit 9: Course Wrap-Up	Final Individual and Group Project Due	August 12th