

NRM 2305 Soils  
Fall 2025

Professor: Dr. Bonnie Warnock

Office: 101A RAS on Thursday and WSB 314 on Monday. Please check with Lonora to schedule a time

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Office Hours: WSB 314A M 11-1 ; and RAS 101A Thursday 9-11; Other times by appointment.

Lonora can add you to my calendar. She can be reached at [lhunt@sulross.edu](mailto:lhunt@sulross.edu), 432 837 8201 or in RAS 101.

Lab Teaching Assistants:

Kendall Christensen

Office: RAS 117 Desk 4

Phone: 254-216-1622 (is ok with texts, please include your name in the text)

Email: [keh24fd@sulross.edu](mailto:keh24fd@sulross.edu)

Office Hours: Tuesday and Thursday 1:30-3:30

Asia Cornelius

Office: RAS 140

Phone: 210-981-9188 (is ok with texts, please include your name in the text)

Email: [adc20gs@sulross.edu](mailto:adc20gs@sulross.edu)

Office Hours: MTW 1:30-3:30

Course description:

The origin, formation, and classification of soils, as well as their physical, chemical, and biological properties. Organic matter, moisture, and soil fertility maintenance are also covered.

Class meetings:

Lecture: Monday and Wednesday 2:00-2:50

Lab: Wednesday: 3:00-4:50

Please dress appropriately for lab on Wednesdays. We will be going in the field on several occasions and working with chemicals in the lab. Please wear long pants and closed toe shoes. Be sure to bring a calculator when we are working inside as you will need to perform calculations each week to determine the physical and chemical properties of your soil.

Program Learning Outcomes for a B.S. in Natural Resource Management

The graduating student will be able to demonstrate that he/she is able to:

1. Identify species of wildland plants and wildlife common to the western United States and describe their natural history.
2. Demonstrate knowledge of elements of an ecosystem
3. Communicate about natural resources and conservation both verbally and in writing
4. Conduct range and wildlife inventories in a team setting

5. Apply knowledge of elements of an ecosystem into an appropriate conservation management plan

#### Course Objectives

1. Students will be able to state the importance of soils in ecosystems
2. Students will be able to understand the important physical and chemical characteristics of the soil.
3. Students will be able to integrate the knowledge of soil characteristics into other areas such as agronomy and range science.

#### Students will be expected to develop the following skills through both lecture and lab.

1. Team work: Students will learn team work in lecture with a class project on building and maintaining a compost pile and all lab work will be conducted in groups.
2. Communication: Students will improve communication skills through group discussions for soil challenges in lecture and in written reports in lab.
3. Quantitative and empirical skills: Students will develop quantitative skills in both lecture and lab through calculations of soil physical and chemical characteristics.
4. Critical thinking: Students will practice critical thinking in soil challenges in lecture and in the application of knowledge gained in lab to specific uses for their soil sample.

#### Recommended Texts:

Elements of the Nature and Properties of Soils (3<sup>rd</sup> or 4<sup>th</sup> editions).

Soils in our Environment (11<sup>th</sup> edition)

Building Soil: A Down to Earth Approach by Elizabeth Murphy

Lab manual, notes and assignments will be on Blackboard.

#### Tentative Course Outline:

Week #	Topic	Lab #	Topic
1 (8/25&27)	Introduction and Definition of Soil Soil Composition and Importance	1	First week no lab
2 (9-1&4)	Labor Day no lecture and Soil Parent Materials	2 (9-4)	Soil Landscape Relationships in the field
3 (9-8&10)	Soil Formation	3 (9-10)	Soil Surveys in the computer lab
4 (9-15&17)	Physical properties of soils	4 (9-17)	Soil Sample Collection and Field Bulk Density
5 (9-22&24)	Soil Taxonomy	5 (9-24)	Sample prep and morphology
6 (9-29&10-1)	Soil Water	6 (10-1)	Soil Water in lab

7 (10-6&8)	Soil Aeration and Temperature	7 (10-8)	Soil Bulk Density in lab
8 (10-13&15)	Soil Reaction, including acidic and salt affected soils	8 (10-15)	Soil Particle Size and Texture in lab
9 (10-20&22)	Soil Reaction, including acidic and salt affected soils	9 (10-22)	Soil pH and Salinity in lab
10 (10-27&29)	Soil Carbon, Organic Matter and Soil Biota	10 (10-29)	Soil Calcium content in lab
11 (11-3&5)	Soil Carbon, Organic Matter and Soil Biota	11 (11-5)	Soil Biological Activity and Organic N in lab
12 (11-10&12)	Plant Nutrients and Soil Fertility Mgt	12 (11-12)	Soil Aggregate Stability or Soil Microbiology in lab
13 (11-17&19)	Soil Erosion and Conservation	13 (11-19)	Make up and Q&A lab day
14 (11-24&26)	Tillage, Irrigation, and Farming Systems & No Class Holiday	14 (11-26)	No Lab Holiday
15 (12-3)	Last class day: Wrap up and Work on Final Poster	15 (12-3)	Lab final
Monday 12-8 at 12:30	Final Poster uploaded		

### Class Organization:

Roll will be taken during each class meeting. You will receive 100% of points if you arrive on time and don't leave early. If you are tardy or leave early you will be awarded 50% of the points for that day. The SRSU catalog states "The instructor may, at his discretion, drop a student from a course when the student has a total of nine absences. An absence is defined as non-attendance in fifty minutes of class. Non-attendance in a one and one-half hour class will constitute one and one-half absences." There will be group discussions and assignments in class as well as soil challenges so Come to Class! I also expect you to come prepared and engage in and participate in class. You may not be super interested (finding someone that loves soil is like a sasquatch in the Trans-Pecos) but soils is the foundation for many decisions in range, wildlife, ag business etc.

Cheating on any exam or assignment will result in an F for that material and possible expulsion from the class with a grade of F.

Late Work Policy: Late work will be accepted until that work is graded, once grades are posted not assignments will be accepted. 1 week after the due date you will get full credit, after that you will have a 10% penalty for each day late.

If you miss a lecture, you may obtain notes from a willing classmate. Handouts, and assignments may be obtained from me or on Blackboard

Grades:

**Lecture:**

Scratch Off Quizzes	100 points
Soil Challenges and Class Participation	100 points
Class Attendance	100 points
Final Poster	100 points

**Laboratory** 200 points

Participation	50 points
Lab V-maps	100 points
Lab final	50 points

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

Assignments and Lab Overview (Additional Information is on BB and will be given verbally)

Scratch off quizzes will be multiple choice questions. You will need to bring a calculator to class for some quizzes as some questions will require you to complete calculations i.e. volumetric water content, irrigation and fertilizer recommendations etc. These are multiple choice questions but you will need to make sure you read the question carefully and think about what I am asking!

The final poster will be on a selected applied Soils topic and will be turned in as a Power Point slide.

Soil Challenges are in class assignments and questions that are designed to test critical thinking skills and your understanding of soil principles. For group discussion assignments in lecture your responses will be graded based on your participation in the group discussion. One of the soil challenges will be building and maintaining a class compost pile. You will be required to work as a group to collect materials and a schedule will be developed for teams of two to turn the pile on a regular basis.

The Lab is designed to develop your understanding of soil by testing and learning about a soil sample that you collect. This will be a team effort and your team will be assigned the first day of lab. Each team will collect a soil sample, describe the area where the sample was collected, and conduct a series of lab tests to determine the physical and chemical properties of your soil sample. An individual weekly report submitted on the Vmap template will be required. A comprehensive written lab report Vmap that summarizes your findings on the soil sample and discusses the strengths and weaknesses of your soil as it applies to agriculture and rangeland will be written by each individual based on the team data collection. Please be sure to bring a calculator to lab each week.

## **ADA Statement**

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. Students seeking accessibility/accommodations services must contact Mrs. Mary Schwartz Grisham, LPC, SRSU's Accessibility Services Director at 432-837-8203 or email [mschwartz@sulross.edu](mailto:mschwartz@sulross.edu). Our office is located on the first floor of Ferguson Hall, room 112, and our mailing address is P.O. Box C122, Sul Ross State University, Alpine. Texas, 79832.

## **Counseling**

Sul Ross has partnered with TimelyCare where all SR students will have access to nine free counseling sessions. You can learn more about this 24/7/356 support by visiting [Timelycare/SRSU](https://www.timelycare.com/sulross). The SR Counseling and Accessibility Services office will continue to offer in-person counseling in Ferguson Hall room 112 (Alpine campus), and telehealth Zoom sessions for remote students and RGC students.

## **Libraries**

The Bryan Wildenthal Memorial Library in Alpine offers 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/](https://library.sulross.edu/). Off-campus access requires logging in with your LobolD 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/](https://library.sulross.edu/find-and-borrow/texshare/) or ask a librarian by emailing [srsulibrary@sulross.edu](mailto:srsulibrary@sulross.edu).

New for Fall 2023: 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) and ScanIt to get materials delivered to you at home or via email.