BIOL 4406 – Principles of Ecology Spring 2026 Lab Syllabus
INSTRUCTOR AND COURSE DESCRIPTION

Instructor: Dr. Thornton R. Larson **Office Hours:** T 430PM -7PM; MR 1 PM- 2 PM; or by appt

Office: WSB 221 **Classroom:** WSB 107 **Office Phone:** (432)837-8084

Email: trl21jz@sulross.edu

Lectures: Monday/Wednesday 9:30 AM to 10:45 AM **Laboratory:** M 3:30 PM-5:15PM

Course Description

Ecology deals directly with the relationship between organisms and their environment. Topics in these courses provide foundational information and techniques for the study of plants and animals. Various aspects of ecological organization will be covered in this course, including population dynamics, community structure, and ecosystem function, at different spatial and temporal scales. This is one of my favorite subjects to discuss and instruct.

The lecture course will cover many main topics associated with ecology, but this course should still be viewed as just a small taste of different ideas and concepts within ecology. Same goes for the lab techniques. The lab in this course is meant to have you outdoors, learning some basic techniques within ecology. There will be a significant amount of writing and analysis as part of the lab and therefore I have kept other assignments at a minimum to allow you more time for completing the laboratory studies.

I want to partner with you in your ecological learning journey and as such would like you to come to my office hours and meet with me several times throughout the semester. I would like to have the first meeting with you before the end of February, so please take some time in this first week to schedule a time you would like to meet with me. Our conversations do not have to deal directly with the course, and as an extra incentive, I will put it here, but if you meet with me 3 times during the semester, you will receive 10 points of extra credit toward an exam score.

Required Materials

Textbook is Libretext "Ecology for All!" https://commons.libretexts.org/book/bio-69816

Labs and corresponding assignments will be posted on Blackboard

Exams and Grading

Lecture:

4 lecture exams	400
3 Writing Assignments (1 is a podcast)	60
Exit Notes	40

Lab:

Lab Assignments	200
Outreach Assignment	50

A 90 – 100% B 80 – 89% C 70 – 79% D 60 – 69% F <60%

COURSE OBJECTIVES, LEARNING OUTCOMES, MARKETABLE SKILLS, POLICIES, AND UNIVERSITY SERVICES

Course Objectives: At the end of the semester, students will:

1. Develop hypotheses-driven experiments to test questions about patterns in nature and the natural processes.
2. Describe theories that describe the patterns of abundance and diversity of organisms.
3. Define competition, predation, mutualism, and parasitism and give examples of each.
4. Model population growth, population regulation, and describe factors that limit population growth.
5. Diagram the energy flow in an ecosystem.
6. Describe biogeochemical cycles and how human impacts have altered them.
7. Use spreadsheets to organize, manipulate, and summarize data.
8. Present data in tabular and graphic formats.
9. Interpret patterns in data gathered and conclude possible causation.
10. Effectively communicate findings from field/lab investigations in formal reports.

Student Learning Outcomes (SLOs) for Biology:

1. Demonstrate an understanding of evolution by natural selection.
2. Demonstrate an integration of environmental awareness into everyday modern life.
3. Understanding how to incorporate molecular biology into the study of the whole organism.
4. Demonstrate utilization of various field techniques toward addressing scientific questions in the discipline.
5. Conduct basic laboratory experiments utilizing standard observational strategies.
6. Critical Thinking. Students will develop critical thinking skills to include creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information.
7. Students will develop communication skills to include effective development, interpretation, and expression of ideas through written, oral, and visual communication.

Marketable Skills

1. Ability to organize, analyze, and interpret data.
2. Proficiency in using presentation software.
3. Experience in managing time and meeting deadlines.
4. Ability to speak effectively and write concisely about scientific topics.
5. Experience in the development of professional email correspondence.

In class expectations:

- **No recording** of the lecture without express written permission of the Instructor (if you require the course recording for your studying please visit the counseling center so I can document your need)
- **No headphones or ear pieces** such as AirPods allowed during class (if you have a sensory need for such a device please see the counselling center to document this need)
- **No cell phones***. Those using cell phones during class will be asked once to put them away and if used a second time will be asked to leave the class for that day with attendance points or exit note points not being received for that class day.

- **No laptop use** during class*. While some students have utilized laptops for notetaking, this is no longer the norm identified by the instructor of this course. Other uses of laptops during lecture (gaming, video watching, social media, etc.) are a distraction to your peers that sit near you, so for students trying to learn, laptops will not be allowed for notetaking in class.
    - I recommend taking notes in a notebook and then transferring those notes using a combination of the textbook and peers in the class to re-engage with the information as a way to study for the class.

*Certain activities during class may require internet or other computer software use. Devices will be allowed for these activities.

Attendance:

Mandatory. Roll will be by through the exit notes that I provide for you to fill out. I am allowed to drop you from my class if you miss more than six times (that accounts for 3 full weeks of lecture). I generally do not drop you myself so don't expect that I will. I do not wish to hear excuses for missing class and do not want to hear about it every time you are gone. Absences are excused only if you have a documented, university-approved excuse (hospitalization, funeral, etc.) DO NOT MISS EXAMS unless you have a documented, university-approved excuse. If you do not inform me of your approved absence before the exam, it will be a ZERO.

Time Commitment Expectations:

Note – This outline is subject to change. The exams will be administered on the dates given unless material relevant for a given exam has not been covered.

STUDYING: As a general rule, students should spend 2-3 hours studying for every 1 hour of lecture material. So, for this class, you need to allocate 5-7.5 hours per week to study the lecture material. Completing the readings is technically required **before** lecture so, **I HIGHLY RECOMMEND READING BEFORE LECTURE**. You have been given the tentative schedule please review it and read the material beforehand. I recommend reading your notes in conjunction with reviewing the relevant textbook chapters. Studying is most effective shortly after the lecture, rather than all at once the night before the exam. Look up anything you do not understand, or consult your instructor during office hours.

Late Work Policy:

Late work is frowned upon for assignments to be turned in. All assignments will be due turned in to the appropriate assignment section (Blackboard or other online program) before class starts that day. That means if class starts at 11:00 AM the assignment is in Blackboard by 10:59.59 AM. After this time, you will lose 10% on the assignment. After 24–48 hours late it will be 20% off, and 48–72 hours late it will be 30% off. Beyond these times it will be a '0' on the assignment. These terms are meant to respect both timeliness and flexibility of deadlines and will be upheld.

Special Outreach Project

To demonstrate the culmination of your understanding of ecology, you and your classmates will design and implement an outreach activity for the Chihuahuan Desert Research Institute's Living Things program in mid or late April for 1st graders. Think about what you have learned in this course and what kind of activity would take approximately 20 minutes to entertain and educate a group of 1st graders. I will file an activity form so you can have an excused absence from your Thursday classes of that week.

SRSU Library Services

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, 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), 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/ or ask a librarian by emailing 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.

SRSU Disability Services:

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 Schwartze Grisham, LPC, SRSU's Accessibility Services Director or Ronnie Harris, LPC, Counselor, at 432-837-8203 or email mschwartze@sulross.edu or ronnie.harris@sulross.edu. RGC students can also contact Alejandra Valdez, at 830-758-5006 or email alejandra.valdez@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.

Academic Integrity:

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.

I will reiterate here that I take academic dishonesty and plagiarism very seriously. Citations are your friend. There is a difference between knowingly being dishonest with what is your work and mistakes through learning.

University AI Policy

The University does not recommend or endorse any specific AI tools or resources. Students should be aware that many generative AI tools (e.g., ChatGPT, Google Gemini, Microsoft Copilot) store user input and may use this data to train future models. For this reason, students should never upload or share personal, confidential, or identifiable information—such as names, ID numbers, health data, or assignment submissions containing such details—into any generative AI platform. When using AI tools, students should verify whether the tool complies with student privacy standards as indicated by the University. Faculty may recommend specific tools that better align with institutional data privacy policies, but ultimate responsibility for data protection rests with users. Students are encouraged to use faculty-recommended platforms when engaging in coursework involving generative AI. The University is not liable for any adverse experience or impact when students interact with these tools.

Dr. Larson's specific AI policy for course work

Dr. Larson recognizes the uses of AI Learning Language Models and does try to encourage the use of them in class spaces. However, many students have utilized AI to complete entire assignments for them or used AI resources to heavily edit their writing to the point that student contribution to the assignment cannot be measured and therefore gets awarded a **score of '0'**. For the purposes of this class do not use any form of AI to correct your grammar or sentence structure: this includes some of the more advanced functions in google docs and word as well as use of Grammarly. I you are unsure at the appropriateness of AI use for a particular assignment either confirm with Dr. Larson or err on the side of not using such a tool. The goal of the assignments is typically to improve upon skills such as scientific writing and demonstration of understanding, so do not use AI tools unless you have confirmed use to use them for the safety of your own grade.

Classroom Climate of Respect

Importantly, this class will foster free expression, critical investigation, and the open discussion of ideas. This means that all of us must help create and sustain an atmosphere of tolerance, civility, and respect for the viewpoints of others. Similarly, we must all learn how to probe, oppose and disagree without resorting to tactics of intimidation, harassment, or personal attack. No one is entitled to harass, belittle, or discriminate against another on the basis of race, religion, ethnicity, age, gender, national origin, or sexual preference. Still we will not be silenced by the difficulty of fruitfully discussing politically sensitive issues.

Supportive Statement

I aim to create a learning environment for my students that supports various perspectives and experiences. I understand that the recent pandemic, economic disparity, and health concerns, or even unexpected life events may impact the conditions necessary for you to succeed. My commitment is to be there for you and help you meet the learning objectives of this course. I do this to demonstrate my commitment to you and to the mission of Sul Ross State University to create a supportive environment and care for the whole student as part of the Sul Ross Familia. If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. I want to be a resource for you.

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 24/7/365 support by visiting Timelycare/SRSU. 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.

Required Student Responsibilities Statement

All full-time and part-time students are responsible for familiarizing themselves with the Student Handbook and the Undergraduate & Graduate Catalog and for abiding by the University rules and regulations. Additionally, students are responsible for checking their Sul Ross email as an official form of communication from the university. Every student is expected to obey all federal, state and local laws and is expected to familiarize themselves with the requirements of such laws.

For Remote/Online Courses Only - SRSU Distance Education Statement.

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 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.

Tutoring Center

The Lobo Den Tutoring Center offers FREE tutoring support to help you excel in your courses. Whether you need assistance in Writing, Math, Science, or other subjects, we're here to help!

Important Information:

Drop-in and Scheduled Appointments: Flexible options to fit your needs.

Hours of Operation: Monday–Friday, 8:00 AM – 5:00 PM.

Workshops: Attend our regularly hosted academic workshops on STEM topics and professional development, often in collaboration with specialized faculty.

Location: BWML Room 128.

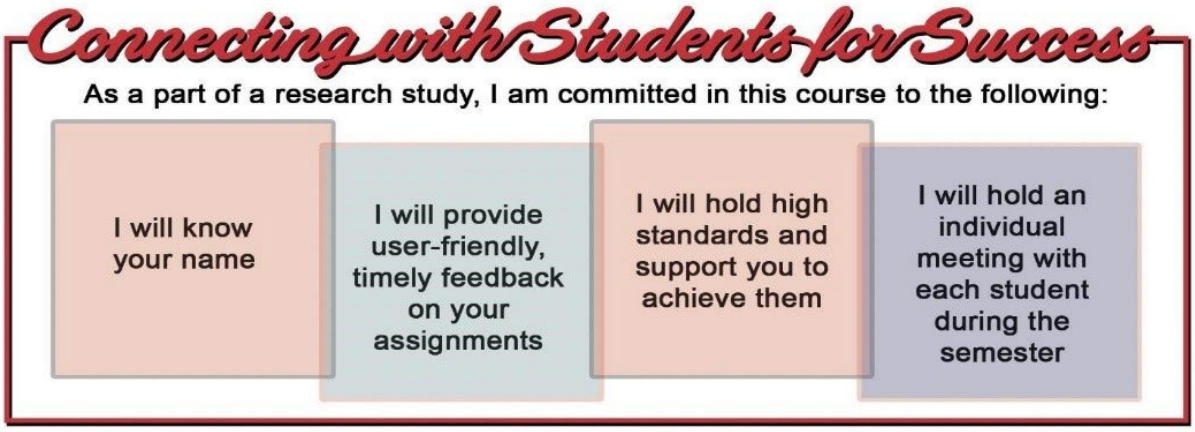
Contact Us: For more information or to book an appointment, email tutoring@sulross.edu or call (432) 837-8726.

Looking for additional support?

Tutor.com offers FREE 24/7 online tutoring in over 200 subjects, including specialized support for ESL and ELL learners with native Spanish-speaking tutors.

Access Tutor.com via Blackboard: Log in to your Blackboard account to get started anytime, anywhere.

Take advantage of these valuable resources to boost your confidence and performance in your classes. We look forward to helping you succeed!



LAB SCHEDULE

	DATE	TOPIC
Week 1	Jan 12	No Lab
Week 2	Jan 19	No Lab
Week 3	Jan 26	Lab 1 Collecting, Analyzing, and Reporting Ecological Data
Week 4	Feb 2	Lab 2 Winter
Week 5	Feb 9	Lab 3 Lotka Volterra Predator-Prey Model

Week 6	Feb 16	Lab 4 Cemetery Demography
Week 7	Feb 23	Lab 5 Clumped, Random, or Uniform Distribution
Week 8	March 2	Lab 6 Forest Sampling
Week 9	March 9	**Spring Break**
Week 10	March 16	Lab 7 Community Similarity Index
Week 11	March 23	Lab 8 Habitat
Week 12	March 30	Lab 9 Mammal Trapping
Week 13	April 6	Lab 10 Intraspecific Competition
Week 13	April 16 or 23	**CDRI Event Living Things**