

BIOL 4403 - Herpetology Fall 2022 Lecture Syllabus

Instructor and Course Information

Instructor:	Dr. Thornton Larson	Office Hours:	T 5:30 PM – 7:00 PM
Office:	WSB 221		W: 2:00 PM – 6:00 PM
Office Phone:	(432)837-8084		By appt. virtual included
Email:	TRL21JZ@sulross.edu		
Lecture Rm:	WSB 107	Lab Room:	WSB 107
Lecture Time:	MW 6:00 PM – 7:15 PM	Lab Time:	W 3:00 PM – 4:40 PM

Course Description

If you are reading this, then it's true; you are about to learn amphibians and reptiles in depth from me, Dr. Thornton Larson. Amphibians and reptiles encompass two large classes of animals found worldwide! In fact, over 100 new amphibian and reptile species are still described each year. This is my first time officially teaching a herpetology course. However, I have been training for this moment my whole life. I look forward to introducing you to a crazy world where I have spent my entire professional career. I find that, beyond the content of the course, your questions, comments, and discoveries help make the course more engaging for both myself and everyone else in the course. Within Herpetology, we will cover the basics of morphology and physiology of amphibians and reptiles and dive into the specific families within Reptilia and Amphibia. So let us get your feet wet as we hop into the frog pond. Following the taxonomy from amphibians to reptiles, we will explore the ecology, natural history, physiology, evolution, and systematics, emphasizing species found here in the Trans Pecos/Chihuahuan Desert region of Texas. Herpetology presents an exciting field compared to many other animal -ologies. We focus on two distinct classes of animals, whereas others focus on just one class. Reasons for this are as interesting as the rocks we flip. However, I hope to foster discussion about why Anura-ology is not one thing and Reptile-ology another.

This course is designed to provide a detailed overview of the ecology, natural history, physiology, evolution, and systematics of all families within amphibians and reptiles. Research regarding life history, systematics, and evolution will be explored. We will also discuss some of the past and present giants of herpetology and how their various contributions led to today's research. Natural history continues to be an often-overlooked area within the modern herpetological studies arena. I won't lie, there are a lot of families, and therefore there will be quite a bit to commit to memory. This commitment pays dividends as you will be rewarded with an uncanny ability to distinguish groups of amphibians and reptiles you encounter in the field, impressing friends and neighbors. It is also my great hope that you take away an appreciation of these beautiful animals that often suffer from some of the worst PR imaginable.

This course will require 16 weeks of work. It consists of approximately 15 distinct units. The time commitment is expected to be around 8 hours per week. Each unit is associated with readings from the textbook, a few online videos, and some exercises to rehearse the knowledge taken in. This course strongly follows the textbook and is ordered by current taxonomic understanding. By approaching the material in this way, each unit from week to week will contain many similarities, building on your learned knowledge.

Required Materials

Vitt, LJ, and JP Caldwell. 2014. *Herpetology*. Fourth Edition.

Optional Materials

Petersons Guide to Amphibians and Reptiles

Assessment:

Lecture:

4 Lecture Exams (100 pts each)	400 pts
4 Paper Review Assignments (25 pts each)	100 pts
Exit Notes (Every Lecture)	50 pts
4 Self-Assessment of review papers	50 pts

Total Lecture Points: 600 pts

Lab:

2 Lab Practicals	200 pts
Genus Presentation	100 pts
Lab Summaries (Summary after every lab)	100 pts

Total Lab Points: 400 pts

Total Course Points: 1100 pts

Total Credit

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. Sight-recognize the Reptiles and Amphibians of Texas and know the habitat and range for which they would be encountered.
2. Know the families of North American Herpetofauna.
3. Know the orders of Amphibians and Reptiles.
4. Be able to use morphological features to identify and classify living and preserved Amphibians and Reptiles.
5. Understand and compare different reproductive strategies of Amphibians and Reptiles.
6. Use a standard field guide to identify Amphibians and Reptiles.
7. Utilize databases to find primary literature to learn more about a Amphibian or Reptilian family.
8. Keep journal records of field sightings and behaviors of Amphibians and Reptiles.

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.

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.

Attendance:

Mandatory. I will have a sign-in sheet at the front of the class, but this course is sized to where I will recognize when someone is not present. **I am allowed to drop you from my class** if you miss **more than six times** (that accounts for 3 full weeks of lectures). Even though permitted, I do not typically drop students from the course and will instead leave it as your responsibility, and you will be left with an 'F' for the course. I do not wish to hear excuses for missing class and I 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**. For labs, **DO NOT MISS LAB PRACTICALS!!!** It is impossible to re-run them as they are set up with many lab components that take up space that is not guaranteed.

Summary Papers

More specific instructions on summary papers will be provided on Blackboard. The purpose of these assignments is for you to read current research in genetics. When I announce the assignments, you will have one week to submit the paper you plan to review to me, upon which I will state if A) it is a research paper (many students still at this stage in their education are unfamiliar with what constitutes a peer-reviewed research paper), B) if the paper is something that I think you are able to understand in a thorough enough manner to review it. If you choose not to check the paper with me and it is not a peer-reviewed research paper, you will lose significant points on the assignment.

The review will then be submitted to Blackboard a week later and include a comparison paragraph to a **second** peer-reviewed paper. This second paper does not require a summary but just a comparison of ideas from the papers' discussion sections (the discussion section is the most important part of the paper). This paper will be 1.5 – 2 pages single-spaced, include citations in CSE format, and be written in a clear and concise manner expected of upper-level biology students. The paper is due by the beginning of class on the due date.

A special late policy will be in place for summary papers. The policy is as follows: if it is late 1 minute to 24 hours 10% will be taken off the assignment; from 24 to 48 hours 20% taken off; and from 48 to 72 hours 30% taken off. Anything after 72 hours (3 days) will be a zero. That is a daily grade level for papers that would receive 20/20 points.

Self-Assessment of Review Paper:

For this assignment students will receive a rubric similar to the one the instructor utilizes to assess the review paper assignment. Student will utilize their self-assessment to improve what they identify as weaknesses in their papers. Students will have one week to review followed by another week to turn in the final summary paper in accordance with all the rules seen in the above section.

Exit Notes

Upon the conclusion of every class, students will fill out three notecards. One note card will express something they are totally lost on and should consider scheduling office hours to discuss for their understanding. The second is for things they mostly got. This will inform the instructor to consider reviewing that specific topic, likely at the beginning of the next class. The third is for topics that they completely understand. All of these allow the instructor to understand what areas may need more attention given to them in next lectures, reviews before exams, and even future courses.

SRSU Library Services:

The Sul Ross Library 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. Off-campus access requires your LoboID and password. Check out materials using your photo ID. Librarians are a tremendous resource for your coursework and can be reached in person, by email (srsulibrary@sulross.edu), or 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/texshare or ask a librarian by emailing srsulibrary@sulross.edu.

SRSU Accessibility 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 Schwartz Grisham, LPC, SRSU's Accessibility Services Director at 432-837-8203 or email 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/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.

Academic Honesty and 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.

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 am 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.

Tentative Lecture Schedule

If links in optional material do not open, check the link address and use that. Also, the title should be mostly the same as the video I linked to, so hypothetically, if you type in the title on YouTube, it may come up.

Date	Subject title	Chapter	Assignment	Optional Material
8/26	Introduction to Course and What is Herpetology?	Syllabus and Chapter 1		Watch: After reading Herpetology chapter 1, view a 14-minute video "Tetrapod Evolution"
8/28	Systematics, Biogeography, and Phylogenetics	Chapter 13	- First Review Paper assigned	Crash Course Biology: How We're All Related
9/2	Labor Day No class or Lab			
9/4	Amphibian Evolution, Anatomy, and Reproductive Behavior	Chapters 2, 4, & 5 Amphibian parts only	- Summary Paper check	Pop-up Biology: Frog Dissection Anatomy and Function
9/9	Evolution of Modern Amphibians	Chapter 3 (pp. 83-95)	- First Review Paper draft due - begin self-assessment 1	Animal Zone with Dr. Monzon: Origin of Tetrapods and Modern Amphibians
9/11	Exam 1	Ch 1 – 5, 13 Amphibian Basics		
9/16	Caecilians	Chapter 15	- self-assessment 1 Due - Review Paper 1 assigned	Watch: after reading Herpetology chapter 15, watch 4-minute video, "Caecilian facts"
9/18	Salamanders	Chapter 16	- Review Paper 1 due - Review Paper 2 assigned	Watch: After reading Herpetology chapter 16 5-minute video, "Animal Week – Salamanders"
9/23	Basal Frogs	Chapter 17 (pp. 471- 499)	- Summary Paper Check	Watch: to help sift through scientific papers watch 8-minute video "How

				to Read a Paper Efficiently
9/25	Neobatrachia	Chapter 17 (pp. 499 – 518)	- Summary Paper 2 draft due -begin self-assessment 2	
9/30	Exam 2	Chapter 15-17	- self-assessment 2 Due - Review Paper 2 assigned	
10/2	Reptilia	Chapter 2,4, & 5 Reptile parts only		Watch: to help you summarize the scientific paper 5-minute video "Tips for summarizing a journal article"
10/7	Reptilia Evolution	Chapter 3 (pp.95-112)		Watch: after reading Herpetology chapter 3 "The age of Reptiles in Three Acts"
10/9	Turtles	Chapter 18	- Review Paper 2 due - Review Paper 3 assigned	Watch: After reading Chapter 18 "The Evolution of Turtles"
10/14	Crocodylians and Sphenodontids	Chapter 19 and 20	- Summary Paper check	Watch: 8-minute video "What on Earth is a Tuatara"
10/16	Squamates I - Lizards	Chapter 21		Watch 16-minute video "Evolution of Crocodiles"
10/21	Squamates I - Lizards	Chapter 22	- Summary Paper 3 draft due -begin self-assessment 3	Watch 6-minute video "The Lizard's Tale 101: Meet the Anoles"
10/23	Squamates II - Snakes	Chapter 21		Watch 9-minute video "The Evolution of Snakes"
10/28	Squamates II - Snakes	Chapter 22	- self-assessment 3 Due - Review Paper 3 assigned	
10/30	Review III			

11/4	Exam III		- Review Paper 3 due - Review Paper 4 assigned	
11/6	Physiological Ecology I - Water Balance and Gas Exchange	Chapter 6	- Summary Paper check	Watch 11-minute video "Anole Lizard Dissection"
11/11	Physiological Ecology II - Thermoregulation, Performance, and Energetics	Chapter 7	- Summary Paper 4 draft due -begin self-assessment 4	Watch 3-minute video "Turtles Under Ice!"
11/13	Behavior - Spacing, Movements and Orientation	Chapter 8		
11/18	Behavior - Communication and Social Behavior	Chapter 9	- self-assessment 4 Due - Review Paper 4 assigned	
11/20	Ecology and Conservation	Chapter 12, 14		
11/25	Thanksgiving no lecture			
10/2	Review Unit 4	Ch 6 – 9,12,14	Review Paper 4 Due	
10/4				
5/3	Exam IV (FINAL EXAM)	Ch 16 – 22	Time TBD	

Tentative Lab Schedule

Date	Lab	Assignment	Optional/Extra Credit
8/26	No Lab		
9/2	Labor Day No Lab		
9/9	Intro to Field Guides, iNaturalist, and other ways of Identification	Summary Worksheet	
9/16	Identifying frogs with Frog calls	Summary Worksheet	
9/23	Common trapping methods and studies, Frog dissection	Summary Worksheet	Trip to Elephant Mountain 28-Sept
9/30	Frog Taxonomy	Summary Worksheet	
10/7	Frog Taxonomy	Summary Worksheet	
10/14	Lab Practical 1		
10/21	Lizard Taxonomy	Summary Worksheet	Saturday Trip to Lake Balmorhea
10/28	Anole Dissection	Summary Worksheet	
11/4	Snake/Lizard Taxonomy	Summary Worksheet	Weekend Camping Fishing trip to Independence Creek (subject to change)
11/11	Snakes Taxonomy	Summary Worksheet	
11/18	Herpetofauna Family Presentations		
11/25	Lab Practical 2		