

**LECTURE SYLLABUS**  
**BIOL 4403/5407 Herpetology Fall 2016**

**Instructor:** Dr Sean P. Graham  
**Lectures:** MWF 9:00-9:50 WSB 107  
**Laboratory:** M 3:-4:50 WSB 107  
**Office:** WSB 221

**Office Hours:** MWF 11-12; T-TH 2-3  
**Office phone:** 432-837-8084  
**Email:** sean.graham@sulross.edu

**Course Description:**

Herpetology is the study of amphibians and non-avian reptiles. This course will survey the origin, evolution, systematics, taxonomy, and diversity of amphibians and non-avian reptiles. The laboratory component of this course will make use of preserved specimens to illustrate morphology, taxonomy, natural history, reproduction, and other aspects of reptile and amphibian biology. A separate syllabus will be provided for the lab.

Many materials associated with this course (e.g. this syllabus, lecture and lab handouts, grades) will be distributed through the Blackboard web site.

**Recommended Books (NOT REQUIRED):**

- (1) *Herpetology, 3rd ed.* (2009). Vitt, and Caldwell. Academic Press. ISBN 978-0-12-374346-6  
This text is a large and comprehensive view of Herpetology. We will not have the opportunity to cover every chapter, but purchasing this text will greatly enhance your understanding of the lecture material.
- (2) *A Field Guide to the Reptiles and Amphibians: Eastern/Central North America, 4th ed.* (1998). Roger Conant, and Joseph T. Collins. Boston: Houghton-Mifflin. **(Highly recommended!)**

**Required material:**

Rite in the Rain Field notebook. \$ 6-15 online. Suggested dealers: Ben Meadows, Amazon.

**Exams & Grading:** The table below illustrated the grading for this course. The third lecture exam will be *comprehensive* covering the entire semester. *Quizzes will be announced and cannot be made up.*

3 lecture exams @ 100 pts ea	300
Lab exams (3 @ 100 pts ea)	300
Participation/Field Notebook	50
<b>Total Credit</b>	<b>650 points</b>

A 90 — 100%    B 80 — 89%    C 70 — 79%    D 60 — 69%    F 0 — 60%

**Course Objectives.** At the end of the semester, students should be able to:

1. Sight-recognize the amphibians and reptiles of Texas (especially those in the Trans Pecos), and know the habitat and range in which each would be encountered.
2. Know the families and common genera of North American amphibians and reptiles.
3. Be familiar with the major groups of amphibians and reptiles around the world.
4. Explain the basic external and internal anatomical/physiological features of amphibians and reptiles.
5. Understand the reproductive biology of amphibians and reptiles.
6. Comprehend relationships and phylogenies with respect to amphibians and reptiles.
7. Use a standard field guide and key to identify amphibian and reptile species.

**Program Learning Outcomes (PLOs) for Biology:**

1. Demonstrate an understanding of evolution by natural selection
2. Demonstrate an integration of environmental awareness into everyday modern life
3. Understand how to incorporate molecular biology into the study of whole organisms
4. Demonstrate utilization of various field techniques toward addressing scientific questions in the discipline
5. Conduct basic laboratory experiments utilizing standard observational strategies

## Program Learning Outcomes (PLOs) for Biology, MS:

1. Understanding and implementation of scientific methodology
2. Utilization of field techniques toward addressing scientific questions\*
3. Be able to utilize statistics toward the analysis of data within the discipline
4. Be able to effectively disseminate scientific findings using both written and oral communication.

\*this course will focus on these program objectives.

### Tentative schedule (subject to change)

Week	Topic
1	Introduction <b>No lab during week 1</b>
1	Evolution of amphibians from fishes
2	Early evolution of Amphibia
2	<b>Labor Day Sep 5 no classes, no lab</b>
2	Characteristics of modern Caudata & Gymnophiona
3	Characteristics of modern Anura
3	Evolution of Amniota from Tetrapoda
4	Major groups of amniotes: what is a reptile?
4	Evolution of Archosauromorpha & Lepidosauromorpha
<b>First Exam: September 30, 2016</b>	
5	Water Economy
6	Gas Exchange
6	Temperature
7	Evolution of Endothermy/Thermoregulation
7	Amphibian & Reptilian Locomotion
8	Special sensory adaptations
8	Special sensory adaptations
<b>Second Exam; October 28, 2016</b>	
9	Special sensory adaptations
10	Amphibian and Reptile foraging behavior
10	Escape from predation by amphibians and reptiles
11	Reproductive biology of Caudata and Gymnophiona
11	Reproductive biology of Anura
12	Reproductive biology of Anura
12	Reproductive Biology of Reptilia (11/11 Last day to drop with a W)
<b>Thanksgiving Holiday Nov 23-25</b>	
13	Reproductive biology of Reptilia
13	Conservation of Herps
<b>Final Exam; -Finals Week Dec 5-7</b>	

*Students with any learning disabilities will be provided with accommodations. If you would like to request such accommodation because of a physical, mental, or learning disability, please contact the ADA coordinator at 837-8203, FH 112.*