

BIOL 3407 – Vertebrate Natural History

Fall 2018

Instructor: Dr. Dan H. Foley III
Faculty offices 207 – Del Rio
(830) 703-4838
dfoley@sulross.edu
Office hours: Monday - Thursday: 10am – 12:00pm
Friday: by appointment

Required Texts: Pough, F. Harvey, Christine M. Janis and John N. Heiser. 2013. Vertebrate Life, 9th edition. Prentice Hall.

Shubin, Neil. 2009. Your Inner Fish: A Journey Into the 3.5 Billion-year History of the Human Body. Vintage Books.

Course Primary Learning Objectives: Upon successfully completing this course students will have a firm understanding of:

- The role of evolution on Earth's life systems, and the interactions of biotic and abiotic factors in the development of ecological communities.
- Use biological instrumentation to solve biological problems in the laboratory.
- The application of *Phylogenetic Systematics* (including fundamental concepts and limitations) and its importance in allowing scientists to develop testable hypothesis about the evolution of vertebrates.
- The difference between non-amniotic and amniotic vertebrates and the constituents and evolutionary history of each.
- The evolutionary history of modern mammals including the evolution of humans.
- The ability to recognize most common vertebrates (fishes, amphibians, reptiles, birds & mammals) found in Texas and have a general understanding of their life histories, distribution, and habitat requirements.

Tentative Lecture Schedule

(note: exact date are subject to change, be sure to keep abreast of changes).

Date	Topic	Readings
August 29	Introduction Diversity, Classification & Evolution of Vertebrates Vertebrate Relationships	Chapter 1 Chapter 2
September 5	Early Vertebrates: Jawless Vertebrates & the Origin of Jawed Vertebrates	Chapter 3
September 12	Living in Water The Condrichthyes	Chapter 4 Chapter 5
September 19	EXAM 1 – Chapters 1, 2, 3, 4 & 5	
September 26	Major radiation of Fishes Living on Land	Chapter 6 Chapter 8
October 3	Origin & Radiation of Tetrapods Response Paper Due	Chapter 9
October 10	Salamanders, Anurans & Caecilians	Chapter 10
October 17	EXAM 2 – Chapters 6, 8, 9, & 10	
October 24	Two approaches to terrestrial life	Chapter 11
October 31	Turtles The Lepidosaur: Tuatar, Lizards & Snakes	Chapter 12 Chapter 13
November 7	Mesozoic Diapsids: Dinosaurs, Crocodilians & Birds	Chapter 16
November 14	Exam 3 – Chapters 11, 12, 13, 16 & 17 Avian Specializations	Chapter 17
November 21	<i>Thanksgiving Holidays – No Classes</i>	
November 28	Synapsida & the Evolution of Mammals Mammalian Characteristics	Chapter 18 Chapter 20
December 5	Mammalian Specializations Primate Evolutions & Emergence of Humans	Chapter 21 Chapter 24
December 12	Exam 4 – Chapters 18, 20, 21 & 24	

Grade assessment:

There will be **4 quizzes**, **4 lecture examinations** and **2 laboratory examinations & 1 Response Paper** during this course. Each lecture exam will each be worth 100 points. Each quiz will be worth 25 points; each laboratory exam will be worth 100 points. The response paper will be worth 100points. There will be no formal final exam. Therefore there are a total of 800 possible points during the course of this class

Quiz 1	25 points
Quiz 2	25 points
Quiz 3	25 points
Quiz 4	25 points
Exam 1	100 points
Exam 2	100 points
Exam 3	100 points
Exam 4	100 points
Response paper	100 points
Lab exam 1	100 points
<u>Lab exam 2</u>	<u>100 points</u>
Total	800 points

The Response Paper:

You will be required to critically read “*Your Inner Fish: A Journey Into the 3.5 Billion-year History of the Human Body*” by Neil Shubin and write a 3 – 4 page Response Paper to this book. More specific details will be given in class.

<u>Total points</u>	<u>Percent</u>	<u>Letter Grade</u>
720 – 800	90 – 100%	A
640 – 719	80 – 89%	B
560 – 639	70 – 79%	C
480 – 559	60 – 69%	D
479 or less	< 60%	F

All exams should be considered comprehensive because information in each chapter/unit builds upon previous material. Questions will be drawn from information presented in lecture, contained in the text, and through occasional class notes, handouts or additional assigned readings. Exam questions may consist of a few definitions or vocabulary/concepts, multiple choice questions and short essay questions. No notes, books, cell phones, PDA’s, or other materials will be allowed during the exam. I will provide an English dictionary for your use if necessary. If you are and ESL student, please contact me to make arrangements for use of foreign language dictionaries and translators.

Laboratory

The laboratory period will be used to reinforce concepts learned during lecture and used as an opportunity to acquaint students with many of the common vertebrates of Texas.

Laboratory Schedule

Date	Topic
August 29	Video
September 5.....	The Protovertebrates
September 12.....	The Cartilaginous Fishes
September 19.....	The Boney Fishes
September 26.....	Amphibians
October 3	Reptiles Part 1: Tuatara, Turtles & Crocodilians
October 10	Lab Exam
October 17	Reptiles Part 2: Lizards
October 24	Reptiles Part 3: Snakes
October 31	Birds 1
November 7.....	Birds 2
November 14.....	Mammals 1
November 21.....	<i>Thanksgiving Holiday – No Classes</i>
November 28.....	Mammals 2 & Early hominoids
December 5.....	Lab Exam 2

Extra Credit

There will be **NO** opportunities for extra credit, so don't even ask! If you concentrate on the scoring opportunities that are presented, no extra credit will be necessary!

Study Tips:

Everyone has their own unique way of learning. How you study rather than how long you study will have a huge impact on your grade in this course. If you use all the resources available to you and take an active role in the learning process you will likely do much better.

Some specific tips are:

- Spend 15 – 20 minutes to skim through each reading assignment before class.
- Review the lecture notes and read the assigned reading
- Do the study questions at the end of each chapter
- Try to draw diagrams from lecture and the book from memory
- Make flash cards or important concepts and terms
- Call up a friend and try to explain what you have learned in class
- **ASK QUESTIONS!** You are not in this class alone, if you don't understand something, more than likely your classmates also don't understand.

Attendance:

This is an upper division college course. You are an adult, and you paid for this course. I will not be taking roll call. However, material for the exams will come largely from my lectures, so it is in your best interest to come and participate in class.

Disabled Students:

Reasonable accommodations will be provided for students with disabilities. Please meet with me the first week of class to discuss any special needs you may need.

Academic Honesty:

Cheating will not be tolerated. The University expects all students to engage in all academic pursuits in a manner that is above reproach and to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. "Cheating" includes, but is not limited to:

- Copying from another student's test paper, a laboratory report, other report, or computer files, data listings, and/or programs.
- Using, during a test, materials not authorized by the person giving the test.
- Collaborating, without authorization, with another person during an examination or in preparing academic work.
- Knowingly, and without authorization, using, buying, selling, stealing, transporting, soliciting, copying, or possessing, in whole or in part, the contents of an unadministered test.
- Substituting for another student; permitting any other person; or otherwise assisting any other person to substitute for oneself or for another student in the taking of an examination or test or the preparation of academic work to be submitted for academic credit.
- Bribing another person to obtain an unadministered test or information about an unadministered test.
- Purchasing, or otherwise acquiring and submitting as one's own work any research paper or other writing assignment prepared by an individual or firm. This section does not apply to the typing of the rough and/or final versions of an assignment by a professional typist.

Plagiarism will not be tolerated. "Plagiarism" means the appropriation and the unacknowledged incorporation of another's work or idea into one's own work offered for credit. This includes verbatim written answers by colleagues with whom you might discuss laboratories exercises. Plagiarism also includes copying information from internet resources. To avoid plagiarism, make sure you always use your own words to construct your written answers.