

Vertebrate Zoology (BIO 441)

Lecturer: Stanton Belford, Ph.D.

Office Hours: M, W, F 1-2 p.m.

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Office Hours: M-F 11-12 Noon

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Lecture: MWF 9 a.m.-9:50 a.m. (A105)

Laboratory: Tues. 2-4:50 p.m. (A104)

Teaching Philosophy

Explore, Discover, Empower

I believe that students are explorers possessing prior knowledge from past experiences, seeking to add to an already existing foundation to what they know. Students learn in a variety of ways, and the skills and knowledge obtained are key facets to becoming a productive member of society. Students can learn in any environment, but environments that enhance their curiosity and interest, and related to their life are effectively added to their growing knowledge. The teaching environment is one that emphasizes open-ended questions, which initiate student discussion, and emphasize learning for all levels of diverse learners.

My role as a science educator is to expand students' science literacy by increasing their skills and knowledge of the natural world around them. Students will gain a better sense of stewardship as their present and future behaviors toward the environment will have both direct and indirect effects on it. With this in mind, my instructional methods are based on a constructivism paradigm. Ultimately, my goals focus on (a) determining the quantity and quality of students' prior knowledge (b) using science-inquiry to initiate student-centered discussion and problem-solving, and (c) increasing student interest in science by illustrating the importance of the scientific process in their lives and the environment around them.

Course Objectives

The primary goal of this course is to instill a general awareness for the diversity of aquatic and terrestrial vertebrates. Lectures in the course will be devoted primarily to a survey of all the vertebrate phyla, with emphasis on morphology, internal anatomy, systematics, life histories, and adaptive strategies. Lectures may or may not coincide with chapters in your textbook as there are many complex systems and processes that occur in organisms that are best explained using comparative anatomy and evolutionary history.

The laboratory will include "hands-on" examination of specimens from various phyla, student dissections, and individual collections of vertebrates by students. Some labs will require us to go out to the field to collect specimen to bring back to the lab for further examination and identification.

Please keep in mind that there is no extra credit activity, study guides, reviews, etc. for this course. You are expected to perform as an upper level student on the cusp of attaining your undergraduate degree and in the process of preparing to enter a graduate program.

Lecture: Pough & Janis, *Vertebrate Life*, 10/e. Prentice Hall.

Lab: Field notebook, adequate and safe outdoor footwear.

Grading:

<u>Lecture</u>	Quizzes 5 × 10:	50 pts
	Lecture Knowledge Experience #1:	100 pts
	Lecture Knowledge Experience #2:	100 pts
	Lecture Knowledge Experience #3:	100 pts
	Lecture Knowledge Experience #4:	100 pts
	Lecture Knowledge Experience #5:	100 pts
	Lecture Knowledge Experience Final:	150 pts

<u>Laboratory</u>	Laboratory Midterm	100
	Laboratory Final Exam	100
	Lab Report & Field Notebook	100

Note: Scores made on your quizzes, lecture knowledge experiences (1-5) and your comprehensive final will count as 70% of your overall course grade. Your lab grade will count as 30%.

Grade Scale (Knowledge Experience)

- A (≥ 90)
- B (≥80-89)
- C (≥70-79)
- D (≥60-69)
- F (Below 60)

Overall Course Grade Scale

- A = 900 - 1000 points
- B = 800 - 899 points
- C = 700 - 799 points
- D = 600 - 699 points
- F = < 600 points

Attendance: It has been scientifically shown that the more classes you attend, the higher your grade. See the policy on attendance set forth in the College Catalog.

You are expected to attend all lectures and labs, and to perform all the assigned work. Lecture PowerPoint presentations will be available online (see website), and you will be responsible for getting notes from a classmate if you miss class. A significant proportion of the assessment material will not be exclusively evident from the PowerPoint presentations, so attendance and

quality note-taking are important (do not simply copy the words on the PowerPoint – you can review that later).

You must have a legitimate excuse if you are absent on the day of scheduled knowledge experience or lab quizzes/exams. Should you have to make-up any assessment, the instructor has the right to determine if you can or not. **Make-up** is at least 1 week after the selected date of the exam.

Academic Misconduct: Academic misconduct is a violation of the College’s Academic Honor Code. Cheating is strictly prohibited, and the wages of the transgressor is exceedingly difficult.

Finding out Your Grades: Every effort will be made to grade exams and assignments in a timely fashion. Grades will be delivered to you during class, otherwise make an appointment to see me before or after class. You must also meet with me if you wish to appeal a grade, including the final course grade. Due to the **Family Educational Rights and Privacy Act (FERPA), I will not discuss grades via e-mail or over the telephone.**

Responsibilities: It is imperative that you come to class to expand your scientific knowledge because your textbook is only one resource that you will use to prepare yourself for the various concepts that will be introduced in class. There will be a lot of discussions during each class. Your questions are welcomed!

Students with Disabilities: Any student who feels she/he may need an accommodation based on the impact of a disability should contact the Academic Affairs Office immediately to report their disability and qualify to receive accommodations from your professors. Once you have done this, you may meet privately with me, to discuss your specific needs. Although you may report your disability at any time, please attempt to make arrangements within the first two weeks of the semester so all appropriate academic accommodations can be arranged for you. It is important that you do this as soon as possible because accommodations are not retroactive and any grade you make prior to such notification will stand. For additional information, contact the Academic Affairs office.

Please be respectful and turn-off/silence all smart devices.

Tentative Course Calendar Spring

Week	Lecture Topic	Reading	Lab Topic
January 8			Lab1: Fish diversity and Morphology (Lab)
9	Course Objectives Quiz 1		
11	Evolution, Diversity, Classification of Vertebrates	Chapters 1	
14-18	What is a Vertebrate Jawless Vertebrates	Chapter 2 Chapter 3	Lab2: Fish diversity and Morphology (Lab)

	and origin of Jawed Vertebrates		
21	Holiday	No Class	
22			Lab3: Fish-Field survey and collection (East Campus)
23	Living in Water	Chapter 4	
25	Knowledge Experience #1	Chapters 1, 2, 3, 4	
28-Feb.1	Radiation and Diversity of Chondrichthyes	Chapter 6	No Lab
4-6	Radiation and Diversity of Osteichthyes	Chapter 8	Lab4: Complete all fish identifications
8	Quiz 2		
11	Knowledge Experience #2	Chapters 6, 8	
13-15	Origin and Radiation of Tetrapods Extant Amphibians	Chapter 10 Chapter 11	Lab5: Amphibians Dissection
18-22	Extant Amphibians Living on Land	Chapter 11 Chapter 12	Review for Lab
25-27	Living on Land	Chapter 12	Lab Practical Exam Feb. 26
27	Quiz 3		
March 1	Knowledge Experience #3	Chapters 10, 11, 12	
4-8	Spring Break	No Classes	No Lab
11-15	Synapsids and Sauropsids Turtles	Chapter 14 Chapter 16	Lab6: Reptiles & Snakes
18-22	Turtles Lepidosaurs	Chapter 16 Chapter 17	Lab7: Bird Field Survey (East Campus)
25-29	Lepidosaurs Crocodilians	Chapter 17 Chapter 18	Lab8: Bird Field Survey (MMC Campus)
April 1	Quiz 4		
2			No Lab
3	Knowledge Experience #4	Chapters 14, 16, 17, 18	
5	Study Day		
8-12	The Origin and Aviation of Birds Synapsida and the Evolution of	Chapter 21 Chapter 24	

	Mammals		
15-17	Synapsida and the Evolution of Mammals	Chapter 24	Lab 8: Mammals
19	Holiday	Easter	
22	Extant Mammals Primate Evolution and the Emergence of Humans	Chapter 25 Chapter 26	Lab Practical Final April 16th
24	Knowledge Experience #5	Chapters 21, 24, 25, 26	
25	Reading Day		
29	Finals CV due 8-10 a.m.	Comprehensive	



"Mr. Osborne, may I be excused? My brain is full."