

VERTEBRATE BIOLOGY

EBIO2250 – Fall 2018

Instructor: Dr. Renata Durães Ribeiro (Professor of the Practice, Ecology and Evolutionary Biology Dept.)

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Office Hours: 428 Boggs, Mondays 11:00-1:00, Wednesdays 9:00-11:00, or by appointment

Class Time and Location: Tu, Th 12:30-1:45 am, 206 SELabs (Building #14)

Course General Description: Vertebrate Biology is intended to offer a broad examination of the phylogenetic relationships, evolutionary history, novel adaptations, behavior, ecology, and current conservation status of vertebrate animals.

Course Goals: This course is designed to provide an overview of the theory and practice of phylogenetic systematics, to explore the biological diversity, specializations and evolutionary relationships of vertebrate animals, and to explore diverse aspects of the ecology, behavior, and conservation of the major vertebrate groups. Although emphasis will be placed on extant vertebrates, we will also discuss the major extinct lineages, both as a way to emphasize how the dominant biological forms have changed throughout the history of Earth, as well to better understand the evolutionary processes that resulted in modern vertebrate forms. Special emphasis will be put on understanding connections between the form of biological organs and structures and their function, on understanding the historical environmental conditions that promoted the evolution of different vertebrate life forms, and to compare the different evolutionary ‘solutions’ reached by different groups of vertebrates to solve common biological problems.

Learning Outcomes: Students will have the opportunity to develop their ability to read and interpret primary scientific literature, and will routinely work in small groups to discuss analytical questions in class. At the end of this course, I expect students to demonstrate that they have attained the following capabilities, consistent with the learning outcomes for the Ecology and Evolutionary Biology major: (1) appreciate the diversity of extinct and extant vertebrate taxa, (2) be able to develop and critique logical arguments using basic principles of ecology, comparative biology, and phylogenetic systematics, and (3) demonstrate the ability to critically evaluate and communicate scientific evidence.

Prerequisites: EBIO1010/1015 or permission from instructor.

Textbook and other required materials: Pough and Janis. 2018. *Vertebrate Life*. 10th ed. Pearson Education. ISBN 9781605356075. Bring your textbook to all classes for consultation during group activities.

Required readings: Assigned book chapters (usually 1 chapter/class, but occasionally more) are listed in the schedule and should be completed before class. This is paramount for your success in this course, as class group exercises will be based on these readings and will form a large portion of your final grade. Other short supplementary reading materials may also be assigned.

Course website: The course website will be hosted on Canvas (access at tulane.instructure.com). There you will find this syllabus, powerpoint slides, assignments, supplementary materials, as well as any other relevant information. Slides will be posted after each class, under ‘Assignments’. However, it is paramount that you attend every class, as there will be content and concepts discussed in class that may not be reflected in the posted materials.

Assessments: your grade will be based on exams, paper reviews, a field trip assignment, and participation, as described below:

Exams: There will be 3 midterm exams and one final exam. For the final exam, about half of the points will come from the last unit, and half will be over-arching questions pertinent to the cumulative material. All exams will consist entirely or mostly of short answer/short essay questions. You will be able to consult your textbook during exams.

Paper Reviews: Three paper reviews will be assigned throughout the course. These assignments must be turned in no later than at the beginning of class on the day they are due. Late papers will automatically lose 5 points per day they are late. The articles, plus assignment instructions, will be posted on Canvas, under 'Assignments'.

Field trip assignment: We will have a field trip to the Audubon Aquarium of Americas, which will take place on a Saturday – make sure to mark on your calendars! A short assignment based on the field trip will be due on the first day of class following the field trip. Transportation and tickets to the Aquarium will be provided.

Participation: Includes points from attendance, active participation in class exercises and discussions, and may also include homeworks and pop quizzes on assigned reading material.

Grading: The points you earn will be regularly posted on Canvas, typically within a week of the due date. **You are responsible for checking your grades regularly throughout the semester.** Deadline for any re-grade request is **1 WEEK** after the initial grading was returned to the class (not when you picked it up) or the last day of classes, whichever is earlier. Requests submitted beyond this deadline will not be considered. You should direct re-grading requests in person, directly to Dr. Ribeiro.

How to use and interpret the gradebook: The Canvas gradebook for this course (look under 'Grades') will be based on weights and percentages, hence the "total points" values are often higher or lower than your raw score. These values will change as new assessments are added.

Weighting of assessments: Different assignments and exams will be associated with different numbers of points (e.g., the three midterm exams are not necessarily worth the same number of points). The final point totals for each category will be summed, converted to a percentage, and weighted as follows:

Midterm exams (3)	40%
Final exam	20%
Paper reviews (3)	20%
Field trip assignment	10%
Participation	10%

How to estimate your grade: Estimate your grade at any time using the following equations:

First, calculate the % of total points you earned for each item

$$\% \text{ Midterm Exam} = (\text{points you earned on the midterms}) / (\text{points possible on midterms}) \times 100$$

Next, multiply the % values for each item by its weight and then sum

$$\begin{aligned} & (\% \text{ Midterm})(0.40) \\ & + (\% \text{ Final exam})(0.20) \\ & + (\% \text{ Paper reviews})(0.20) \\ & + (\% \text{ Field trip assignment})(0.10) \\ & + (\% \text{ Participation})(0.10) \\ & = \text{Final percent for the course} \end{aligned}$$

Grading Scale (based on percentage of total points earned):

A = 93-100%, A- = 90-92%, B+ = 87-89%, B = 83-86%, B- = 80-82%, C+ = 77-79%, C = 73-76%, C- = 70-72%, D+ = 67-69%, D = 63-66%, D- = 60-62%, F < 59%

Absences: Class attendance is required. You must obtain a written note from your doctor to qualify for any makeup exam. The note must address the specific matter of whether you were medically restricted from attending class on that day (e.g., scheduling a physical exam during a class is not acceptable). Further, you are expected to contact the instructor before the beginning of class. You must provide full documentation within one week. Appropriate accommodations will be discussed between the student and the professor. Failure to comply with these rules will result in a zero on a test or for any graded activity for that particular class. No extra-credit work will be provided on a case-by-case basis.

Honor Code and Student Support

Students must attend class and complete assignments independently (unless otherwise indicated) and on time. Students must adhere to the Tulane Honor Code <http://www.tulane.edu/~uc/honorcode.htm>. Violations of this code are unacceptable. If you violate the code, then you will have a hearing with the Tulane Honor Board. If you are unsure how a particular assignment is affected by the honor code, it is your responsibility to consult with me for clarification.

If you have a learning disability or health concern, please notify Dr. Ribeiro at the beginning of the semester and register with the ERC (Educational Resources & Counseling) at <http://tulane.edu/studentaffairs/disability/students.cfm> so that your needs can be accommodated.

Tulane University recognizes the inherent dignity of all individuals and promotes respect for all people. As One Wave, Tulane is committed to providing an environment free of discrimination and sexual harassment, including sexual assault, domestic and dating violence, and stalking. If you (or someone you know) have experienced gender-based violence, know that you are not alone. Learn more at onewave.tulane.edu.

Strictly Confidential	Mostly Confidential
<i>Except in extreme circumstances, involving imminent danger to one's self or others, nothing will be shared without your explicit permission.</i>	<i>Conversations are kept as confidential as possible, but information is shared with key staff members so the University can offer resources and accommodations and take action if necessary for safety reasons.</i>
Counseling & Psychological Services (CAPS) (504) 314-2277	Coordinator of Violence Prevention (504) 314-2161
Student Health Center (504) 865-5255	Tulane University Police (TUPD) (504) 865-5911
SAPHE Hotline (504) 654-9543	Office of Institutional Equity (504) 862-8083

TENTATIVE SCHEDULE – Subject to change

Week	Class	Date	Topic	Book Ch.	Assignments & Important Dates
1	1	Aug 28	Introduction	1	
	2	Aug 30	Intro to phylogenetic systematics	1	Sunday, Sept. 2nd, midnight: Tree Thinking Quiz due
2	3	Sep 4	What is a vertebrate?	2	
	4	Sep 6	Early vertebrates: Origin of jaw	3	
3	5	Sep 11	Living in water	4	
	6	Sep 13	Cartilaginous fishes	6,7	Paper review 1 due
4	7	Sep 18	Bony fishes	8,9	
	8	Sep 20	The Paleozoic Era	5	
5		Sep 25	EXAM 1 (through Bony Fishes)		
	9	Sep 27	Living on land	12	<i>9/28: Last day to drop without record</i>
6	10	Oct 2	Origin of tetrapods	10	
	11	Oct 4	Amphibians	11	Saturday Oct/6: Aquarium Field Trip (departs campus 9:30am; back to campus 1pm)
7	12	Oct 9	Synapsids and Sauropsids	14	Field trip assignment due
		Oct 11	FALL BREAK		
8	13	Oct 16	Ectothermy	15	Paper review 2 due
	14	Oct 18	Reptiles: Turtles	16	
9		Oct 23	EXAM 2 (through Ectothermy)		
	15	Oct 25	Reptiles: Lepidosaurs	17	<i>10/29: Last day to drop</i>
10	16	Oct 30	The Mesozoic Era	13	
	17	Nov 1	Endothermy	20	
11	18	Nov 6	Dinosaurs, crocs, and birds	18,19,21	
	19	Nov 8	Avian diversity and specializations	22	
12		Nov 13	EXAM 3		
	20	Nov 15	The Cenozoic Era	23	
13		Nov 20	No class		Paper review 3 due
		Nov 22	THANKSGIVING HOLIDAY		
14	21	Nov 27	Evolution of mammals	24	
	22	Nov 29	Mammalian diversity and specializations	25	
15	23	Dec 4	Human evolution	24	
	24	Dec 6	Human impacts	Assigned readings	
FINAL EXAM: Wednesday, December 12, 1-3:30 pm					