

ZOO 4307C – Vertebrate Biodiversity
Sections 08A0 (22370), 08A1 (22382), 1934 (22371), 24CA (22381)
Syllabus for Fall 2019

I. Course Description and Prerequisite

Comparative biology of vertebrates, emphasizing morphology, evolution, ecology and behavior. 4 credits.

This course explores the diversity, evolution, adaptations, and ecology of vertebrates. The lectures and labs are coordinated as much as possible so that laboratory work expands upon information provided through lecture and reinforces an understanding of diversity and adaptation. Labs may include field trips.

Prerequisites: BSC 2011 and BSC 2011L with minimum grade of C.

II. Course Meetings

Lectures: TR periods 5-6, 11:45 a.m.-1:40 p.m., Bartram 211

Labs: Section 08A0 – T periods 7-9, 1:55-4:55 p.m., 120 Carr
Section 24CA – W periods 3-5, 9:35-12:35 p.m., 120 Carr
Section 08A1 – W periods 7-9, 1:55-4:55 p.m., 120 Carr
Section 1934 – R periods 7-9, 1:55-4:55 p.m., 120 Carr

First day of classes: Tuesday 20 August 2019

Last day of classes: Wednesday 04 December 2019

Final Exam: Group 12D, Thursday December 2019, 3:00 – 5:00 p.m. (This time may or may not be used; more details will be announced in class.)

III. Instructors

Course Instructor:

Dr. Nicole Gerlach

Department of Biology

Office: 520 Carr Hall

Office hours: In-class immediately following lecture or by appointment

E-mail: ngerlach@ufl.edu

Teaching Assistants:

Ms. Ellen Humbel

Sections: 08A0, 24CA

Office Hours: by appointment

E-mail: ehumbel@ufl.edu

Mr. Dan Paluh

Sections: 08A1, 1934

Office Hours: by appointment

E-mail: dpaluh@ufl.edu

IV. Course Communications

- A. **Course Website:** <http://lss.at.ufl.edu> (select Canvas); or <https://ufl.instructure.com/courses/377789>
- B. **Contacting Your Instructors:** If you have a question about course mechanics or course material that cannot be answered from the syllabus, course announcements, or the course FAQ, please post it to the Discussion Boards on Canvas (see section VIII. “Getting Help”, below). If you have a question involving a personal/grade-related issue, please e-mail your TA or Dr. Gerlach, as appropriate. **All e-mail correspondence must originate from Canvas or from your @ufl.edu account, have your full name in the body of the e-mail, and contain “ZOO 4307” in the subject line.** E-mails not meeting these requirements may not be recognized by our e-mail filters, and thus may not be answered. Barring unusual circumstances, expect a reply within 24 hours during the week, and 48 hours over the weekend. E-mails and Discussion Board posts are checked at least once per day, but sometimes not more than that.
- C. **Communications From Your Instructors:** Each student is solely responsible for reading and following the instructions, guidelines and schedules in this syllabus, on the course webpage, and announced in class. Not having read the information in this syllabus, on the webpage, or in course announcements will NOT constitute an excuse for missing deadlines, assignments, or other assessments. Please set your preferences in Canvas so that you receive timely notifications of course announcements and other information.

V. Course Resources

A. Textbook

Vertebrate Life, 10 by Pough, F.H., and Janis, C.M. Oxford University Press (publisher), 2018.

Textbook publisher web site: <https://oup-arc.com/access/pough-10e-student-resources>

There will be a current version of the textbook on reserve at the Marston Science Library. Visit the Reserve Materials area to check out this copy.

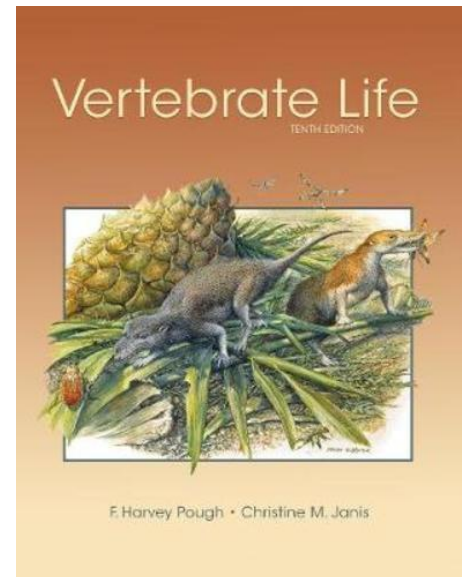
Previous editions of the textbook may be used, but should be used with caution; phylogenies and other information are updated in each edition, and students are responsible for the most recent version (10th edition).

B. Learning Catalytics

We will use the Learning Catalytics Classroom Response System for clicker/quiz questions during class, as well as for out-of-class response questions. Learning Catalytics allows students to use a laptop, tablet, smartphone, etc. to participate in a variety of types of questions. Information on correctly registering for Learning Catalytics will be available on the course site in Canvas. When setting up your account, **you must use your Gatorlink (ufl.edu) e-mail address.** Using an e-mail address other than your UFL e-mail address will result in you receiving NO credit for Learning Catalytics questions.

C. Lab Manual

The required lab manual for this course will be available for purchase from Target Copy.



D. Course Website (Canvas)

All class material - including the syllabus, assignments, announcements, and gradebook – will be posted on the course Canvas website (<https://ufl.instructure.com>). For help with Canvas, call the UF Computing Help Desk at 352-392-4357, or visit the Canvas support website: <http://help.instructure.com/>.

E. Course Fee

The course fee is \$82.16, which covers the cost of specimens and other materials for this course.

VI. Course Objectives

This course explores the structure and function of vertebrates with an emphasis on trends in vertebrate evolution and biodiversity. By the end of the course, students will:

- Be able to explain how diverse vertebrate species have evolved in response to biotic and abiotic challenges, and how these various selective pressures have led to various vertebrate adaptations, including morphological, physiological, ecological, and behavioral traits.
- Understand major events in the evolutionary history of vertebrates, such as the origin of land vertebrates, and be able to place these events in the appropriate geological context.
- Be able to classify vertebrate species to the appropriate phylogenetic group using correct scientific names, and describe the relationships between the major groups of vertebrates, and the synapomorphies that define each group.
- Be able to identify major anatomical structures in diverse vertebrate species, including cartilaginous and bony fishes, amphibians, mammals, reptiles, and birds.
- Be able to look at a living or fossil vertebrate and be able to make logical predictions about its way of life.
- Understand how differences in life history have arisen in various vertebrate groups, and how these differences affect conservation concerns in each group.

VII. Course Policies

A. Time Commitment

The UF College of Liberal Arts and Sciences assumes that each student will devote 3-4 hours per week per credit-hour to each course during the regular semester. Because ZOO 4307C is 4 credits, each student should therefore expect to devote 12-16 hours per week to this course in a 15-week semester.

B. Attendance

Students are expected to attend all scheduled classes, and are responsible for all material presented in lecture, lab and in the assigned readings. Students who miss class are welcome to ask to borrow the notes of their classmates; the instructors will not be responsible for providing notes. Please note that no in-class quizzes or participation points can be made up, regardless of the reason for missing class.

Expectations for lab attendance follow the above and have the following additional specifications: labs are only set up for a few days each week, so there is little opportunity to make-up a missed lab. Notify your instructor immediately if you will miss a lab and if at all possible arrange to attend the lab for one of the other sections. Lab attendance and participation are part of your grade and there will be minimal (=no) opportunity to review the missed material if you do not attend lab. Note that labs meet once a week for three hours – plan accordingly.

C. Quizzes

Quizzes may be given at any time in lecture or lab, without notice. There will be no make-up quizzes during class or afterwards. You are required to attend your registered lab section for all lab quizzes unless

you have a Dean of Students verified excuse or permission of the lab instructors involved. You must arrive within 10 minutes after the start of lab in order to take the quiz. Arriving after 10 minutes or after the quiz has been given will result in a 0 for that quiz.

D. Exams

Students are expected to arrive on time; no extra time will be given for students who arrive late. Students who arrive after the first student finishes the exam will not be allowed to take the exam. Any material covered during the lecture period or assigned in the reading may be included in the lecture exams. This can include textbook reading and illustrations, films, Powerpoint slides, and actual lectures. Take notes!

We will post exam keys that highlight the salient points for which credit is awarded. Please see us immediately if 1) your score is incorrectly summed, or 2) your posted score does not agree with the score on your exam. We will consider other re-grade requests on a case by case basis, however, we will not argue about point assignments. To request a re-grade, write a paragraph explaining why you believe your answer to a question was incorrectly scored, making specific reference to the posted key, and submit to us in office hours (so that an instructor can look over your request and be sure it is clear). Re-grade requests must be submitted within one week of the exam scores being posted.

Make-up exams will **only** be available in cases of medical and/or family emergencies when documented by an accompanying letter from the Dean of Students, or for official academic activities (in which case the instructor should be contacted a minimum of two weeks in advance). The student is responsible for scheduling timely make-up exams with the instructor as soon as possible. Make-up exams due to pre-arranged official academic activities may be scheduled prior to the in-class exam.

Lab exams will be held Wednesday evening the week of the exam during the time for assembly exams. You must sign up for a time slot in advance. Due to the time involved for set-up and breakdown of practical (lab) exams, a missed lab exam should be avoided if at all possible. If you have a conflict with an assembly exam for another course, please let your instructors know at least two weeks before the exam. If unavoidable circumstances result in a missed lab exam or quiz, a make-up will be offered in an alternate format providing the absence was excused, as described above. If the absence is unexcused, there will be no make-up available.

E. Late Work

Assignments should be submitted by the assigned deadline. Late work will be subject to a 20% penalty for every day it is late. For example, an assignment initially worth 10 points will be subject to a 2 point penalty if it is submitted up to 24 hours after the deadline, a 4 point penalty up to 48 hours, etc. Assignments may not be submitted more than four days after the assigned deadline without a notification from the Dean of Students documenting a medical/family emergency, as described above.

Graded lecture assignments should be submitted to the course website by the posted deadline, unless otherwise noted. Graded lab assignments are due at the beginning of the lab session one week after the actual lab work was done, unless otherwise noted. Assignments turned in after the start of the lab session will be considered late work. If you are unable to turn in your work during your regular lab section and are not able to hand it in directly to your instructor, DO NOT leave an assignment at your instructor's office. Rather (1) make a photocopy of your assignment for safekeeping and (2) hand in the original to the staff of the departmental office (220 Bartram Hall) during regular office hours (8 am – 4 pm).

F. Classroom behavior

Readings should be done in advance of class; you are expected to come ready to discuss the topics. Please be courteous to others during both lecture and lab, particularly during in-class discussions. Students exhibiting disruptive behavior in class will be asked to leave, with the subsequent loss of participation points for that day. Use of electronic devices in class to take notes or otherwise participate in classroom activities is approved, but all electronic devices should be set to silent mode before coming to class. Approved electronic devices are laptop computers, cell phones, smart phones, tablets, iPod touch, and

voice recording devices. Other uses of these devices or the use of unapproved devices will be considered disruptive. Unapproved uses of electronic devices include video recorders, digital cameras and MP3 players.

G. Office Hours

Office hours for this course are in the lecture room immediately following lecture, or by appointment. We cannot meet with students on a drop in basis outside of posted office hours.

H. Grammar

Correct grammar, punctuation, spelling, capitalization and paragraphing should be used in any college level submission, including exams and typed reports. We will take note of spelling and grammar and we will grade accordingly. There are multiple cases where two distinct groups of vertebrates may have names with similar spelling, so be careful: spelling counts!

VIII. UF Policies

A. Academic Honesty

All students registered at the University of Florida have agreed to comply with the following statement:

“I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.”

In addition, on all work submitted for credit the following pledge is either required or implied:

“On my honor I have neither given nor received unauthorized aid in doing this assignment.”

Cases of plagiarism or other academic dishonesty will not be tolerated, and may result in grade penalties or other sanctions. If you have knowledge of any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at: <https://catalog.ufl.edu/UGRD/student-responsibilities/>.

B. Accommodations for Students With Disabilities

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: <http://www.dso.ufl.edu/drc/>. Note that the student should provide documentation of a requirement for accommodation to Dr. Gerlach **by the second week of classes** when possible. No accommodations are available to students who lack this documentation, and accommodations are not retroactive. It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

C. Drop/Add/Withdrawal

A student can drop/add during the drop/add period with no penalty. After drop/add, a student who drops will receive a W until the date listed in the academic calendar. After that date, the student may be assigned an “E” (fail). **Note: it is the responsibility of the STUDENT to withdraw from a course, not the instructor. Failure to participate/complete the class is NOT a drop.**

D. Teacher Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.ua.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they

receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

IX. Getting Help

A. Computing Problems

For issues with technical difficulties in Canvas, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP - select option 1
- <https://lss.at.ufl.edu/help.shtml>

It is each student's responsibility to check their LearningCatalytics gradebook in a timely fashion to be sure their submissions are being properly recorded. **For problems with Learning Catalytics, call the following support number:** 1- 800-677-6337 or visit <https://learningcatalytics.com/pages/support>.

B. University Support Services

College can be a very stressful time in a person's life. Resources are available on campus to help students meet academic goals and solve personal problems that may interfere with their academic performance. If you find that you are having difficulty emotionally or academically, there is substantial support available. See "[A Self Help Guide for Students](#)" or contact one of the following services:

1. [UF Counseling and Wellness Center](#), Radio Rd Facility, 392-1575
2. [Dean of Students Office](#), 202 Peabody Hall, 392-1261
3. [Career Resource Center](#), Reitz Union, 392-1601
4. [CLAS Academic Advising Center](#), Farrison Hall, 100 Fletcher Drive, 392-1521
5. [UF Field and Fork Pantry](#), 564 Newell Dr., 294-3601

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Dean of Students (202 Peabody Hall, 392-1261) for support. Furthermore, please notify your instructor(s) if you are comfortable in doing so. This will enable us to provide any resources that we may possess.

C. Other Questions

If you have non-tech-support questions about other aspects of the course, check the following sources first to see if it is already answered, **before** e-mailing your instructors:

- Course Syllabus
- Course Announcements (this is the primary means that your instructor has to communicate with you in a timely manner)
- Course FAQ Discussion Boards

If you still cannot find the answer to your questions:

- If it is a question that others might find useful to know the answer to as well, post it to the discussion board.
- If it is a question specific to you (e.g. account or grade specific), contact Dr. Gerlach or your TA via e-mail.

Asking for help does not make you weak! Not understanding something does not mean you're stupid! No one understands everything, and no one can do it all on their own. One of the least appreciated but most useful things you can learn in college is what to do when you're facing a challenge you may not be able to overcome on your own. I want you to succeed, and there are tons of resources out there for the asking, so please: ASK!

X. Assessments and Grading

A. Course Structure

Final grades will be based on performance in both lecture and lab.

	Graded Item	Percent of Final Grade
Lecture:	Lecture Exam 1	13.33
	Lecture Exam 2	13.33
	Lecture Exam 3	13.33 (40% total for 3 lecture exams)
	Lecture Participation	20 (includes homework, Learning Catalytics, Get to Know a Vertebrate Presentation, and other in-class participation/quizzes)
Lab:	Lab Practical 1	10
	Lab Practical 2	10
	Lab Participation	15 (includes lab homework and lab quizzes)
	Local Biodiversity Assignment	5

B. Assignments

- **Get to Know a Vertebrate (counts towards lecture participation)**
Working in pairs, students will give a short presentation (~8-10 minutes) in lecture during the course of the semester that covers the phylogeny, natural history, and peer-reviewed research on an unusual or unfamiliar vertebrate species of their choice. For full credit, students must submit a brief summary of their report to the course website by the night *before* their presentation.
- **Conservation Reports (counts towards lecture participation)**
Several times over the course of the semester, students will be asked to research and write a short essay detailing a conservation concern of their choice that affects a particular taxonomic group of vertebrates. Students should include information about the source of the conservation threat, which species are affected, what aspects of their biology make them susceptible, and what (if anything) can or has been done to alleviate the concern. These essays should include references to news media stories as well as primary literature related to the conservation issue at hand. Students may also be asked to complete similar-length writing assignments on other topics (e.g. response pieces to readings, etc.)
- **Local Biodiversity Assignment**
Students will complete a series of observations and identifications of local vertebrate species as part of a semester-long project. Observations, identifications, and descriptions will be uploaded by each student to the website <http://www.inaturalist.org>. More details will be available on the course website.

C. Grading

Minimum grade cutoffs are listed below. These cutoffs will not be raised; in other words, if you receive

93% of the possible points, you are guaranteed to earn an A grade. A curve may be applied to individual exams and/or to the final scores, depending on the class average, and will be communicated clearly if applicable. However, we will *not* adjust or round-up grades on an individual basis for any reason.

Point Range (%)	Letter Grade
≥ 93	A
≥ 90	A–
≥ 87	B+
≥ 83	B
≥ 80	B–
≥ 77	C+
≥ 73	C
≥ 70	C–
≥ 67	D+
≥ 63	D
≥ 60	D–
< 60	E

Note that the current UF policy for assigning grade points is available at the following undergraduate catalog web page: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

- D. **Incomplete (“I”)**: If a student has completed the majority of the course work with a passing grade and particular DOCUMENTED circumstances prevent completion of the course in the time allotted, the student may, with the agreement of the instructor, be assigned an “I” pending resolution of the grade. All incompletes MUST be resolved by the end of the following term or the student will receive a grade of “E” (failing).
- E. **Special Treatment**
Please do not request individual special treatment regarding grading at the end of the semester; **we do not adjust grades for individuals for any reason**. Plan to do well on all exams, quizzes, and other assignments from the beginning of the semester; if you are having difficulty in the class, please let your instructors know sooner rather than later.

XI. Disclaimer

This syllabus represents the current plans and objectives; however, schedules, requirements, and assignments may change throughout the semester as the need arises. Such changes, communicated clearly, are not unusual and should be expected.

XII. Weekly Schedule

NOTE: The following schedule is tentative; lecture topics and coverage may change. The updated schedule and specific reading assignments will be announced on the course website throughout the semester.

Wk #	Lec #	Date	Lecture Topic	Chapter	Lab Topic
1	1	T 20 Aug	Introduction & Geological History		No Lab
	2	R 22 Aug	Phylogenetics	1.1-1.3	
2	3	T 27 Aug	Chordates	1.4-1.5, 2.1-2.2	Phylogeny, Chordates, Agnatha
	4	R 29 Aug	Features of Vertebrates	2.3-2.6	
3	5	T 03 Sep	Jawless Fishes and the Evolution of Jaws	3	Living in Water: Form & Function
	6	R 05 Sep	Living in Water I	4.1-4.3	
4	7	T 10 Sep	Living in Water II	4.4-4.6, 15.3	Sharks
	8	R 12 Sep	Chondrichthyes I	6, 7.1, 7.4	
5	9	T 17 Sep	Chondrichthyes II	7.2-7.3, 7.5	Bony Fish
	10	R 19 Sep	Osteichthyes I	8, 9.1	
6		T 24 Sep	EXAM 1	Covers Lectures 1-9	Museum Collections Field Trip
	11	R 26 Sep	Osteichthyes II	9.2-9.8	
7	12	T 01 Oct	Living on Land I	12.1-12.3	Amphibians
	13	R 03 Oct	Living on Land II / Early Tetrapods	12.4-12.7, 10.1- 10.2, 15.4	
8	14	T 08 Oct	Amphibia I	10.3, 11.1, parts of 11.2-11.5	LAB EXAM 1 (W 09 Oct)
	15	R 10 Oct	Amphibia II	11.2-11.6, 15.3	
9	16	T 15 Oct	Amniotes & Diapsids	10.4, 14, 19.1	Reptiles I
	17	R 17 Oct	Turtles	19.2, 16	
10	18	T 22 Oct	Lepidosaur I	19.3, 17	Reptiles II
	19	R 24 Oct	Lepidosaur II	17	

11		T 29 Oct	EXAM 2	Covers Lectures 10- 18	FLMNH / NATL Field Trip
	20	R 31 Oct	Crocodylia	19.4-19.7, 18	
12	21	T 05 Nov	Dinosauria	19.7-19.11	Archosaurs I
	22	R 07 Nov	Aves I	21	
13	23	T 12 Nov	Aves II	22	Archosaurs II
	24	R 14 Nov	Endothermy, Early Synapsids	20, 24	
14	25	T 19 Nov	Mammalia I: Monotremes & Marsupials	24, 25	Mammals
	26	R 21 Nov	Mammalia II: Eutheria - Afrotheria	25	
15	27	T 26 Nov	Mammalia III: Eutheria - Boreoeutheria	25	NO LAB
		R 28 Nov	Thanksgiving – NO CLASS		
16		T 03 Dec	EXAM 3**	Covers Lectures 19- 26	LAB EXAM 2 (W 04 Dec)
		R 05 Dec	Reading Days – No Class		
		R 12 Dec	FINAL EXAM PERIOD (3:00 – 5:00 p.m.)**		

** The third exam may be held on the last day of class or during the scheduled final exam period; this will be determined during the first week of class. If the exam is held during finals week, there will be a lecture during the class period on 03 Dec. More details will be announced in class.