

ZOO 4307C – Vertebrate Biodiversity

Sections 08A0, 08A1, 08A2

Syllabus for Fall 2015

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 3-4, 9:35-11:30, Bartram 211

Labs: Section 08A0 – T periods 7-9, 1:55-4:55 p.m., 120 Carr
Section 08A1 – W periods 7-9, 1:55-4:55 p.m., 120 Carr
Section 08A2 – R periods 7-9, 1:55-4:55 p.m., 120 Carr

First day of classes: Monday 24 August 2015

Last day of classes: Wednesday 09 December 2015

Final Exam: Group 14A, Monday 14 December 2015, 7:30-9:30 a.m.

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. Sharon Holte

Sections: TBA

Office: TBA

Office Hours: TBA

E-mail: sharonholte@ufl.edu

Mr. Luciano Soares

Sections: TBA

Office: 609A Carr

Office Hours: TBA

E-mail: lsoares@ufl.edu

IV. Course Communications

- A. **Course Website:** <http://lss.at.ufl.edu> (select Canvas); or <https://ufl.instructure.com/courses/320643>
- 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 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, 9e by Pough, Janis, and Heiser. Pearson (publisher), 2013.

Textbook publisher web site:

<http://www.mypearsonstore.com/bookstore/vertebrate-life-9780321773364>

Previous editions of the textbook should be used with caution; phylogenies and other information may be updated in each edition, and students are responsible for the most recent version (9th edition).

A copy of this textbook is on reserve at the Marston Science Library.

B. **Lab Manual**

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

C. **Course Website (Canvas)**

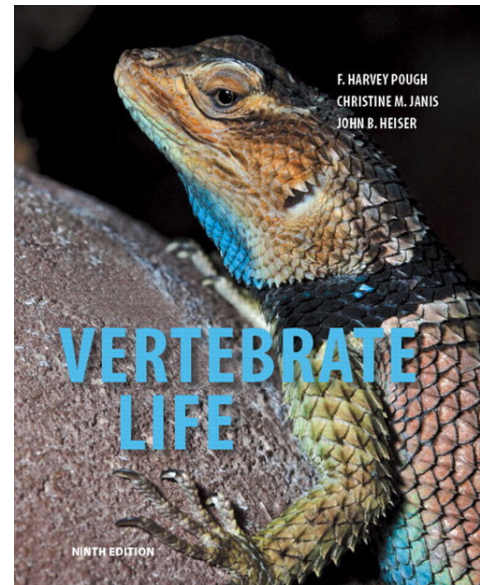
All class material - including the syllabus, assignments, announcements, and gradebook – will be posted on the course Canvas website (<https://ufl.instructure.com>). For help with Canvas, call the UF Computing Help Desk at 352-392-4357, or visit the Canvas support website: <http://help.instructure.com/>.

D. **Classroom Response System**

This course may utilize a classroom response system (“clickers”) during the semester. Further information about registration and scoring will be provided in class.

E. **Course Fee**

The course fee is \$62.48, 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 verifiable 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. Any material covered during the lecture period or assigned in the reading may be included in the lecture exams. This can include textbook 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 re-grades on a case by case basis, however, we will not argue about point assignments. To request a regrade, write a brief paragraph explaining why you believe your answer to a question was incorrectly scored, make 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). Regrade 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. 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. You must sign up for a time slot in advance. One time will be 6:00-7:30 pm, and the second will be 7:30-9:00 pm. 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 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. 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.

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 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/ugrad/current/advising/info/student-honor-code.aspx#honesty>.

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

Anonymous course evaluations will be open via UF's online evaluations system (<https://evaluations.ufl.edu>) near the end of the semester; you will receive e-mail notifications of when the evaluations open.

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>

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 on 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](#), Farrior Hall, 100 Fletcher Drive, 392-1521

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.

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	10
	Lecture Exam 2	10
	Lecture Exam 3	10
	Final (Lecture Exam 4)	10
	Get to Know a Vert	5
	Lecture Participation	15
	(includes homework and other in-class participation/quizzes)	
Lab:	Lab Practical 1	10
	Lab Practical 2	10
	Lab Participation	15
	(includes lab homework and lab quizzes)	
	Field Report	5

B. Assignments

- **Get to Know a Vertebrate (counts towards lecture participation)**
Each student will give a short presentation (~5-7 minutes) in lecture during the course of the semester. This presentation will count towards the lecture participation score. Each presentation will introduce a species of vertebrate, either extinct or extant, and describe its biology. Presentations should include the scientific name, phylogenetic relationships, a picture of the organism, information on where (and when, for fossils) it lives, and a description of its natural history/ecology – the weirder,

the better! Students should also find and read at least one recent article from a peer-reviewed journal relating to their chosen species of vertebrate, and summarize the results in their presentation. 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.) The lowest score on these writing assignments will be dropped and will not count towards the final grade.

○ **Field Report**

Students will complete a formal field report as part of their lab grade. You will complete this assignment by yourself, but for the field observation section you may work in groups of 2 or 3. Meet with your lab partner(s) in an area you expect to find several species of vertebrates (e.g. a park or preserve, a veterinary clinic, a 'wild' area on campus, or your favorite fishing spot). Note weather conditions, date, and time. Observe/photograph and identify *at least 25* species of vertebrates. Try to get as many vertebrates in one spot as possible. Write the field report to describe your findings. Briefly state your purpose, where you were, what you did, and how you observed your animals in an Introduction. For every taxon that you ID, include the scientific name, who first gave it a scientific name (authority), and the year (e.g. "Yellow-bellied Sapsucker, *Sphyrapicus varius* (Linnaeus, 1766)") at least once along with its Class and current Family name. Provide at least one photograph or illustration of the animal in a Figure (with caption and attribution), distributional data, and biogeographical, ecological, and/or conservation information. Try to find out something new and interesting about each animal. Use the report to force yourself to dig for information, the more the better! Use in-text citations. Include Conclusions (What can you say about the area you visited? What did you learn?) and Literature Cited sections; peer reviewed sources only, please use an appropriate citation style (e.g. APA, Ecology, Evolution).

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 or to the final scores, depending on the class average, and will be communicated clearly. 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 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 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 posted on the course website throughout the semester.

Week #	Lecture #	Date	Lecture Topic	Chapter	Lab Topic
1	1	T 25 Aug	Introduction, Evolution, and Phylogenetics	1	No Lab
	2	R 27 Aug	Origin & Features of Vertebrates I	2	
2	3	T 01 Sep	Origin & Features of Vertebrates II	2	Phylogeny, Chordates & Agnatha
	4	R 03 Sep	Jawless Fishes and the Evolution of Jaws	3	
3	5	T 08 Sep	Living in Water I	4	Sharks
	6	R 10 Sep	Living in Water II	4	
4	7	T 15 Sep	Chondrichthyes I	5	Fish I
	8	R 17 Sep	Chondrichthyes II	5	
5		T 22 Sep	EXAM 1		Fish II
	9	R 24 Sep	Osteichthyes I	6	
6	10	T 29 Sep	Osteichthyes II	6	Amphibians
	11	R 01 Oct	Living on Land I	8	
7	12	T 06 Oct	Living on Land II / Early Tetrapods	9	LAB EXAM 1 (W 07 Oct)
	13	R 08 Oct	Amphibia I	10	
8	14	T 13 Oct	Amphibia II	10	Reptiles I
	15	R 15 Oct	Early Amniotes	11	
9		T 20 Oct	EXAM 2		Reptiles II
	16	R 22 Oct	Turtles	12	
10	17	T 27 Oct	Early Diapsids	14	Birds I
	18	R 29 Oct	Squamates I – Lizards	13	
11	19	T 03 Nov	Squamates II – Snakes	13	Birds II
	20	R 05 Nov	Crocodylia	16	
12		T 10 Nov	Dinosauria	16	No Lab (Veterans' Day)
		R 12 Nov	EXAM 3		
13	21	T 17 Nov	Aves I – Paleognaths	17	Museum Field Trip
	22	R 19 Nov	Aves II – Neognaths	17	
14	23	T 24 Nov	Early Synapsids	18, 22	No Lab
		R 26 Nov	Thanksgiving – No Class		
15	24	T 01 Dec	Mammalia I	20, 21, 23	Mammals
	25	R 03 Dec	Mammalia II	20, 21, 23	
16	26	T 08 Dec	Mammalia III	20, 21, 23	LAB EXAM 2 (W 09 Dec)
		R 10 Dec	Reading Days – No Class		
		M 14 Dec	FINAL EXAM (7:30 – 9:30 am)		