

ZOO 4307C – Vertebrate Biodiversity
Sections 08A0 (20154), 08A1 (20155), 1934 (20164), 24CA (20165)
Syllabus for Fall 2020

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

Lecture videos in this course will be posted online and can be watched asynchronously. The scheduled lecture times will be used for in-class student presentations and/or office hours. More details can be found on the course website.

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

Most weeks labs will be asynchronous posted material that students can complete on their own schedule. However, some weeks will have synchronous meetings (for discussions, etc.) during the scheduled lab times below. More details can be found on the course website.

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

First day of classes: Monday 31 August 2020

Last day of classes: Wednesday 09 December 2019

Final Exam: Wednesday, 16 December 2019, 12:30 – 2:30 p.m.

III. Instructors

Course Instructor:

Dr. Nicole Gerlach

Office hours: Via Zoom: Tues/Thurs from 11:45-12:15 or immediately following presentations, or by appointment

E-mail: ngerlach@ufl.edu

Teaching Assistants:

Ms. Ellen Humbel

Office Hours: by appointment

E-mail: ehumbel@ufl.edu

Ms. Rachel Keeffe

Office Hours: by appointment

E-mail: rkeeffe@ufl.edu

TA Office Hours: Via Zoom: Fridays from 3-4, or by appointment

IV. Course Communications

- A. **Course Website:** <http://lss.at.ufl.edu> (select Canvas); or <https://ufl.instructure.com/courses/406318>
- 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>

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**

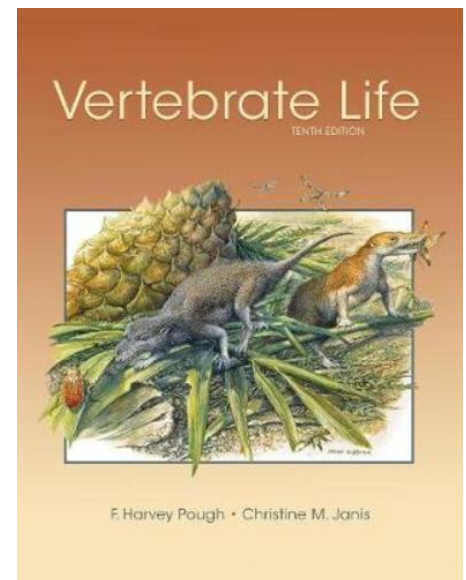
We will use the Learning Catalytics Classroom Response System for clicker/quiz questions in both lecture and lab. Learning Catalytics allows students to use a laptop, tablet, smartphone, etc. to participate in a variety of types of questions. Information on correctly registering for Learning Catalytics 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. **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. **Course Fee**

This semester there is no additional course fee for this course.



VI. Course Philosophy

Fall 2020 is not going to be what any of us would consider a “normal” semester. We are all trying to adapt to online teaching and learning as best we can in the midst of an ongoing pandemic that contributes an enormous amount of additional stress and uncertainty to our daily lives. My hope is that this course will serve as an outlet for some of that stress, rather than an additional source of it, and that it will give you a chance to connect with your peers, learn more about vertebrates and their evolution and natural history, and pursue topics that interest you within the scope of the class.

To this end, I propose that all of us (myself included) adopt an approach to this course that is based on the following principles:

- **Flexibility:** Because this is a new situation for all of us, we’re all going to need to be flexible. Some things that we try as we shift this class online will work, but it’s inevitable that some things won’t. We should all expect to have to adjust on the fly so that we can achieve a learning experience that is as beneficial as possible for as many people as possible.
- **Communication:** Along with the flexibility to make changes as we go comes the need to communicate about those changes. I pledge to do my best to keep the lines of communication open, and to let you know what’s happening in the course as frequently and as clearly as I can. I ask that you do the same – if there is something that is hampering your performance in the course, or that would make things easier for you to do well, please let me know so we can see if it’s something we can change.
- **Compassion:** We’re all humans, and many aspects of the current situation can be quite challenging – even taking care of our basic physical needs requires more time, energy, and mental effort than usual. The more empathy, kindness, and grace we can extend – both to others and, equally importantly, to ourselves – the better able we will be to meet those challenges.
- **Community:** Online learning can be incredibly isolating, but we can do things to fight that isolation. The success of this course is going to depend on us coming together as a community, not only to learn together, but also to learn from each other, and to support one another. Many of the assignments in this course are built around this goal of students learning about something that interests them, and sharing that knowledge with others in the course. The more that everyone participates in these activities, the more we all get to learn (your instructors included!)

VII. 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.

VIII. 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

While much of this class is asynchronous, there are some synchronous components at which student attendance and participation is expected. These include the “in-class” presentations by your fellow classmates, which will happen live via Zoom during the scheduled lecture times, and occasional discussions of the primary literature, which will happen live via Zoom during the scheduled lab times. More details about the scheduling of these synchronous meetings, and about how participation will be scored, will be available on the Canvas course website.

Unavoidable emergency circumstances (e.g. severe illness, hospitalization, family emergencies, hurricane-related power outages, etc.) that prevent you from attending the synchronous aspects of class require documentation (e.g. a doctor’s note or a letter from the Dean of Students office (<https://care.dso.ufl.edu/instructor-notifications/>)) in order for it to count as an excused absence.

While this course is entirely online, we hope that all members of this course will follow physical distancing guidelines and good hygiene practices in the rest of their courses and in the rest of their lives. If you are experiencing COVID-19 symptoms, please use the UF Health screening system and follow the instructions on whether you are able to attend class. Course materials will be provided to you with an excused absence (see above), and you will be given a reasonable amount of time to make up work.

- Guidance from the CDC on symptoms of coronavirus: <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>
- UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms: <https://coronavirus.ufhealth.org/screen-test-protect/covid-19-exposure-and-symptoms-who-do-i-call-if/>

C. Quizzes and Exams

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, the lectures themselves, and any supplemental videos. Similarly, any material covered in the lab may be included in the lab quizzes unless it is explicitly marked as optional. Take notes!

Exams and lab quizzes will be administered online using Honorlock proctoring software. Students must have a functioning webcam and microphone (integrated or external), and must have the Chrome browser installed. Students will need to show their Gatorlink ID at the beginning of each Honorlock Proctoring section. Additional information about taking Honorlock-proctored exams will be available on the course website.

Dr. Gerlach will post exam keys that highlight the salient points for which credit is awarded. We will consider re-grade requests on a case by case basis, however, we will not argue about point assignments (i.e. how much a particular element of a question was worth). To request a re-grade, write a brief paragraph explaining why you believe your answer to a question was incorrectly scored, making specific reference to the posted key, and submit it via the “Submissions Comments” feature in Canvas on the appropriate assignment. 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.

Because lab quizzes are available for an entire week, make-up quizzes will only be offered in the case of extended illnesses or family emergencies, documented by the Dean of Students (as above).

D. Late Work

All written assignments should be submitted to Canvas 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.

LearningCatalytics questions and Canvas quizzes close at the posted deadline, and may not be submitted late.

E. Classroom behavior / Zoom guidelines

Your display name in Zoom should include your real name (not “gatorfan2020”, etc.). Please keep your microphone muted unless you are actively speaking. For the sake of getting to know one another and building community, I’d prefer for students to have their cameras on during class, but if you need to have your camera off due to privacy concerns, internet bandwidth issues, etc., that’s fine as well. If your dog or cat wanders on-camera during class, please do not apologize; they are all good doggos/kitties yes they are, and we are happy to see them!

Please be respectful of your fellow students, both during the live Zoom meetings, and in your interactions on Canvas. This is particularly important in discussion boards and peer reviews where you are voicing commenting on the work of other students. Students who persist in being rude or disrespectful will be blocked from future participation (with corresponding loss of points). Recording, photographing or screencapping, downloading, or otherwise distributing any material from this course is strictly forbidden.

There are currently no plans to record the live Zoom sessions. If this changes, I will notify students at that time, and before any recordings begin. Students who do not wish to have their face or voice recorded should turn off their cameras and/or ask questions via the Chat feature in Zoom.

F. Office Hours

Drop-in office hours with Dr. Gerlach will occur from 11:45-12:15 on days with no student presentations. If there are multiple questions, office hours can extend past 12:15. On days with student presentations, office hours will begin immediately following the presentations. Office hours with the TAs will be on Fridays from 3-4 p.m. All office hours will be held via Zoom.

G. 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!

IX. 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; falsification of information; unauthorized collaboration with others on exams, quizzes, and other assignments; or other forms academic dishonesty will not be tolerated, and will result in grade penalties and/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: <https://disability.ufl.edu/>. Students should provide their DRC accommodation letter to Dr. Gerlach as soon as possible, ideally by the second week of classes. 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/>.

X. 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://iss.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](#), Farrior 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
- Weekly Schedules, List of Graded Work, and other Canvas pages
- Course Announcements (this is the primary means that your instructors have 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. We want you to succeed, and there are tons of resources out there, so please: ASK!

XI. 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	12
	Lecture Exam 2	12
	Lecture Exam 3	12
	Lecture Learning Catalytics	8
	Get to Know a Vertebrate	4
	Conservation Essays	8
	<u>Weekly Discussions</u>	<u>4</u>
	Total Lecture	60
Lab:	Lab Learning Catalytics	4
	Lab Quizzes	10
	Lab Assignments	20
	<u>Local Biodiversity Assignment</u>	<u>6</u>
	Total Lab	40

B. Assignments

- **Conservation Reports**
Each student will be asked to research and write three short (~750 word) essays 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. Each student will also be responsible for peer-reviewing the essays of two of their classmates for each assignment. These peer reviews will be submitted via Canvas, due one week after the due date for the essay.
- **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.
- **Get to Know a Vertebrate Presentations**
Students will each give a short presentation (~10 minutes) live during the scheduled lecture time over the course of the semester. This presentation should cover the phylogeny, natural history, and peer-reviewed research on an unusual or unfamiliar vertebrate species of their choice. Students are also expected to attend and participate (ask questions) during their classmates' presentations. Details on the participation requirements will be available on Canvas.
- **Learning Catalytics**
We will use the Learning Catalytics Classroom Response System for summary/review questions after

each lecture, and for each week in lab. Lecture LC questions will be due by 11:59 p.m. on the day of the lecture; Lab LC questions will be due by 5:00 p.m. on Fridays.

○ **Weekly Discussions**

Each week we will have a short weekly discussion assignment in Canvas. These discussions are meant to be fast (should take no more than 10-15 minutes), fun, and to help foster a sense of community among students. Each week, students are expected to answer the discussion prompt, and then reply to at least two of their classmates. The two lowest scores for these discussions will be dropped.

○ **Lab Quizzes**

Short, closed-book quizzes over the lab material will be given on a weekly or bi-weekly basis. These quizzes will be administered through Canvas and proctored via Honorlock. More details will be available on Canvas.

○ **Lab Assignments**

Each week in lab will have some form of assignment for you to complete that addresses the lab material from that week. The exact nature of these assignments may vary week-to-week, but all files will be submitted through Canvas.

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.

XII. 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.

XIII. 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 01 Sep	Phylogenetics	1.1-1.3	NO LAB
	2	R 02 Sep	Chordates	1.4-1.5, 2.1-2.2	
2	3	T 08 Sep	Features of Vertebrates	2.3-2.6	Phylogeny, Chordates, Agnatha
	4	R 10 Sep	Jawless Fishes and the Evolution of Jaws	3	
3	5	T 15 Sep	Living in Water I	4.1-4.3	Living in Water: Form & Function
	6	R 17 Sep	Living in Water II	4.4-4.6, 15.3	
4	7	T 22 Sep	Chondrichthyes I	6, 7.1, 7.4	Sharks
	8	R 24 Sep	Chondrichthyes II	7.2-7.3, 7.5	
5	9	T 29 Sep	Osteichthyes I	8, 9.1	Bony Fish
		R 01 Oct	EXAM 1	Covers Lectures 1-8	
6	10	T 06 Oct	Osteichthyes II	9.2-9.8	Museum Collections Field Trip
	11	R 08 Oct	Living on Land I	12.1-12.3	
7	12	T 13 Oct	Living on Land II / Early Tetrapods	12.4-12.7, 10.1- 10.2, 15.4	Amphibians I
	13	R 15 Oct	Amphibia I	10.3, 11.1, parts of 11.2-11.5	
8	14	T 20 Oct	Amphibia II	11.2-11.6, 15.3	Amphibians II
	15	R 22 Oct	Amniotes & Diapsids	10.4, 14, 19.1	
9	16	T 27 Oct	Lepidosauers I	19.3, 17	Reptiles I
	17	R 29 Oct	Lepidosauers II	17	
10	18	T 03 Nov	Turtles	19.2, 16	Reptiles II
	19	R 05 Nov	Crocodylia	19.4-19.7, 18	

11		T 10 Nov	EXAM 2	Covers Lectures 9- 18	Archosaurs I
	20	R 12 Nov	Dinosauria	19.7-19.11	
12	21	T 17 Nov	Aves I	21	Archosaurs II
	22	R 19 Nov	Aves II	22	
13	23	T 24 Nov	Endothermy, Early Synapsids	20, 24	Start Mammals Lab
	24	R 26 Nov	Thanksgiving – NO CLASS		
14	25	T 01 Dec	Mammalia I: Monotremes & Marsupials	24, 25	Mammals
	26	R 03 Dec	Mammalia II: Eutheria - Afrotheria	25	
15	27	T 08 Dec	Mammalia III: Eutheria - Boroeutheria	25	NO LAB
		R 10 Dec	Reading Days – No Class		
		W 16 Dec (12:30- 2:30 p.m.)	EXAM 3 – Covers Lectures 19-26		