Vertebrate Evolution and Ecology (ZOO 4310C)
Spring 2024, Section 0001, 4 credits

The course calendar can be found at the end of the syllabus

Instructor: Dr. Gregg Klowden (pronounced "Cloud - in")

Office Hours: When – Mondays 11:00a-1:00p, Wednesdays 10:00a-2:00p, & Fridays 11:00a-1:00p

How: By appointment only:

- To schedule an appointment, go to: https://calendly.com/dr_klowden/office_hours
- Appointments must be scheduled at least 24 hours in advance.

Where: On Zoom on Webcourses

- Go to the Office Hours page on Webcourses for the Zoom link (Must make an appointment first)
- If you prefer to meet in person, contact Dr. Klowden and we can arrange a time.

E-mail: You may contact me via (A) the email inside Webcourses or (B) your UCF email at gklowden@ucf.edu

I receive a large volume of emails from several courses. To help me help you, you must include:

+ A subject with (A) the course name (Vertebrate Evolution) and (B) a brief description of your question (e.g. Vertebrate Evolution – Question about frog lecture)
+ Your first and last names in the message body

- If your message does not conform to the above guidelines, it may go unanswered or be delayed
- Due to confidentiality, I will only reply to questions emailed within Webcourses or from your Knights email.
- I will try to respond to emails within 48 hours however, response time may be greater.
- Please plan accordingly by not waiting to the last minute to contact me with questions or concerns.
- Questions about grades must be discussed during office hours or using the Webcourses email.

Graduate Teaching Assistant: David Roach <David.Roach@ucf.edu>

Class Meeting Times: Lecture: Tuesdays and Thursdays 11:30-12:50; Lab - Thursdays 8:00-11:20

- All lectures, labs, exams, and quizzes are in-person.

Class Location: BSFS 102 (BSFS = Biological Sciences Field Station (aka Biological Field Research Center (BFRC) or Building 92).

Course Prerequisite: BSC 2010C, BSC 2011C, PCB 3044, PCB 3063 with a grade of 'C' or better, or C.I.

Course Description: Vertebrate evolution and ecology, based on the paleontological and ecological literature. The laboratory places heavy emphasis on classification/identification and field research techniques.

Course Outline: Aldo Leopold declared: "There are some who can live without wild things, and some who cannot." This class is for those, like me, who cannot. It will blend natural history and ecological and evolutionary theory with the practical aspects of studying one group of "wild things" - the vertebrate animals. In lecture, we will address the systematics and natural history of all the vertebrates: fishes, amphibians, reptiles, birds and mammals. Lab will be devoted to as much hands-on experience as possible. You will learn some of the methods that biologists use to learn where vertebrates occur, what controls their abundance, how they interact with each other and their environment, etc. The goal is to provide you with some background and experience which will better equip you to begin independent or graduate-level research, to work as a field biologist, or just to become more aware of the "wild things" around you.

Course Objectives:

- To gain a better understanding and appreciation for fish, amphibian, reptile, bird, and mammal diversity.
- To understand the evolutionary relationships among the major vertebrate groups and to introduce relevant ecological and evolutionary hypotheses underlying these relationships.
- To understand the unique anatomical, physiological, and behavioral characteristics which make each major vertebrate group distinct.
- To demonstrate the relationship between form and function, habit and habitat.
- To provide hands-on experience learning techniques used by research ecologists to identify, capture, and study vertebrates in the wild.

Required Resources:

A. Webcourses: Vertebrate Evolution and Ecology is a web-enhanced class. Announcements, lecture notes, grades, study tips, etc. will be made available at this site. Before emailing me, please check this site for answers to frequently asked questions.

B. Journal Articles: To obtain PDFs of scholarly articles you must have internet access to the UCF library.

Recommended Resources:

Lecture – I derive the lecture material from many journal and text sources. The primary texts I use are:

A. Pough, F. H., C. M. Janis, and J. B. Heiser. 2012. Vertebrate Life, 9th Edition. Pearson Benjamin Cummings.
B. Linzey, D. W. 2020. Vertebrate Biology, 3rd edition. The Johns Hopkins University Press.
C. Kardong, K. V. 2019. Vertebrates – Comparative anatomy, function, evolution, 8th ed. McGraw Hill.

Labs - For lab and field work we will supply the following field guides but I highly recommend them for your own personal library:

Birds: A. *National Geographic Field Guide To The Birds Of North America*, 7th Edition By Dunn and Alderfer
and/or B. *The Sibley Guide to Birds of Eastern North America, 2nd edition*. 2016. By D. A. Sibley.
C. Phone apps – iBird, Audubon, ebird,
Fishes: D. *Peterson Field Guide To Freshwater Fishes*, 2nd Edition By Page & Burr
Rept/Amphib: E. *A Field Guide To Reptiles And Amphibians Of Eastern And Central North America*, 4th ed, By Conant & Collins
F. iPhone app - Audubon Reptiles and Amphibians: A Field Guide to North American Reptiles and Amphibians
Mammals: G. *Peterson Field Guide To The Mammals Of North America*, 4th Edition By Fiona Reid

Student Responsibilities:

Lectures

It is to your advantage to regularly attend lectures and to be on time. Out of respect for your peers, please do not disrupt class by being tardy. If this is unavoidable then you should sit near the door to reduce disruption to the class. All cell phones should be turned OFF (not on vibrate) before entering the classroom. Students should not disrupt other students (or the instructor) in class by talking unless instructed to do so by the instructor. Anyone texting during lecture or lab or using her/his computer for reasons not related to class will be asked to leave for the day.

Lecture Exams

There will be 3 lecture exams. The 3rd lecture exam will occur during the final exam period. None of the lecture exams will be comprehensive, however complete understanding of information on later exams may require knowledge of previously covered material. The questions will be predominantly short answer essays but may also include multiple choice, fill in the blank and other formats. All questions will pertain to material covered in lectures but not lab. Exams will be challenging. To be adequately prepared it is critical that you stay caught up and do not cram at the last minute. Bring a #2 pencil, eraser, and student ID with you to each exam.

Late for the exam policy - If you arrive late for any exam you will be allowed to take the test if no one has yet turned in an exam. However, you must turn in the exam at the regular scheduled end of the test. You will not be allowed extra time unless a documentable emergency has occurred.

Missed Exam Policy:

1. Make-up exams will be provided *only* for students with a valid, documented reason for missing an exam or other required class, you must provide Dr. Klowden with appropriate documentation from a competent authority (physician, coach, counselor, etc.). Falsified documentation will be dealt with according to university academic honesty polices. Acceptable absences include major illness, serious family emergencies, special curricular or professional requirements (e.g. attending a scientific meeting), court-imposed legal obligations, military obligations, certain religious holidays, and participation in official university-sponsored activities (e.g. intercollegiate athletics). Excuses from relatives (including relatives who are doctors, dentists, attorneys, etc.) will NOT be accepted. Work- or travel-related absences will NOT be considered valid excuses (e.g. "I had to cover someone else's shift", "my parents booked airplane tickets").
2. When foreseeable, you must contact Dr. Klowden prior to the absence to make arrangements for completion of assignments.
3. For unforeseeable absences, you must contact Dr. Klowden within 24 hours after missing the exam and provide *documentation signed by a doctor, police officer, judge, coach, etc. within one week*.
4. Make up exams will have different questions than the original exam but will be of similar difficulty.
5. Unexcused absence from an exam will result in a failing grade for the missed exam.

Lecture Exam Review

After exams have been graded if you would like to review your exam you may do so in-person the following week after the lab exam.

Labs – All labs will occur in BSFS 105 or other locations.

Labs are an integral - and FUN! - part of this course and should be taken seriously. The University of Central Florida provides access to a tremendous diversity of prepared slides, preserved specimens and skeletons, and supplies vans and equipment for field labs and trips at considerable expense. Please take care with all lab equipment so that it remains in good shape for your peers.

Attendance is mandatory for ALL labs. You must arrive on time and remain until excused. For EACH of the 1st two labs missed your course grade will be reduced by 10% each. If you miss 3 labs you will receive an F for the course. Similarly, if you arrive late or leave early your grade will be reduced. The ONLY exceptions to this policy are for legitimate, documentable circumstances. Authorized absence must include written documentation from a competent authority (physician, coach, counselor, etc.). Acceptable absences are major illness, serious family emergencies, special curricular or professional requirements (e.g. attending a scientific meeting), court-imposed legal obligations, military

obligations, severe weather conditions, religious holidays, and participation in official university-sponsored activities such as intercollegiate athletics. It is your responsibility to contact Dr. Klowden prior to or as soon as is possible following an absence. An authorized absence does not excuse you from any missed work. You are individually and entirely responsible for all information, announcements, assignments, and/or handouts that you miss during an absence. Work missed due to unauthorized absence cannot be made up and a grade of zero will be recorded. Work missed due to an authorized absence must be made up or will be assigned a grade of zero. Even if your absences are excused, if you miss 3 or more labs you will receive an F.

Labs will consist of both indoor and outdoor (field) labs.

Indoor - Students will observe preserved, skeletal and slide specimens within each of the major vertebrate groups. Students will learn the key unique characteristics used to identify and differentiate groups (e.g. Families).

Lab Exams

There will be 2 lab exams. These exams will be in a " lab practical" format consisting of a number of stations with 2 questions at each station. You will have 2 minutes to answer the questions and then must move to the next station. After completing all stations, you will have 5 additional minutes to briefly return to any desired stations. At each station there will be preserved specimens, dissected specimens, slides, etc. similar to those observed during labs. Questions may ask you to identify the taxonomic group (YES spelling counts so practice, practice, practice!), name which of the specimens shown are most closely related, identify a labeled structure or its function, or something about the ecology of the organism (e.g., its distribution or preferred habitat or food). Answers will generally consist of 1 or 2 words. There is a lot of material on each exam and you need near instant recall of the information, making it essential that you spend a substantial amount of time reviewing the material prior to the lab exam.

Lab Quizzes

Lab quizzes are designed to encourage you to stay caught up. It is to your benefit to take these seriously as success on lab quizzes is likely to enhance your chances of success on lab exams. Lab quizzes will require knowledge of the phylogeny, common and scientific names, and other specific details from lab. Specific areas of focus for each quiz will be announced prior to each quiz.

Outdoor (Field) Labs

We will have several field trips and outdoor "field" labs. Outdoor labs will likely extend beyond the scheduled lab time into the scheduled lecture time. In some of these labs we will try to capture animals and will learn techniques used by field ecologists to learn where animals occur, what controls their abundance, and how they interact with each other and their environment. Handling of live animals by the students is at the discretion of the instructor. Care must be taken to insure that the animal will not be injured or endangered. It is forbidden for any student to handle a venomous reptile or other dangerous animals and may result in a grade of F for the class. The three U. S. herpetological societies have put together guidelines for the use of live amphibians and reptiles in research and education: http://www.asih.org/sites/default/files/documents/resources/guidelinesherpsresearch2004.pdf.

For all outdoor field labs you must bring plenty of water and wear long pants, long sleeves, socks and close toed shoes that can get wet and dirty since you are likely to encounter waist high vegetation, poison ivy, biting insects, rain, mud, etc. and may be wading in the water. If you have something to do after this lab you may want to bring a change of clothes. Labs will occur rain or shine unless the weather is severe. So, please bring a rain coat on rainy days. If you do not bring sufficient water and wear proper clothing, you will not be permitted to participate in the outdoor lab (and receive an unexcused absence). When off campus, we will all ride together in vans to the designated site. Be on time for lab as we will leave promptly and if you are late, you will miss your ride (and receive an unexcused absence)! Absolutely, positively no personal vehicles are allowed on field trips.

Required and recommended equipment to bring to each outdoor lab:

Required:

1. **Water** - bring plenty (i.e. not just 1 small bottle) as we will be outdoors in the sun for many hours.
2. Long pants, long sleeves, socks and closed toe shoes that can get wet and dirty
3. Personal medications – allergy, headache, bee sting kit if allergic to bee stings, etc.
4. Field notebook and pencils

Recommended:

5. Facemask – I recommend a facemask (N95, KN95, surgical) in the vans to reduce disease spread among your peers.

6. Hat	8. Insect repellent	10. Field guides	12. Camera	14. Wet wipes or hand sanitizer
7. Sunblock	9. First aid kit	11. Lunch and snacks	13. Hand towel	15. Backpack

Field notebooks:

Detailed field notes are an extremely valuable part of natural history collections. They are used extensively for museum research, conservation, and management. For example, the distribution and abundance of plants and animals changes over time, due to natural causes as well as human-mediated impacts on the environment. By looking back at field notes from 100 years ago, we can accurately document the changing status of biodiversity in a given area.

You should maintain a field notebook in which you make notes before, during, and after field labs. Include instructions, notes, data, results, descriptions, pictures, graphs, sketches, and anything else that may act as a detailed record of all you observe or think while in the field. At first when you're learning to identify animals, you won't know what you're looking at. In that case, you should describe the animal as best you can. Once you've learned to positively identify a species, it isn't necessary to repeat the description each time you make a new account of that species. All results and observations should be written directly in the notebook and temporary notes should not be made on random pieces of paper. Mistakes in the lab notebook should be crossed out with a single line. You may find that this information is needed at a later time and if scribbled or whited out will be unreadable.

To facilitate accurate note keeping, a waterproof Write-in-the-rain notebook will be supplied for you. You should only use a pencil to write since pens generally smear if they get wet. Notebooks should be kept up to date and should be completed while in the field since recall of important details at a later date will be greatly reduced.

Each day's work MUST include the following labeled sections:

A. Date – I prefer the format DD MMM YYYY (e.g. 12 Jan 2012) since 1/6/12 could mean Jan 6 or June 1.
B. Times – I prefer 24-hour format (e.g. 13:00 to 15:30 h) rather than am and pm. You must include both:
    a. Start and end times
    b. More specific times associated with various activities and animal captures.
C. Researcher's names – e.g., "Vertebrate Evolution class" or for future reference it is best to include specific names.
D. Location – Complete and precise description and GPS coordinate if available.
    e.g. Econlockhatchee Sandhills Conservation Area, 15227 Lake Pickett Road, Orlando, Orange County, Florida 32816, Latitude 28.587672°N, Longitude -81.155791° W (*Download Google Earth or other latitude/longitude app to your phone)
E. Weather – temp, cloud cover, rain etc.
F. Activities – General description of what you did and why you did it (objective/purpose).
G. General location description (e.g. habitat, topography, important features, etc.)
H. Data – either directly written into notebook or transcribed from datasheets (indicate if transcribed).
    i. A list of individuals and species seen or captured
    ii. Time (e.g. 14:35 h) each was seen/ captured
    iii. Where each individual was located (Description and GPS point if possible)
    iv. Habitat description where encountered (e.g. In oak/pine forest w/ dense palmetto, on slash pine trunk, 1 m off ground)
    v. What it was doing or how it sounded (e.g. was eating an frog).
    vi. Measurements taken (e.g. body dimensions or weight)(If applicable)
    vii. Description (e.g. color, pattern, external parasites observed etc.)
    viii. Specimen and/or location sketches (optional)
I. Description (and sketches) of equipment used
J. Description of techniques used
K. Other: Drawings of location, trap locations, sketches of animals or key characteristics, etc.
    These do not need to be in a distinct section but can be placed in the appropriate location in other sections.
L. Overall summary and comments – Recap the day, what went well & did not, things to change or remember for next time, etc.

For more hints on keeping a field notebook see the attachment at the end of this syllabus.

Field lab summaries:

Several times you will need to submit a summary of the labs. Due dates are listed in the schedule.

Summaries must include:

1) A PDF copy of the relevant pages from your field notebook; All pages must be combined into a single PDF, not individual JPGs.
2) A thorough and complete written summary and evaluation of the day's activities. In addition to summarizing the day's activities, you should also include an evaluation of what you learned, liked, and disliked and why.

Grades will be based on organization, accuracy, clarity, thoroughness, and overall writing quality.

Lab Participation:

I expect you to have a good attitude and to actively participate. This not only means that you are present in all labs but that you are prepared, actively work to improve your understanding of the subject, and assist where needed without being asked. Ask questions and seek answers both alone and in conjunction with your classmates. You will quickly discover that working outdoors trying to collect ecological data is a challenging endeavor that is generally enjoyable but can at times be uncomfortable, exhausting and monotonous. Please try to keep a good attitude and help your classmates whenever possible. In addition to the learning benefits that active participation will bestow upon you, it will also be reflected in your grade. Dr. Klowden and the TA will observe and evaluate your preparedness, general attitude, and enthusiasm in all labs. Your course grade may be reduced if it is deemed that your participation is particularly poor.

Academic Activity Verification

To meet the registrar's requirement for documentation of your participation in this course, all faculty members are required to document students' academic activity at the beginning of each course. To document that you began this course, please complete the academic activity verification assignments in Webcourses by the deadline in the course schedule. Failure to do so may result in a delay in the disbursement of your financial aid.

Optional assignment:

This optional assignment is not extra credit however like extra credit it can boost your grade. As opposed to extra credit, which can be neutral or help your grade, this optional assignment can benefit your grade IF you do a good job but could hurt your grade if you do a poor job. I design it this way as a way to encourage you to take the assignment seriously and to do a good job and to avoid you turning in a hastily prepared assignment in hopes of getting a point or two. However, do not be dissuaded from doing this in fear of receiving poor credit. If you take the assignment seriously, you will receive full credit and it will benefit you. Just be sure to take it seriously and do a good job. If you choose to do this optional assignment, it will replace 3% of your lowest exam (lecture or lab) grade. In other words, that exam will be worth 3% less towards your final course grade and this assignment will be worth 3% towards your final course grade.

Optional assignment Instructions:
From the list at the end of the syllabus, choose 1 journal article to review. Your review should be 850-1000 words in length, no more, no less. Reviews are due by 11:59 pm on the date shown in the schedule below. You may however turn them in earlier if you choose. Reviews should be submitted via the appropriate link on Webcourses. Late assignments will not be accepted for any reason.

Summaries must be entirely your own work. All reviews will be submitted to Turn-it-in to check for plagiarism so be certain that ALL words are your own. When taking notes it is recommended to place any copied material in quotes to be sure you avoid using other people's writing in your final summary. Unless absolutely essential, quotations should be avoided. You are encouraged to discuss the articles with classmates however discussion is where it should end. In other words be sure each of you writes a completely original review. Plagiarism will not be tolerated and will result in a failing grade for the course or expulsion from UCF.

Your reviews should include 6 distinctly labeled sections:

1) *Article Citation* - An initial identification of the article (author, title of article, title of journal, year of publication).
2) *Summary* - A brief summary of the range, contents and argument of the article. You may summarize section by section but since the review is short it may better to pick up the main themes only. This section should not normally take up more than 1/3 of the total review.
3) *Discussion* - A critical discussion of 2-3 key issues raised in the article. This section is the core of your review. In this portion you should discuss the originally assigned article including what was particularly well done and what was not (e.g. methods or conclusions you disagree with or think were analyzed poorly and why, what was explained poorly, what is missing, etc.). Use should use other, perhaps more recent, journal articles to support your arguments. For example you might say that a more recent study contradicts certain findings, or that methods they used were improper and that another study addressed this more appropriately, or that the conclusions they drew were inappropriate and that another study highlights this incongruity. Be sure to make clear the author's own argument before you criticize and evaluate it and remember that it is seldom useful to criticize a writer for not doing something they never intended to do.
4) *Final evaluation* – A brief discussion of the overall contribution the article has made to your understanding of the topic (and maybe its importance to the development of knowledge in this particular area or discipline, setting it in the context of other writings in the field).
5) *Additional citations* – Citations of other journal articles referenced in your discussion.
6) *Word count* - Number of words from your summary section (Can easily be automatically counted in Microsoft Word).

Grades: Your final grade should reflect your abilities as a vertebrate zoologist. While a single exam or assignment is not necessarily a good estimator of your ability, a variety of exams and other evaluative tools (including the professional opinion of your instructors) will provide an accurate assessment. Grades do not necessarily measure how hard you've worked, how much you've learned, or even how much you've matured as a biologist, and they certainly do not reflect your value as a person. In college in general, and in this class in particular, there is much to be learned outside the classroom (e.g. in departmental seminars) and you will need to balance your personal goals and aspirations versus grades per se.

Your final grade will be determined by your performance as follows:

Performance Evaluation:		**Proportion of grade**
Lecture exams	- Highest grade	21%
	- Middle grade	17%
	- Lowest grade	14%
Lab Exams	- Highest	18%,
	- Lowest	12%
Lab quizzes		5 x 2% = 10%
Field lab notebooks and summaries*		3 x 2% 6%
Bird ID Courses		2%
		100%

* Assignments are due by 11:59 pm. Late assignments will not be accepted.

Grading Scale

A	93.0 – 100%	B+	87.0 - 89.9%	C+	77.0 - 79.9%	D+	67.0 - 69.9%	F	0 - 59.9%
A-	90.0 - 92.9%	B	83.0 – 86.9%	C	70.0 - 76.9%	D	63.0 – 66.9%		
		B-	80.0 - 82.9%			D-	60.0 - 62.9%		

Webcourses is not particularly useful for calculating your grade in this class since each of your exams counts a different proportion of the grade, depending on your performance on each. So, an easy way to address this is by using a grade calculator such as the one at: http://thegradecalculator.com. This will give you a rough idea of your grade, based on your exam scores. However, it may not predict your exact score due to rounding errors.

Final Grade Rounding Policy: The overall semester grade will not be rounded. Either you have the grade or you don't. In other words, a 79.99 is still a 'C+'. No matter where I set the limit, there will ALWAYS be someone who is close to the next grade. As I strive for consistency and fairness there will be no exceptions to this policy and no extra credit or other adjustments will be made.

Study suggestions:

This is a fast paced and detail rich class. To succeed it is essential that you stay caught up by reading, attending lectures, and studying the material daily. Students who prepare for the exams by simply attending lectures and reading their notes several times are unlikely to succeed on the exams. To succeed it is best to make your learning more active and focused. Active learning involves practicing the same skills you must perform on exams. In other words, quick recall of the appropriate information and applying it. To do this you should:

A) Treat studying like it's a job. Set a schedule, show up for work, pay attention (i.e. no multitasking) while on the job. A general rule of thumb is 2-3 hours for every hour spent in class.
B) Keep up with readings and assignments. Students who keep up tend to do much better in an online course than those who do not.
C) Consistently meet with the professor and TA to address questions and clarify concepts.
D) **Practice by Self-Testing**. Write your own essay style study questions: If you are like most people, you do not remember what you read/hear in sufficient detail to then be tested. However, it may be unclear which details you remember/understand and which you do not. The point in study questions is to figure out prior to an exam what you don't understand or have trouble remembering and work on that material. You do not want to realize during an exam that you don't understand something as well as you thought you did as it is now too late! For methods on how to most effectively write questions and use these questions, be sure to consult the study tips section on Webcourses.

Academic Integrity:

Why should I care?

Beyond moral considerations, academic dishonesty diminishes the quality and value of a UCF education. If prospective employers, graduate schools, etc. have a poor perception of UCF, it undermines the value of your education and decreases your likelihood of advancement. If you are aware of academic dishonesty it is important to report it as quickly as possible. Otherwise you risk devaluation of your degree and hard work. Non-reporting is also considered academic dishonesty.

What should you do if you are aware of another student cheating?

You should contact Dr. Klowden <gklowden@ucf.edu> in private as soon as possible after the incident has occurred. Your reporting will remain confidential.

What is considered academic dishonesty?

Students should familiarize themselves with UCF's Rules of Conduct at http://osc.sdes.ucf.edu/process/roc.
According to Section 1, "Academic Misconduct," students are prohibited from engaging in:

- *Unauthorized assistance*: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course-related material also constitutes cheating.

- *Communication to another through written, visual, electronic, or oral means*: The presentation of material which has not been studied or learned, but rather was obtained through someone else's efforts and used as part of an examination, course assignment, or project.

- *Commercial Use of Academic Material*: Selling of course material to another person, student, and/or uploading course material to a third-party vendor without authorization or without the express written permission of the university and the instructor. Course materials include but are not limited to class notes, Instructor's PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc.

- *Falsifying or misrepresenting the student's own academic work*.

- *Plagiarism*: Using or appropriating another's work without any indication of the source, thereby attempting to convey the impression that such work is the student's own.
    - Turning in someone else's work as your own.
    - Copying words or ideas from someone else without giving credit.
    - Failing to put a quotation in quotation marks.
    - Giving incorrect information about the source of the information.
    - Changing words but copying the sentence structure of a source.
    - Copying so many phrases from a source that it makes up a substantial part of your work, even if you give credit.
    - *Multiple Submissions*: Submitting the same academic work more than once without written permission of the instructor.
    - *Helping another violate academic behavior standards*.

Much plagiarized work is easily detected and university regulations on academic misconduct will be strictly enforced.

For more information about Academic Integrity, consult the International Center for Academic Integrity http://academicintegrity.org

For more information about plagiarism and misuse of sources, see "Defining and Avoiding Plagiarism: The WPA Statement on Best Practices" http://wpacouncil.org/node/9

Unauthorized Use of Websites and Internet Resources

There are many websites claiming to offer study aids to students, but in using such websites, students could find themselves in violation of academic conduct guidelines. These websites include (but are not limited to) Quizlet, Course Hero, Chegg Study, and Clutch Prep. UCF does not endorse the use of these products in an unethical manner, which could lead to a violation of our University's Rules of Conduct. They encourage students to upload course materials, such as test questions, individual assignments, and examples of graded material. Such materials are the intellectual property of instructors, the university, or publishers and may not be distributed without prior authorization. Students who engage in such activity are in violation of academic conduct standards and could face course and/or University penalties. Please let me know if you are uncertain about the use of a website so I can determine its legitimacy. You are permitted to create your own study guides (e.g. Quizlets) but you are not permitted to distribute these to anyone except your current herpetology classmates.

If you need assistance, I recommend you visit me during my office hours and make use of the Student Academic Resource Center (SARC), the University Writing Center (UWC), the Math Lab, etc.

If you are aware of others engaging in such activity or find materials from my classes posted on these sites, I would appreciate your bringing this to my attention. We all play a part in creating a course climate of integrity.

Unauthorized Use of Technology for Graded Work

If you were in a classroom setting taking a quiz, would you ask the student sitting next to you for an answer to a quiz or test question? The answer should be no. This also applies to graded homework, quizzes, tests, etc. Students are not allowed to use GroupMe, WhatsApp, or any other form of technology to exchange course material associated with a graded assignment, quiz, test, etc. when opened on Webcourses. The completion of graded work in an online course should be considered a formal process: Just because you are not in a formal classroom setting being proctored while taking a quiz or test does not mean that the completion of graded work in an online course should not be treated with integrity.

The following are some examples of what is considered academic misconduct. This is certainly not an all-inclusive list and there are many other possible ways to be in violation.

- Taking a screen shot of an online assignment, posting it to GroupMe or WhatsApp, and asking for assistance.
- Answering, giving advice, assistance, or suggestions on how to complete an assignment that is posted to GroupMe or WhatsApp.
- The use of outside assistance from another student or by searching the internet, Googling for answers, use of websites such as Quizlet, Course Hero, Chegg Study, etc.
- Gathering to take an online quiz or test with others and sharing answers in the process.

AI Tools

Use of AI prohibited. Only some Artificial Intelligence (AI) tools, such as spell-check or Grammarly, are acceptable for use in this class. Use of other AI tools via website, app, or any other access, is not permitted in this class. Representing work created by AI as your own is plagiarism, and will be prosecuted as such. Check with your instructor to be sure of acceptable use if you have any questions.

Responses to Academic Dishonesty, Plagiarism, or Cheating

Students should also familiarize themselves with the procedures for academic misconduct in UCF's student handbook, The Golden Rule <http://goldenrule.sdes.ucf.edu/docs/goldenrule.pdf>. UCF faculty members have a responsibility for students' education and the value of a UCF degree, and so seek to prevent unethical behavior and when necessary respond to academic misconduct. Penalties can include a failing grade in an assignment or in the course, suspension or expulsion from the university, and/or a "Z Designation" on a student's official transcript indicating academic dishonesty, where the final grade for this course will be preceded by the letter Z. For more information about the Z Designation, see http://goldenrule.sdes.ucf.edu/zgrade.

Course Accessibility Statement:

The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need disability-related access in this course should contact the professor as soon as possible. Students should also connect with Student Accessibility Services (SAS) http://sas.sdes.ucf.edu/ (Ferrell Commons 185, sas@ucf.edu, phone 407-823-2371). Through Student Accessibility Services, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential access and accommodations that might be reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student.

Campus Safety Statement

Emergencies on campus are rare, but if one should arise during class, everyone needs to work together. Students should be aware of their surroundings and familiar with some basic safety and security concepts.

- In case of an emergency, dial 911 for assistance.
- Every UCF classroom contains an emergency procedure guide posted on a wall near the door. Students should make a note of the guide's physical location and review the online version at <http://emergency.ucf.edu/emergency_guide.html>.
- Students should know the evacuation routes from their classrooms and have a plan for finding safety in case of an emergency.
- If there is a medical emergency during class, students may need to access a first-aid kit or AED (Automated External Defibrillator). To learn where those are located, see <https://ehs.ucf.edu/automated-external-defibrillator-aed-locations>.
- To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to <https://my.ucf.edu> and logging in. Click on "Student Self Service" located on the left side of the screen in the toolbar, scroll down to the blue "Personal Information" heading on the Student Center screen, click on "UCF Alert", fill out the information, including e-mail address, cell phone number, and cell phone provider, click "Apply" to save the changes, and then click "OK."
- Students with special needs related to emergency situations should speak with their instructors outside of class.
- To learn about how to manage an active-shooter situation on campus or elsewhere, consider viewing this video https://youtu.be/NIKYajEx4pk.

COVID-19

COVID-19 can affect anyone, and the disease can cause symptoms ranging from mild to very severe. We know that certain things can make people more likely to get very sick with COVID-19. We also know that certain settings and activities can make you more likely to get infected with the virus that causes COVID-19.

Understanding the risk of COVID-19 for yourself and those around you can help you make informed decisions to keep yourself and other people safe and healthy. There are many ways your actions can help protect you, your household, and your community from severe illness from COVID-19. In addition to basic health and hygiene practices, like handwashing, to protect yourself and those around you, it is recommend that you:

- Stay Up to Date with COVID-19 Vaccines
- Wear an N95 or surgical grade mask when indoors or in crowded areas
- Get Tested for COVID-19 If Needed
- Follow Recommendations for What to Do If You Have Been Exposed
- Stay Home If You Have Suspected or Confirmed COVID-19
- Seek Treatment If You Have COVID-19 and Are at High Risk of Getting Very Sick
- Avoid Contact with People Who Have Suspected or Confirmed COVID-19

COVID-19 vaccines help your body develop protection from the virus that causes COVID-19. Although vaccinated people sometimes get infected with the virus that causes COVID-19, staying up to date on COVID-19 vaccines significantly lowers the risk of getting very sick, being hospitalized, or dying from COVID-19. CDC recommends that everyone who is eligible get a booster and stay up to date on their COVID-19 vaccines.

Notifications in Case of Changes to Course Modality

Depending on the course of the pandemic during the semester, the university may make changes to the way classes are offered. If that happens, please look for announcements or messages in Webcourses@UCF or Knights email about changes specific to this course.

In Case of Faculty Illness

If the instructor falls ill during the semester, there may be changes to this course, including having a backup instructor take over the course. Please look for announcements or mail in Webcourses@UCF or Knights email for any alterations to this course.

Deployed Active-Duty Military Students:

Students who are deployed active duty military and/or National Guard personnel and require accommodation should contact their instructors as soon as possible after the semester begins and/or after they receive notification of deployment to make related arrangements.

UCF Cares:

During your UCF career, you may experience challenges including struggles with academics, finances, or your personal well-being. UCF has a multitude of resources available to all students. Please visit UCFCares.com if you are seeking resources and support, or if you are worried about a friend or classmate. Free services and information are included for a variety of student concerns, including but not limited to alcohol use, bias incidents, mental health concerns, and financial challenges. You can also e-mail ucfcares@ucf.edu with questions or for additional assistance. You can reach a UCF Cares staff member between 8 a.m. and 5 p.m. by calling 407-823-5607.
If you are in immediate distress, call 407-823-2811 to speak with a counselor at Counseling and Psychological Services 24/7 or call 911.

Knights Pantry

The Knights Helping Knights Pantry is committed to serving UCF students by providing basic needs including food, clothing, and personal hygiene items to foster continued academic success and increase retention for students in need. Access to the Knights Pantry is reserved for UCF Students who present a valid Student ID upon entry. Students are limited to 5 food items per day. There is currently no limit for toiletries or clothing.

Location: Ferrell Commons, Room 7H - 101 // Phone: 407-823-3663 // Hours: Mon-Fri: 10am-6pm, Sat. 12pm-5pm

The Knights Pantry relies on the support of students, faculty, and staff. Donations of food, toiletries, or clothing (business professional or casual) can be dropped off at the Pantry in Ferrell Commons or to one of our many donation boxes around campus. Campus donation boxes can be found on the UCF Mobile app maps. In addition to tangible donations, the Knights Panty accepts monetary donations to ensure food is available when demand is high. Also, the Pantry would not be able to keep its doors open without the help of student volunteers, so consider volunteering.

See Next Page For Schedule

SCHEDULE (subject to change as necessary)

Week	Dates	Lecture and Lab Topics	Exam, quiz, assignment due*
1	Tu Jan 9	Introduction LECTURE 1 – Systematics refresher	
	Th Jan 11	FIELD LAB 1 – Introduction / Bird id (8:00a) LECTURE 2 – Vertebrate evolutionary origins & general characteristics	
2	Tu Jan 16	LECTURE 3 – Jawless vertebrates and intro to jawed vertebrates	Tu 1/16 – Bird ID Courses (by 11:59p)
	Th Jan 18	FIELD LAB 2 – Field Trip to Orlando Wetlands (8:00a)	Sa 1/20 - Lab notebook 1 (Labs 1-2)(by 11:59p)*
3	Tu Jan 23	LECTURE 4 – Living in Water	
	Th Jan 25	INDOOR LAB – Fishes (8:00a) LECTURE 5 – The Chondrichthyes (Sharks, rays, etc.)	Th 1/25 - Lab quiz 1 (Fishes)
4	Tu Jan 30	LECTURE 6 – The Osteichthyes (Bony fishes and Tetrapods)	
	Th Feb 1	INDOOR LAB – Amphibians (8:00a) LECTURE 7 – Rhipidistia (Lungfishes and Tetrapods) LECTURE 8 – Origin of Tetrapods	Th 2/1 - Lab quiz 2 (Amphibians)
5	Tu Feb 6	Lecture exam 1	Tu 2/6 – Lecture exam 1 (Lectures 1-8)
	Th Feb 8	FIELD LAB 3 – Tosohatchee Wildlife Management Area (8:00a)	
6	Tu Feb 13	LECTURE 9 – Intro to Batrachomorphs (Amphibians & relatives) LECTURE 10A – Lissamphibia (Frogs, Salamanders, & Caecilians)	
	Th Feb 15	INDOOR LAB – Lab Exam Review + Practice Lab Exam (8:00a)	Th 2/15 - Practice lab exam
7	Tu Feb 20	Lab exam 1	Tu 2/20 – Lab exam 1 (Fishes and Amphibians)
	Th Feb 22	FIELD LAB 4 – TBA (8:00a)	Sa 2/24 - Lab notebook 2 (Labs 3-4)(by 11:59p)*
8	Tu Feb 27	LECTURE 10B – Lissamphibia (continued)	
	Th Feb 29	INDOOR LAB – Non-avian reptiles (8:00a) LECTURE 11 – Origin of the Amniotes LECTURE 12 – Introduction to Sauropsids (Reptiles) LECTURE 13A – The Lepidosaurs (Tuatara, Lizards, and Snakes)	Th 2/29 - Lab quiz 3 (Reptiles)
9	Tu Mar 5	LECTURE 13B – The Lepidosaurs (continued)	
	Th Mar 7	INDOOR LAB – Birds (8:00a) LECTURE 14 – The Archosaurs 1 – Early and Crocodilians	Th 3/7 - Lab quiz 4 (Birds)
10	Tu Mar 12	Lecture exam 2	Tu 3/12 – Lecture exam 2 (Lectures 7-13)
	Th Mar 14	FIELD LAB 5 – TBA (8:00a)	
	Mar 18-20	Spring Break - No Classes	
11	Tu Mar 26	LECTURE 15 – The Archosaurs 2 – Turtles	
	Th Mar 28	INDOOR LAB – Mammals (8:00a) LECTURE 16 – The Archosaurs 3 – Dinosaurs (including birds)	Th 3/28 - Lab quiz 5 (Mammals)
12	Tu Apr 2	LECTURE 17 – Birds - Avian specializations	
	Th Apr 4	INDOOR LAB – Lab Exam Review + Practice Lab Exam (9:00a) LECTURE 18 – The Synapsida and the Evolution of Mammals LECTURE 19A – Modern Mammals	Th 4/4 - Practice lab exam
13	Tu Apr 9	Lab exam 2	Tu 4/9 - Lab Exam 2 (Non-avian reptiles, birds, mammals)
	Th Apr 11	FIELD LAB 6 – TBA (8:00a)	
14	Tu Apr 16	LECTURE 19B – Modern Mammals (continued)	
	Th Apr 18	FIELD LAB 7 – TBA (8:00a)	Sa 4/20 - Lab notebook 3 (Labs 5-7)(by 11:59p)*
15	Mo Apr 22	- - - - -	Mo 4/22 - Optional assignment due**
Finals	**Th Apr 25 10:00a**	Lecture exam 3	Th 4/25 – Lecture exam 3 (Lectures 14-19) ******10:00a - Note earlier than normal*****

*Assignments are due by 11:59 pm. A 10% penalty will be incurred for each day late.
**Optional assignments may not be turned in late, under any circumstance.

"I'm a great believer in luck, and I find the harder I work the more I have of it."
-Thomas Jefferson

Dr. Klowden reserves the right to modify the syllabus as needed. Students will be informed of changes.

Optional Journal Articles

Aguirre, Windsor E., Kaitlyn E. Ellis, Mary Kusenda And Michael A. Bell. 2008. Phenotypic variation and sexual dimorphism in anadromous threespine stickleback: implications for postglacial adaptive radiation. Biological Journal of the Linnean Society 95:465–478.

Burke AC, CE Nelson, BA Morgan, and C Tabin. 1995. Hox genes and the evolution of vertebrate axial morphology. Development 121:333-346.

Estes, JA, et al. 2011. Trophic Downgrading of Planet Earth. Science 333:301-306.

Grant, Peter R. and B. Rosemary Grant. 2002. Darwin's Finches Unpredictable Evolution in a 30-Year Study of Darwin's Finches. Science 296:707-711.

Grant, Bruce W. 1990. Trade-offs in activity time and physiological performance for thermoregulating desert lizards, *Sceloporus merriami*. Ecology 71: 2323-2333.

Holland, Nicholas D. and Junyuan Chen. 2002. Origin and early evolution of the vertebrates: new insights from advances in molecular biology, anatomy, and palaeontology. BioEssays 23:142-151.

Lamb, Trevor D., Shaun P. Collin, and Edward N. Pugh, Jr. 2007. Evolution of the vertebrate eye: opsins, photoreceptors, retina and eye cup. Nature Reviews Neuroscience 8:960-976.

MacArthur, Robert H. 1958. Population ecology of some warblers of northeastern coniferous forests. Ecology 39:599-619.

McCollum, S.A. and J.D. Leimberger. 1997. Predator-induced morphological changes in an amphibian: predation by dragonflies affects tadpole shape and color. Oecologia 109:615-621.

Murphy, William J., Eduardo Eizirik, Warren E. Johnson, Ya Ping Zhang, Oliver A. Ryderk, and Stephen J. O'Brien. 2001. Molecular phylogenetics and the origins of placental mammals. Nature 409:614-618.

Rayner, Jeremy M. V.. 1988. The evolution of vertebrate flight. Biological Journal of the Linnean Society 34:269-287.

Satoh, Noriyuki and William R. Jeffery. 1995. Chasing tails in ascidians: developmental insights into the origin and evolution of chordates. Trends in Genetics 11:354-359.

Schwenk, Kurt. Why Snakes Have Forked Tongues. Science 263:1573-1577.

Vitt, Laurie J., Eric R. Pianka, William E. Cooper, Jr., and Kurt Schwenk. 2003. History and the global ecology of squamate reptiles. The American Naturalist 162:44-60.

Keeping a Field Notebook

Excerpt from: “Practical Field Ecology: A Project Guide” by C. Philip Wheater, Penny A. Cook, James R. Bell

Use a field notebook to write down data, ideas, observations, tentative conclusions and hypotheses as you do your fieldwork to create an immediate and faithful history of your research. Produce comprehensive, clearly organized notes as a reference and so that you can reconstruct the research time-line and follow the development of your thoughts and ideas. Although you may use other collection sheets (e.g. pre-printed data collection forms to ensure data are collected consistently in different locations and at different times), your field notebook should provide the context for data col1eetion and help resolve ambiguities or inconsistencies when preparing for analysis. After data analysis, reference to your notebook may generate further hypotheses and suggest further lines of enquiry.

What should be recorded?

The first page should include contact details in case of loss, the subject of your research and the start and end dates of the period covered by that notebook. Include any conventions used, for example 'All times are recorded as local time'. Number the pages and ideally add a contents table to make searching for information easier. Write on the right hand page only so the left hand page can be used for ideas generated by reading about similar observations or relevant research papers. Leave a few lines between observations for comments to be inserted later (e g 'No bark damage here 23 June, see p39'). Add a 2 cm margin to write the time, location (e.g. from a GPS reading) or other identifying labels. Create lists of codes, acronyms, specialist terminology, etc. at the back include any emergency numbers (e.g. those of field buddies). Other useful notes about equipment (how to use, limitations of instruments etc.) and any' numerical information you might require in the field (simple formulae for calculations, random numbers, etc.) can also be added here.

Before starting each work day, write down the date, weather, general location, nature of the habitat and purpose of the day's work. Write down any changes in weather or habitat that occur during the day, for example 'At 15.00 hours snow began to fall and visibility was reduced to 20 m’. When observing behavior note the sampling method, how animals were chosen for observation and the recording method (e g. whether you noted all occurrences or used a time-sampled method). If animals or start times are chosen at random, note how this was done.

Note the type and model number of any equipment (e.g. GPS receiver type Garmin 12). Some instruments need calibrating at intervals, so record the time of calibration and any raw data and subsequent calculations so that any arithmetic errors can be identified and corrected later. Use your notebook to create rough species accumulation curves, etc so you can tell when you should stop collecting data. Along with observations, note the time and if possible, the location from a GPS receiver. Although notes should be made at the time observations are made, it may be difficult to observe and write at the same time, but If you do rely on memory. you should note this. Write exactly what you see or hear, for example when describing behaviour do not ascribe a function to it in the guise of a description (i.e. do not write that a goose was vigilant when you mean that the bird was in a standing posture with an e1ongated neck and raised head.

Sketches enhance any photographs you take of your study sites and you will have a sketch available in your notebook the next time you visit the area. Sketches can be added subsequently (annotating any changes with the date of the amendment). The value of sketches can be increased by explanatory labels. A careful sketch can aid species identification and will help to jog your memory when you encounter a species in the future; such sketches are more valuable if labeled with the diagnostic feature(s) you use (e.g. 'two spots on forewing' or 'sepals reflexed'). Landscapes change over time and maps may not reflect this. In some cases no map of a suitable scale may be available and a sketch map can be made using compass and tape, or by pacing out distances using a pedometer. This may be adequate to note the locations of those animals or plants of interest.

It is also useful to record any notes and actions from supervisory team meetings both as a reminder and to ensure that any designated actions have been completed as planned.