

## **BIOL 334 and 334L: HERPTELOGY, SYLLABUS, SPRING 2016**

**Instructor:** Dr. Eric McElroy  
**Required text:** Readings from Primary Literature; A field guide (Peterson, Audubon, or a regional guide)  
**Location:** 307/302 Harborwalk  
**Website:** OAKS

### **Contact information:**

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### **1. COURSE DESCRIPTION**

An introduction to the biology of amphibians and reptiles. Laboratory work will emphasize the identification, classification, behavior and ecology of local species. Lectures three hours per week; laboratory three hours per week. NOTE: lab is scheduled for 4 hours per week to account for travel

### **2. LEARNING OUTCOMES**

- 2.1. Identify major groups of 'herps', their phylogenetic relationships and their defining characteristics.
- 2.2. Identify key characters that have contributed to the success of 'herps' on earth.
- 2.3. Understand the linkages between humans and 'herps'.
- 2.4. Identify local (SC) species and the environments they are found within
- 2.5. Demonstrate continued development of written, oral, and computational skill sets.
- 2.6. Demonstrate an understanding of the scientific method and experimental design.
- 2.7. Critically evaluate the primary scientific literature and discuss it with peers.

### **3. ASSESSMENT**

- 3.1. Presentation/Discussion Participation
- 3.2. Literature Summaries/Critique
- 3.3. Exams
- 3.4. Laboratory Notebook and Worksheets
- 3.5. Written Laboratory Report
- 3.6. Oral Presentations

3.1: "Lectures" will consist of a mixture of instructor delivered lectures and student driven presentation and discussion. In general, I will lecture on Thursdays and we will present/discuss on Tuesdays. Three things are expected out of you for the discussions: 1) Present an article, 2) come prepared with a list of discussion questions and 3) actively contribute to the discussion of the topic.

3.2: You will prepare written summaries/critiques of a number of articles from the primary literature. These will coincide with 3.1.

3.3: There will be one midterm and one final exam. Exams will be essay format and test your synthetic understanding of the major topics covered and your ability to identify local herp species. I will provide sample questions prior to the midterm.

3.4: You are expected to keep a field notebook. I will provide a sample of what I expect entries to look like. The goal here is to get you used to recording information in a way that you (or others!) can easily access it in the future. Additionally, I will expect a brief reflective writing piece

on each field excursion. Again, I will provide a sample of what I expect. I will have worksheet for the wet specimen labs. You are expected to fill these in and submit them to me.

3.5: We will conduct a class-wide laboratory project at Dixie Plantation. The project will involve sampling “herp” diversity and abundance in different habitat types. We have two goals with this project: 1) generating a list of known herps at Dixie Plantation, 2) statistically comparing habitat types.

3.6: You will give an oral presentation at the end of the course. This presentation will highlight your knowledge on ‘your organism’. Early in the semester you will choose ‘your organism’. This is a herp species (e.g. Green Anole) or clade (e.g. Phrynosomatine Lizards) that you are especially interested in. By picking your organism early in the semester you can build a working knowledge of all aspects of its biology during the semester, as we cover various topics.

#### 4. POINTS DISTRIBUTION

Presentation/Discussion	200
Literature Summaries/Critiques	150
Midterm Exam	150
Final Exam	150
Lab Notebook/Worksheets	100
Written Laboratory Report	150
Oral Presentation	100
<b>TOTAL</b>	<b>1000</b>

#### 5. ATTENDANCE AND ATTIRE

Your attendance is mandatory. Lectures will involve active participation and discussion. I will take daily attendance and if you **miss more than 3 lectures, for any reason (even excused), I may file paper work to have your withdrawn due to excess absences (WA)**. Make every effort to come to lecture and save your absences for day that your are truly ill OR that you need to miss for some reason (wedding, funeral, etc.). Most labs will be at remote field sites (30-60 mintues drive); therefore we will leave on time and we will not wait for late arrivals (for any reason!!!). **Each missed lab will result in a reduction of your final grade by 30 points (3%). More than 2 missed labs will result in a WA for the course!**

Field work is fun and exciting, especially when you make a rare find! However herp live in places that are dirty, wet, sometimes cold and often exhausting to hike through. We also live in a region with nasty bugs (mosquitos, no-see-ums, redbug, ticks, fire ants, etc.), intense UV radiation, unpredictable weather and venomous snakes. You should plan to wear/bring the following for each lab:

- 1) Long pants (breathable nylon is best, cotton is good, denim works). Don't wear shorts.
- 2) Boots/Shoes that lace up and can get muddy/dirty. Don't wear flip-flops, crocs, clogs.
- 3) Shirt with sleeves or a jacket over short sleeves.
- 4) Hat
- 5) Sunscreen and bugspray
- 6) Change of pants, shirt, socks. This will make a more comfortable ride home, in case you get wet and it's cold
- 7) Water and a snack
- 8) Toilet paper
- 9) Hand sanitizer
- 10) Field notebook and pencil
- 11) Camera or mobile with camera (smartphone camera works great!)

#### 6. STUDENT CONDUCT

a. Lecture starts at 8:30am....come on time or you will lose participation/discussion points. Be on time for all labs...if you come late you will miss lab and lose a chunk of points (30 pts per missed

lab)

b. Leave your cell phone in your bag.....checking it before or after lecture is fine. Checking it in the van to or from field sites is fine. Checking it during lecture OR during lab is not OK.

c. Be respectful and courteous. This is especially important during discussions, which can sometimes get heated if opinions differ.

d. If you have a documented disability than may require assistance, you will need to contact the Center for Disability Services for coordination in your academic accommodations. If the CDS will be involved in administering an exam, we request that you inform us in advance (e.g. the day before the exam is not acceptable). The CDS is located in the Lightsey Center in Suite 104. The CDS phone number is (843) 953-1431. For more information about disabilities, see <http://disabilityservices.cofc.edu>.

e. No College of Charleston employee or student should be subject to unwelcome verbal or physical conduct. It is expected that students, faculty and staff will treat one another with respect. Individuals who violate this policy are subject to disciplinary action up to and including termination and/or expulsion from the College and the possibility of civil and criminal prosecution.

f. Lying, cheating, attempted cheating, and plagiarism are violations of our Honor Code that, when identified, are investigated. Each incident will be examined to determine the degree of deception involved.

Incidents where the instructor determines the student's actions are related more to a misunderstanding will be handled by the instructor. A written intervention designed to help prevent the student from repeating the error will be given to the student. The intervention, submitted by form and signed by both the instructor and the student, will be forwarded to the Dean of Students and placed in the student's file.

Cases of suspected academic dishonesty will be reported directly by the instructor and/or others having knowledge of the incident to the Dean of Students. A student found responsible by the Honor Board for academic dishonesty will receive a XF in the course, indicating failure of the course due to academic dishonesty. This grade will appear on the student's transcript for two years after which the student may petition for the X to be expunged. The student may also be placed on disciplinary probation, suspended (temporary removal) or expelled (permanent removal) from the College by the Honor Board.

Students should be aware that unauthorized collaboration--working together without permission--is a form of cheating. Unless the instructor specifies that students can work together on an assignment, quiz and/or test, no collaboration during the completion of the assignment is permitted. Other forms of cheating include possessing or using an unauthorized study aid (which could include accessing information stored on a cell phone), copying from others' exams, fabricating data, and giving unauthorized assistance.

Research conducted and/or papers written for other classes cannot be used in whole or in part for any assignment in this class without obtaining prior permission from the instructor.

Students can find the complete Honor Code and all related processes in the *Student Handbook* at <http://www.cofc.edu/generaldocuments/handbook.pdf>

g. We will potentially encounter dangerous animals in the field. Venomous snakes, alligators, large turtles and lizards, and larger non-venomous snakes can inflict nasty, even fatal, bites. Do not attempt to handle or harass venomous snakes, alligators or very large turtles, you might lose a finger, hand or worse. Keep your distance and take photos! If you don't know if it's venomous, don't touch it. If someone is bitten it is highly likely that we will not be allowed to go into the field

again this semester and may into the future. Broadhead skinks and racers/coachwhips/ratsnakes can bite and draw blood. You can attempt to capture these species but be forewarned of their known aggressive nature.

<b>Laboratory Schedule</b>		
<b>Date</b>	<b>Lab</b>	<b>Content</b>
1/12	1	Introduction to Lab; Wet Specimen ID
1/19	2	Field Lab/ Wet Lab
1/26	3	Field Lab/ Wet Lab
2/2	4	Field Lab/ Wet Lab
2/9	5	Field Lab/ Wet Lab
2/16	6	Field Lab/ Wet Lab
2/23	7	Field Lab
3/1	8	Field Lab
3/8		No Lab - Spring Break
3/15	9	Field Lab
3/22	10	Field Lab
3/29	11	Field Lab
4/5	12	Field Lab
4/12	13	Field Lab
4/19	14	Field Lab

Notes: 1) The field lab locations are TBD and until mid February we need to be flexible with weather, so we may do several wet specimen labs. 2) We may leave at 830am for some field labs; these will be announced. 3) List of field sites we may visit: Dixie Plantation, Francis Marion National Forest, Sullivan's Island, Turtle Survival Alliance Breeding Facility, Caw Caw Interpretive Center, Downtown Charleston, Folly Beach and Dungannon Plantation.

<b>Lecture Schedule</b>		
<b>Date</b>		<b>Topics/Assignments</b>
1/12	Lecture	Characteristics and phylogeny
1/14	Lecture	Evolutionary History
1/19	Discussion	Controversy over major relationships
1/21	Lecture	Thermal Biology
1/26	Discussion	Will climate change cause mass herp extinction?
1/28	Lecture	Life History and Reproduction
2/2	Discussion	Temperature dependent sex determination
2/4	Lecture	Foraging, Diet, Niches
2/9	Discussion	Do herps optimally forage?
2/11	Lecture	Social Behavior
2/16	Discussion	Sexual size dimorphism: causes and consequences
2/18	Lecture	Defense and Escape
2/23	Discussion	Do herps optimally escape?
2/25	Lecture	Community Ecology
3/1	Lecture	Biogeography
3/3		<b>Midterm Exam</b>
3/15	Lecture	Convergent Evolution and Adaptations

3/17	Lecture	Key innovations and diversification
3/22	Discussion	Constraints in herps
3/24	Lecture	Diversity: Amphibians
3/29	Discussion	Trait mapping in your favorite clade
3/31	Lecture	Diversity: Turtles, Crocodylians
4/5	Discussion	Trait mapping in your favorite clade
4/7	Lecture	Diversity: Squamates and Tuatara
4/12	Discussion	Trait mapping in your favorite clade
4/14	Lecture	Conservation Issues
4/19	Discussion	Herps and Humans
4/26		<b>Final Exam: 12-3pm</b>