Field Ecology and Behavior of Amphibians and Reptiles
The University of Toledo
Department of Environmental Sciences & The Lake Erie Center
EEES 4980/6980

Instructor: Dr. Katy Klymus
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Office Hours: 8:00am – 7:00pm
Office Location: Lake Erie Center Room: 147
Office Phone: 419-530-5375

Term: Summer 2015
Class Location: Lake Erie Center
Class Day/Time: July 13-17
M, Tu, Th, Fr 9:00-5:30; Wed 9:00-3:30; 8-11:00pm
Credit Hours: 2 Credit Hours

COURSE/CATALOG DESCRIPTION
This course provides an introduction and foundation to the field of herpetology, the study of reptiles and amphibians. The course emphasizes taxonomy and identification skills with opportunity for students to survey species in the field.

COURSE OVERVIEW
Although reptiles and amphibians are in fact widely separated from one another phylogenetically, they have traditionally been grouped together in the field of herpetology. An introduction to phylogenetic systematics will allow students to understand the basic taxonomy of these two groups. All orders and families will be described and studied, with a special emphasis on being able to identify local Ohio taxa down to species level. Field trips will allow students to test their identification skills. This course also introduces students to the variety of physiological, behavioral and ecological adaptations found between and within these two groups. The goals are to: 1- Provide an in depth tour of the diversity of living amphibians and reptiles in order to understand species relationships among and within these two evolutionary distinct groups. 2- Give an overview of the major themes of herpetological research (i.e. behavioral biology, ecological, physiological), through the reading and discussion of primary literature. 3- Demonstrate how to identify native Ohio species of amphibians and reptiles, and take short field trips for the surveying and identification of such species. 4- Review the major causes of worldwide amphibian and reptile declines, and identify current conservation initiatives and research.

STUDENT LEARNING OUTCOMES
Upon completion of this intensive weeklong course, students should be able to:

1. Identify the phylogenetic relationships among living vertebrates, with a special emphasis on the placement of amphibians and reptiles, and be able to describe the current systematic treatment of taxa within these two groups.
2. Recognize the physiological and ecological similarities and dissimilarities between these two groups.
3. Describe the variety of reproductive strategies employed by different species, and be able to interpret the evolutionary explanation for the development of these strategies.
4. Be able to visually identify Ohio species, and acoustically identify Ohio anuran species.
5. Demonstrate critical thinking in the discussion of primary literature, and apply this knowledge to develop and lead student presentations and papers.

TEACHING STRATEGIES
This course is designed to actively engage student learning in an intensive week-long summer course, through the use of field trips, hands on field surveys (local State Parks, The Toledo Zoo), labs, guest speakers, and participation in student led presentations.

Syllabus Development Resources: Template/December 10, 2014
Office of the Provost/University Teaching Center/
Office of Assessment, Accreditation and Program Review
PREREQUISITES AND COREQUISITES
EEES 2150 – Biodiversity; EEES 3050 - General Ecology; EEES4150- Evolution OR permission of instructor.

REQUIRED TEXTS AND ANCILLARY MATERIALS
Books

Online PDFs
2. Amphibians of Ohio Field Guide; Ohio Division of Wildlife
3. Reptiles of Ohio Field Guide; Ohio Division of Wildlife

TECHNOLOGY REQUIREMENTS
None

UNIVERSITY POLICIES
Policy Statement on Non-Discrimination on the basis of Disability (ADA)
The University is an equal opportunity educational institution. Please read The University’s Policy Statement on Nondiscrimination on the Basis of Disability Americans with Disability Act Compliance.

ACADEMIC ACCOMMODATIONS
The University of Toledo is committed to providing equal access to education for all students. If you have a documented disability or you believe you have a disability and would like information regarding academic accommodations/adjustments in this course please contact the Student Disability Services Office.

ACADEMIC POLICIES
Academic Policies for Undergraduate Students
As a student in my course and enrolled at The University of Toledo you should be familiar with the policies that govern the institution’s academic processes, for example, Academic Dishonesty, Enrollment Status, and Grades and Grading. Please read Undergraduate Academic Policies.

Academic Policies for Graduate Students
As a student in my course and enrolled at The University of Toledo you should be familiar with the policies that govern the institution’s academic processes, for example, Academic Dishonesty, Enrollment Status, and Grades and Grading. Please read: Graduate Academic Policies.

Missed Class Policy
Students are expected to attend every class meeting of courses in which they are registered. Please read missed class policy.

COURSE EXPECTATIONS
Because this is a one week course, all days and class times must be attended. Tardiness to class or any class activity will not be accepted. Exceptions will only be made in extenuating circumstances at the discretion of the instructor. Make-up quizzes and exams will differ from those given in class but will cover the same material. Due dates for assignments (presentations and papers) will not be changed.
GRADING
Class grades will be assessed via class attendance (25%), class participation (25%), quizzes/ exams (25%) and final class projects (25%).

**Attendance 25%:**
5 points/ day (25 points)

**Participation 25%:**
Actively engaged in lectures, discussion and activities;
5 points/ day (25 points)

**Quizzes/ Exams 25%:**
First day pre-test not graded
3 Quizzes: 4 points/ quiz (12 points)
1 Final exam (13 points)

**Presentations, Papers and Field Notebooks 25%:**
Undergraduates: class presentation (15 points); field notebooks (10 points)
Graduates: class presentation (10 points), papers due end of following week (15 points)

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**Quizzes** will be short answer questions, covering topics of from the previous day’s lectures and lab activities. Identification of anatomy, specimens, and anuran vocalizations may be included.

**Final exam** will consist of short answer and essay questions covering all topics covered throughout all lectures and lab/ field trip activities. Identification of anatomy, specimens, and anuran vocalizations will be included.

**Presentations:**
Both undergraduate students and graduate students will be expected to give a 15-minute class presentation on a local amphibian or reptile species of their choice. Details on presentation, research, design and a grading rubric will be given on the first day of class. Choice of species is due at the beginning of the second day (Tuesday).

**Field Notebooks:**
All students are required to use a field notebook to write down observations during lab activities and especially during field trips for identification and species surveys. All students (graduate and undergraduate) are expected to have a field notebook in class; class participation points will not be earned if students are not using them. Only undergraduates will be required to turn them in for final grading (10 points).

**Research Paper:**
Only graduate students will be expected to write an 8-page paper on a herpetological topic of their choice (e.g. a particular conservation concern/effort, an ecological or behavioral aspect of a certain species, etc.). They must included primary literature and a bibliography. Details on paper
and a grading rubric will be provided on the first day of class. Topic of choice is due at the beginning of the last class day (Friday). Papers will be due at the end of the day (5 pm) the following Friday.

**COMMUNICATION GUIDELINES**
For questions or concerns please contact me before or after class, or via email. I will respond to emails during the week of the course and one week after within 24 hrs.

**STUDENT SUPPORT SERVICES**
Relevant UT support services:
University Libraries: [http://www.utoledo.edu/library/](http://www.utoledo.edu/library/)
Writing Center: [http://www.utoledo.edu/success/writingcenter/index.html](http://www.utoledo.edu/success/writingcenter/index.html)
Success Coaches: [http://www.utoledo.edu/successcoach/index.html](http://www.utoledo.edu/successcoach/index.html)
Counseling Center: [http://www.utoledo.edu/studentaffairs/counseling/](http://www.utoledo.edu/studentaffairs/counseling/)

**COURSE SCHEDULE**

**Monday**
9:00-10:00
Introduction to course: schedule, field notebook, projects
Pretest
Lecture: Herpetology - a phylogenetic perspective
10:00-11:30
Lecture: Introduction to Class Amphibia, Order Apoda (caecilians), and Order Caudata (salamanders)
11:30 lunch
12:00 – 1:30
Lecture: Introduction to order Anura
1:30-3:00
Lab: frog dissection, anuran anatomy
3:00-4:30
Paper Discussion: anuran hibernation/ estivation (example: wood frogs and freezing adaptation)
4:30-5:30
Lab: Frog ID at LEC pond

**Tuesday**
9:00-10:00
Assignment: turn in to me your species of choice for class presentations
Quiz 1
Lecture: Anuran acoustics and mating systems
10:00-12:30
Lab: learning to ID frogs by sight and call; test male bullfrogs at LEC pond with playback experiments
12:30 lunch
1:00 – 2:30
Lecture: Introduction to Reptiles; Order Testudines (turtles)
2:30-3:30
Lecture: Introduction to living Archosauria: Crocodilians (and brief mention of Aves)
Paper Discussion: Reptilian systematics
3:30-5:30
Lab: State Park field trip

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**Wednesday**
9:00-10:30
Quiz 2
Lecture: Local Ohio species and identification
10:30-11:30
Lecture: Introduction to Lepidosauria- Tuataras, Lizards, Amphisbaenids and Snakes
11:30 lunch
12:00 – 1:30
Lab: Lake Erie Watersnakes
1:30-3:30
Lab: Field Trip to local State Park, amphibian ID and Turtle ID; (turtle trapping?)
3:30 – 4:30
Lab: In class, amphibian ID review
8:00-11:00
Lab: Night survey for frogs- test out ID’ing skills, and do playbacks

**Thursday**
9:00-11:00
Lab: Go to Zoo, Zoo Tour
11:00-12:00
Lecture: Zoo –Guest lecture at zoo
12:00 lunch
1:00 – 4:00
Quiz 3
Lab: Continuation of Lepidosauria- Tuatara, Lizards, Amphisbaenids and Snakes while at Zoo
4:00-5:30
Lab: In class- work on presentations

**Friday**
9:00-10:00
Assignment: Graduate students only! Turn in to me your paper topic
Lecture: Continuation of Lizards, Amphisbaenids, Snakes
Paper Discussion (homing in snakes)
10:00-12:00
Lab: Local field trip
12:00 lunch
12:30 – 1:30
Lab: Local field trip
1:30-2:30
Lecture: Conservation
Turn in Field Notebooks
2:30-3:30
Final test
3:30-5:30
Lab: Class presentations and evaluations

Total Lecture/ in classroom time: 14  
Total Lab/ out of classroom time: 27