HERPETOLOGY

WILD/ECOL 4040/6040; WILD/ECOL 4040L/6040L

Syllabus

SPRING - 2010

Please note *- The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.*

Please note *- All academic work must meet the standards contained in "A Culture of Honesty." Students are responsible for informing themselves about those standards (http://www.uga.edu/ovpi/honesty/culture_honesty.htm) before performing any academic work.*

Please note* -** *The use of live animals in this course is approved by the University of Georgia's Institutional Animal Care and Use committee and permitted by the Georgia Department of Natural Resources. Use of animals requires that all course participants treat animals humanely and according to recommendations established by the Society for the Study of Amphibians and Reptiles. Anyone treating an animal in a non-standard and humane manner will be dismissed from the course with a grade of F. Participants are responsible for knowing the State and Federal laws and regulations regarding the collection handling, and use of reptiles and amphibians in Georgia.* ***No live venomous snake or endangered or threatened species of reptile or amphibian is to be captured or picked up by any student in the herpetology class under penalty of an "F" in the course*.*

Instructors:

Dr. John Maerz, Assistant Professor, Warnell School

Dr. Kurt Buhlmann, Associate Research Ecologist, Odum School and SREL

Teaching Assistant:

Jess Gonyor, Ph.D. Student, Warnell School

Undergraduate Teaching Assistants:

Elizabeth Nixon and Grover Brown

Guest Lecturers:

Dr. J. Whitfield Gibbons, Professor Emeritus, Odum School and SREL
Mr. John Jensen, Nongame and Endangered Species Unit, Georgia DNR
Dr. Stephen Divers, School of Veterinary Medicine, UGA
Dr. Chris Jenkins, Project Orianne, Clatyon, GA
Dr. Joseph Mendelson, Zoo Atlanta

Lectures: TuTh 9:30-11:00 AM, Rm. 1-209 Warnell School

Lab: Tu 2:00-4:45 PM, Rm. 1-107 Warnell School

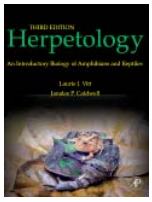
Weekend Field Trips:

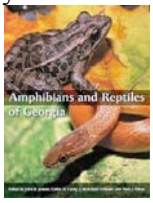
March 19-21 SREL (Aiken, SC); April 9-11 Jones ERC at Ichaway (Newton, GA)

Course web site: http://www.uga.edu/maerzlab/Site/Herpetology.html

Course wiki (for enrolled participants): http://ugaherpetology.wetpaint.com/

Required materials: Herpetology: An Introductory Biology of Amphibians and Reptiles. Third Edition. By Vitt and Caldwell
Amphibians and Reptiles of Georgia. By Jensen et al. UGA Press.
Rite-in-Rain laboratory and field notebook(s)





Course Goals: To understand the biological diversity, ecology, evolution, and cultural and environmental value of reptiles and amphibians and to introduce the types and sources of information that must be known should one pursue herpetology as a part of their professional career. Students who take this course should become more informed biologically and culturally about reptiles and amphibians than someone who has not taken the course (fellow students, family, friends, politicians), and be prepared to explain the global and regional importance of herpetofauna. In this course we will examine the evolutionary history of reptiles and amphibians and the patterns of biological diversity, life history, ecology, reproduction, and behavior they exhibit. Natural history, convergent evolution and conservation will be recurring themes.

To accomplish these goals each student will …

1. learn the biological features that characterize the classes Amphibia and Reptilia and that make them distinctive from other vertebrates and from each other.
2. learn the phylogenetic origins and relationships of major groups of herpetofauna.
3. learn the taxonomy, systematic relationships, ecology, and geographic distributions of herpetofaunal families of the world, genera of North America, and species of Georgia.
4. understand patterns of convergent evolution among amphibians and reptiles, and what morphological, physiological, life history, and behavioral traits are associated with particular environments.
5. learn about conservation issues related to herpetofauna on a regional, national, and global scale.
6. learn standard field and laboratory techniques used in herpetology, including field collecting and monitoring techniques, classic and contemporary voucher techniques, and the regulations and guidelines associated with capturing, handling, and conducting research on reptiles and amphibians.
7. become familiar with herpetological resources including journals and books, web sites, and museums.
8. gain experience educating their peers and the general public on the biology and importance of herpetofauna.

OVERVIEW OF COURSE STRUCTURE

As you will come to learn, the treatment of amphibians and reptiles as a single taxonomic group is more an artifact of history than biology, and the diversity of both groups makes teaching them together in a single course a challenge. To address the breadth of diversity and issues related to herpetofauna and to provide detailed knowledge of regional fauna, the lecture and laboratory portions of this course are structured to address different demands. The lecture will provide an overview of the evolution and ecology of amphibians and reptiles and a survey of some of the world's key families. The laboratory portion of the course focuses on the identification and natural history of species in Georgia, and on giving you an opportunity to learn techniques used to inventory, monitor, measure, and voucher herpetofauna.

We use several approaches in lab to improve student mastery of the basic skills of taxonomic identification and literacy with regard to the natural history of Georgia's reptiles and amphibians. The first approach is to assign teams of students to develop and instruct materials pertaining to specific groups of amphibians and reptiles. The second approach is to facilitate observing animals in their natural environment. A student who spends time in the field becomes more acquainted with the habitats and habits of the animals. We require students to keep a laboratory and field notebook to record all your lab notes, makes sketches, and keep records of field observations. <u>You are required turn in your lab/field notebook(s), and you will be required to submit your field notes and voucher information as part of your amphibian inventory</u>.

A major feature of this course is the use of a wiki to deliver content and facilitate a community of learning. All students are given the ability to post and modify content on the course wiki. The wiki moves away from bidirectional interaction between instructor an each student, and creates an interactive

community that encourages students to utilize each other as resources. The wiki maintains a complete record of changes, so actions on the wiki are not anonymous. *All course participants are expected to demonstrate respect for differences in opinion without intellectual or emotional judgment. Malicious or inappropriate activity will result in a participant's expulsion from the wiki, which will severely impact the students ability to complete the required elements of this course.*

GRADING GUIDELINES

***Please note* - this course is graded on the +/- system.**

Items	Pts	Due Date
Quizzes	90	~ 1/week, unannounced
Lecture Exams		
Mid-term	100	March 4
Final	100	Tuesday, May 4, 8-11 AM
Lab Practicals		
Amphibians	100	February 23
Reptiles	100	April 27
Lab Assignments		
Amphibian instruction lab	100	Assigned by TA
Reptile instruction lab	100	Assigned by TA
Dichotomous Field Key		
First Draft	30	March 2
Revised Key	70	April 13
Amphibian inventory	100	ongoing, completed by April 29
Participation		
Notebook(s)	100	Due March 4, April 22
Field Trip	50	see Calendar for dates
Lecture	20	
Lab	20	
Herp of the month	up to 30	10 pts ea., max. 1/month
Total Points	**1000 pts**	

Graduate and Honors Students Only		
Option 1	100 pts	Depends on choice
Option 2	100 pts	Complete by March 24
Option 3	100 pts	Complete by April 29
Total Points for Grad and Honors	**1300 pts**	

Extra Credit		
Seminar summaries	up to 20 (10 pts ea.)	Due within 1 week of seminar
Frog call challenge	up to 35 pts.	Administered weekly in lab.
A Day On the Lawn	up to 15 (5 pts/hr)	April 23
2nd Field Trip	25	

EXPLANATIONS OF GRADING

Quizzes: Approximately once a week we will give a 10-pt quiz at the beginning of a lecture. Quizzes can cover information from lecture, assigned readings, and may test your ability to identify taxa or their key characteristics.

Lecture Exams

Midterm: - Will cover all assigned readings and materials presented in lecture and lab.

Final: - Will cover all assigned reading and all material presented in lecture since the midterm and a limited amount of cumulative material from the midterm will be included.

Practicals

Amphibians - Will cover all amphibian material from lab, and emphasize taxonomy, morphology, and physiology.

Reptiles - Will cover all reptile material from lab, and emphasize taxonomy, morphology, and physiology.

Assignments

Instructional Labs – Twice over the term you will work as part of group and with course instructors to develop the specific laboratory instruction on a group of amphibians and reptiles. Groups will be assigned at random. Your group will design 4-5 stations (no more than 5 stations will be permitted), 3 of which must cover identification of species with a focus on key characters, and 1-2 stations may focus on internal anatomy and physiology, larval or juvenile identification for amphibians, feeding habits, standard measures, capture and marking techniques, conservation. Groups will be assigned dates and taxonomic groups at the beginning of the semester. Groups should begin meeting at least 3 weeks prior to their assigned date, and will begin preparation with their TA 2 weeks prior to their assigned date. Resources available to groups include museum specimens, preserved specimens for dissection, microscopes, dissection tools, and other standard laboratory supplies. On The content of a lab will begin with an overview by the TA about the taxonomic group and its key identifying characteristics. the day that groups present their lab, each member of the group will lead a set of students through all laboratory stations. This means that each group member must be involved with the design of the station and sufficiently literate to correctly instruct peers through each station.

Dichotomous Field Key - A challenge for all biologists can be identifying animals in the field. You will develop your own field key for a group of herpetofauna. A field key means you use characters that can be viewed on a live animal and the key does not require the use of any technology greater than a hand lens. You may select whatever taxonomic and geographic area you want to cover (e.g., salamanders of British Columbia, lizards of Georgia, snakes of Gwinnett Co., Turtles of Augusta, GA, etc…). The requirements are (1) that the key include at least 10 species including (2) 1 regionally native species not currently known within the designated area and (3) 1 non-native (non-U.S.) species found regionally. The course instructors must approve your taxonomic group in advance, and you will have the opportunity to revise your key.

Amphibian Inventory – Biotic inventories are an important component of research and monitoring, and a common task for professional wildlife biologists. You will be part of a group assigned to a specific pond or wetland in the local area. During the semester, you are expected to visit the site as often as you can [at different times and under different conditions] and use a range of techniques [e.g., listening for frog calls, hand searching, dip netting, trapping] to voucher what amphibian species occupy your site. You will report a description of your site, your inventory efforts, and the species your find supporting voucher information to a wiki page maintained by your group. *Your TA will provide more detailed guidelines.*

Laboratory and Field Notebook(s) – It is our desire that you be fully engaged during lab and field activities including special labs, amphibian inventories and field trips. You are required to keep 1 or more notebooks that fully document all your experiences in lab and the field. Whether you keep 1 notebook for all activities or separate notebooks for lab and the field will be left to your discretion, and we will provide recommendations to help guide your decision. Whether you use one or more books, they will be treated as a single collective unit for evaluation. You must keep all lab notes, field notes and observations, and data in your book(s). All materials are to be dated, and additional specific details such as how to record weather conditions etc… will be given in lab. Notebooks will be collected on two occasions for review and grading, and we will also note the use of notebooks during lab and field activities. Failure to have and use notebooks will be noted and may affect participation grades at the discretion of the instructors.

Field Trip – We offer two field trips during the term. Each student is required to attend at least one field trip and to actively participate in all activities. If you have questions or concerns about field trips, please address them with the instructors early in the semester. Attendance on both field trips is not required; however, students who attend both may use their second trip for extra credit.

Participation - You will receive one participation grade for lecture, and one for lab. Lecture participation grades will be determined by the instructors and based on your attendance and engagement in lecture discussions. The teaching assistant will determine your lab participation grade.

Herp of the month: 3 times over the course of the semester (no more than once in a given month), each student may upload to the wiki a photo of him or her with a reptile or amphibian. You may submit additional photos to show close up features of the animal (additional instructions on uploading accounts is available on the course wiki). At least two animals must be live/wild caught specimens, photos of a wild animal taken during the semester, or photos of a specimen from a museum or research collection excluding the teaching collection used for the course. The third animal may be a pet or photo of an exotic species from a zoo or museum collection. You may bring herp of the month animals to lecture or lab; however, we ask that you limit live animals to common, local species that can be returned quickly and easily to their capture location. It is important to remember that Herp of the Month is a competition! That is, once a species has been reported, another member of class may not present it. We do count different life stages of amphibians as independent reports. In other words, if someone brings in a bullfrog tadpole, someone else can still bring in an adult bullfrog.

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Graduate and Honors Student Requirements: The honors/graduate option of this course is intended to provide advanced experiences in teaching and public speaking. Each honors or graduate student must complete three of the options listed below:

Option 1

- Prepare a lecture for class on a non-U.S. family of amphibian or reptile

or

- Write a report on a non-U.S. family of amphibian or reptile

Lectures or reports must cover all aspects of the biology of the family (e.g., systematics, life history, genetics, behavior, physiology, conservation, etc.). Reports must include a bibliography and are due by April 29nd. Dates for lectures should be arranged with instructor to coincide with relevant groups being covered in class.

Options 2 & 3 (pick any two)

- Present a lecture to a science class other than herpetology on the general ecology of amphibians and/or reptiles, or on a specific group of amphibians or reptiles.

or

- Present a lecture to a non-science class on the general ecology of amphibians and/or reptiles and on issues related to their conservation status.

or

- Give a talk on the general ecology, cultural importance, and conservation issues of amphibians and/or reptiles to a local community group.

or

- Give a talk on the general ecology, cultural importance, and conservation issues of amphibians and/or reptiles to children at a school or other youth organization.

You are free to arrange your own talks or your instructors will assist you in scheduling a talk. Talks must be cleared with the instructor in advance so there is time to arrange an evaluator. As a participant in the course, you may use the live animals from the course for your talks. Talks to community groups or school children may be done in pairs.

Extra Credit: We provide a number of opportunities for students to earn extra credit over the course of the semester. This extra credit amounts to enough points to raise your final grade by an entire letter grade! Extra credit is intended to reward extra effort. *Please note - changes to marginal grades, even those <1% from the next highest grade, are only considered if the student maximized their own opportunities to make the higher grade including high attendance (based on quizzes) and completing extra credit opportunities.*

Extra credit activities include:

Seminar summaries – You may report on up to two seminars of your choosing attended outside of class. The seminar does not have to be about herpetofauna, but you will be required to relate the seminar to herpetology (e.g., a seminar about bat conservation could be linked to conservation of other organisms including herpetofauna). For each seminar, download a seminar summary form from the course web site and take it with you. Complete the summary form and turn it in within one week of the seminar.

Frog call challenge – Frog call surveys are a common technique for monitoring anuran populations. NAAMP (North American Amphibian Monitoring Program) uses volunteer call surveys to track national patterns of amphibian distributions and abundances, and NAAMP requires a call proficiency of 60% accuracy among volunteers. You and the members of your Amphibian Inventory group will work together to correctly identify frog calls during a weekly lab quiz. Each week, if your group correctly identifies 60% of the calls presented, then each member of your group will receive 5 bonus points, and if your group gets the highest percentage correct compared to other groups, you will receive an additional bonus point. Prior to the amphibian practical, we will offer a final group quiz, and any group that achieves 75% correct will be awarded 6 additional bonus points, and the group with the highest proficiency will receive an additional 5 points. We provide a website for a Georgia frog calls, and to encourage your mastery of these calls, we will offer a weekly sample of a call from the NAAMP quiz.

A Day on the Lawn – Towards the end of the semester we will hold an outreach event in conjunction with the UGHS and SREL to increase public awareness of reptiles and amphibians. The event takes place outside Warnell, and requires students to interact with passers-by and groups of school children, explaining important information about herpetofauna, dispelling

myths, answering questions, and promoting a positive attitude about these animals. Each student can receive 5 bonus points for each hour they volunteer (maximum credit 20 pts.).

Field Trips – Students are required to attend a field trip. Students who attend both field trips will receive 25 extra credit points for their participation in the second trip.

Late Policy: 10% of the total assignment value is deducted per day for any assignment turned in past the assigned due date. Exams may be made up with a documented excuse, or you will be deducted 10% of the total exam points per day for each day until the exam is made up. You cannot make up lab practicals, quizzes, instructional labs, or participation in Herp of the Month.

Get Out of Herpetology Free Coupon

This is a demanding course, and we understand that the demands of this course may conflict with other courses and your personal life. We also recognize that stuff just happens. This coupon entitles you to extend the due date on one assignment up to 3 d without penalty (Saturdays and Sundays count as 1 day each). You cannot use the coupon for quizzes, exams, practicals, or instructional labs. Students that do not use their late coupon can exchange it for full credit on 1 Quiz [even if you weren't here to take the quiz]!

You may only use one coupon per semester. You do not need to explain yourself. You only need to clip this coupon, sign it, and staple it to top of the assignment when you turn it in.

Signature:_____ **Date:**_____