

# Biology of Snakes

ZOO 4926, 6927

Fall 2019

**Instructors: Drs. Harvey Lillywhite<sup>1</sup> & Max Nickerson<sup>2</sup>**

<sup>1</sup>Department of Biology (Dr. Marta Wayne, Chair, 220 Bartram Hall, 392-1175)

<sup>2</sup>Division of Herpetology, Department of Natural History, Florida Museum (Dr. Jonathan Bloch, Chair, 222 Dickinson Hall, 352-273-1938)

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## **GENERAL CLASS INFORMATION:**

### *Course Summary*

This course will feature lectures and discussions related to fundamental aspects of the biology of snakes. Topics will include evolutionary history, systematics, diversity, structure, function, and behavior, including treatment of field and laboratory techniques in research, and consideration of the health, welfare, and conservation of snake biota. Discussion will cover the processes and mechanisms of maintenance, activity, and integration in contexts of behavior, ecology, and evolutionary history. The course will feature attributes of snakes, but is also comparative in the sense that comparisons with other vertebrates will be important for certain topics of discussion. 4 Credit hours.

*Course Lectures* M and W, periods 6-7 (12:50 to 2:45 PM), Carr 521

### *Instructor*

**Prof. Harvey B. Lillywhite**, Department of Biology

Email: hblill@ufl.edu

Office hours: By arrangement with instructor. Office 122 Bartram Hall

**Prof. Max Nickerson**, Division of Herpetology, Museum of Natural History (FLMNH)

Email: maxn@flmnh.ufl.edu

Office hours: By arrangement with instructor. Office 238A Dickinson Hall (FLMNH)

### *Required Course Materials*

**Textbook:** H.B. Lillywhite, *How Snakes Work: Structure, Function and Behavior of the World's Snakes*, Oxford University Press, 2014 (available at university book stores).

### *Information about you*

Please deliver during the second week of classes the filled and signed form "Personal Information" per instructions. As an *optional* request, please include on the second page a picture of yourself, *e.g.* photocopy of the small photo that is on your driver's license, gatorlink photo, or a "selfie". This will help the instructors get to know students early.

**Grading and Examinations:** Grades will be based on participation in discussions, attendance, writing assignment, and quizzes according to the following approximate (and tentative) distribution of credit.

3 exams, in class:	300 points
Writing assignment:	300 points
Attendance:	100 points
Participation in discussions and activities:	100 points
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<b>Total Points:</b>	<b>800 points</b>

### **TOPICAL LECTURES & DISCUSSION:**

Evolution and Diversity of Snakes  
Introduction to course ... Week 1 (1 meeting) Nickerson & Lillywhite  
Evolutionary History ... Week 2 Nickerson  
Phylogeny and Phylogenetic Methods ... Week 3 (1 holiday) Nickerson  
Taxonomy ... Week 3 (1 holiday) Nickerson  
Diversification and Speciation ... Week 4 (Field trip) Nickerson  
Feeding and Digestion ... Week 5 Lillywhite and Nickerson (Exam 1)  
Temperature & Ectothermy ... Week 6 Lillywhite  
Locomotion ... Week 7 Lillywhite  
Skin Structure & Function ... Week 8 Lillywhite  
Water Balance ... Week 9 Lillywhite  
Mating & Reproduction ... Week 10 Lillywhite & Nickerson (Exam 2)  
Respiration and Circulation ... Week 11 Lillywhite  
Sound Production ... Week 12 Lillywhite  
Sensory Organs and Systems ... Week 13 (1 Holiday)  
Conservation: Impacts of Climate Change; Field Methods ... Week 14 Lillywhite & Nickerson  
Conservation: Health & Disease ... Week 14 Guest lecture Dr. Elliott Jacobson  
Conservation and Public Education ... Week 15 (1 Holiday) (Papers due)  
Conservation: General Discussion ... Week 16 (Exam 3)

### **OTHER:**

There is no formal laboratory. However, from time to time students might participate in demonstrations or field trip to further learn about behaviors of snakes and their ecology, conservation, or reproduction.

#### ***Important tips for doing well in this class***

Please note the following information *will not be repeated* in response to questions along the lines “How can I better my scores or performance in class” that might arise during the semester. Please consider the following advice carefully and **take it seriously**.

1. Factual detail is necessary for understanding the subject matter. However, bear in mind that examinations will stress learning and application of **principles** and **concepts** as well. Thus, when you study, do so for understanding; *do not simply memorize factual information*.

2. It is helpful to take notes during lecture and to organize these notes carefully. It is further helpful to formulate your own questions based on concepts covered in class or textbook, then write or verbalize answers to these questions. Studying with someone else, using a tape recorder, talking to a mirror, or writing answers to questions will help you to understand the information. In other words, some form of *active involvement* with the information (including taking notes during lecture!) facilitates learning, in contrast to simply “glancing over” your notes or having a casual approach to studying. Most important, you must keep up with a study schedule and not put off reading and studying information until a few days prior to an exam. This latter approach almost guarantees failure. Unfortunately, it is a common practice among a small subset of students who almost always experience poor performance as a result.

3. If you miss class, you must obtain notes for the missed days from a classmate. These will not be provided by the instructor, except for lecture notes and other information that are sent to you as pdf documents. It is *your* responsibility to be actively engaged in learning from the lectures. ***Class lectures will not be repeated for individuals.***

4. Extra readings may be assigned in addition to the text assignments listed below. ***Please keep up with the assigned reading!*** You will do better if your reading is current (or ahead) and if you read difficult material more than once. Poor performance on examinations is usually associated with failure to keep a study schedule current. **IMPORTANT:** Please note that *lectures and textbook* are intended to be complementary; do not expect material covered in lecture always to duplicate what is in the textbook, and *vice versa*. Also, do not expect the *structure* and *order* of information given in lectures to follow that in the text. Differences in the two approaches (lecture and text) will actually enrich your exposure to, and learning of, the information. Examinations will cover material from *both* lectures and the assigned readings in the textbook. Attendance at class meetings is required and will be necessary to keep up with class information. Failure to attend class meetings has been found to correlate with poor performance on examinations. ***It is your responsibility to know what is happening in class.***

### ***Communications***

1. Before lectures, please avoid asking questions while the instructor is in front of the computer loading the day’s lectures and trouble-shooting any computer problems. Once he completes this set-up, if there is extra time he will give you a “nod” and you may then ask questions.

2. Please note there is no live “shell” for this course in Canvas. Because of the small size of the class, information (including pdfs for lectures) will be sent via emails. Queries to the instructors also may be sent via email.

3. Please do not send numerous or chatty email communications to the instructor unless it is important and timely. The instructor receives sometimes more than 100 emails per day, and he cannot keep up with an excessive amount of student communications. This is simply a pragmatic constraint, but a very real one.

4. Please be courteous during lectures, to the instructor, and to your fellow classmates. This means do not text or otherwise engage electronic devices for purposes other than taking notes. Do not read the newspaper in class or surf websites.

### ***Illness***

If you are ill with an infectious or contagious illness such as cold or flu, you should ***not*** attend class. If you have a fever associated with any illness, you should ***not*** attend class until you have been free of the fever for at least 24 hours. The instructor reserves the right to ask any student to leave the classroom at any time if there is a reasonable likelihood that the student’s presence in the classroom places other students at substantial risk of infection.

### ***UF Counseling Services***

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include: 1) UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services. 2) Career Connections Center, Reitz Union, 392-1601, career and job search services. Many students experience test anxiety and other stress related problems. Resources to help with such problems are available through the Counseling and Wellness Center (3190 Radio Road, 392-1575) and at their web site: <https://counseling.ufl.edu>.

Students with disabilities are required to register with the Disability Resource Center (DRC) if they are requesting accommodations. The DRC may be contacted at (352) 392-8565 or refer to the website at <https://disability.ufl.edu>.

### ***Course Evaluations***

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.