

BIOL 3310 – 004: SELECTED TOPICS IN BIOLOGY:  
**SNAKE BIOLOGY**  
Syllabus – SPRING 2016

**Instructor(s):** Dr. Eric N. Smith

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**Faculty Profile:** <https://www.uta.edu/profiles/eric-smith>

**Office Hours:** Wednesday 10:30 AM-12:00 PM, Thursday 2:30 to 4:00 PM  
(If these are not convenient please contact me to make an appointment at a time convenience)

**Section Information:** BIOL 3310 – 004

**Time and Place of Class Meetings:** Tuesday and Thursday 5:30-6:50 am; Room LS 129 (Life Science).

**Description of Course Content:** This course provides a comprehensive treatment of snake biology. It encompasses morphology, evolution, diversity, life history, physiology, venoms, biogeography, ecology, and conservation. A laboratory portion will focus on diversity of snakes, where a series of representative snakes are dissected to familiarize students with specific components of the various organ systems, comparing anatomical similarities and differences among the main groups of snakes and their close relatives. Snake biology explores the evolutionary development of current anatomical diversity while giving some consideration to biomechanics and design. In the laboratory, a series of representative snakes are dissected to familiarize students with the specific components of the various systems.

**Student Learning Outcomes:** Students will understand and compare structures of snakes by establishing homologies and thereby deduce the course of evolution of organisms and their organs. They will familiarize themselves with the early history of snake biology; learn about the main advances in our knowledge of early snake radiations and the key elements of controversy over their major relationships. Students will be able to use knowledge of morphology to distinguish the taxonomic diversity of snakes around the world at the level of family and sometimes genera; will be familiar with the distribution and origins of snake diversity, based on the incorporation of plate tectonics and molecular systematics. Students will also recognize key morphological and behavioral elements of snake diversity as these relate to life history strategies in different environments.

**Recommended Textbooks and Other Course Materials:**

- **The New Encyclopedia of Snakes by Chris Mattison. 2007. Hardcover. 272 pages, over 200 photos. Starting used from \$20.95, new from \$21.45.**
- Snakes by David Gower, Katherine Garrett, and Peter Stafford. 2012. Paperback. Starting used from \$2.43, new from \$11.00.
- How Snakes Work: Structure, Function and Behavior of the World's Snakes by Harvey Lillywhite. 2014. Hardcover. Starting used and new from \$36.08.
- Snakes: The Evolution of Mystery in Nature by Harry Greene and Michael Fogden. 2000. Paperback. Starting from \$3.59.
- Snakes in Question, Second Edition: The Smithsonian Answer Book (Smithsonian's In Question Series) by George R. Zug and Carl H. Ernst. 2015. Hardcover starting at \$3.72, used & new.

- Venomous Snakes of the World: A Manual for Use by U.S. Amphibious Forces by Department of the Navy Bureau of Medicine and Surgery and Scott Shupe. 2013. Paperback from \$2.85, used & new.
- Keeping and Breeding Snakes by Chris Mattison. 1996. Paperback 224 pages, 95 color illus., starting used at \$0.01.
- **A laboratory guide will be provided for each of the seven practical sessions.**

**Important dates:**

- |             |                          |
|-------------|--------------------------|
| • Jan 19    | First Day of Classes     |
| • Jan 19–22 | Late Registration        |
| • Feb 03    | Census Date              |
| • Mar 14–19 | Thanksgiving Holidays    |
| • Apr 01    | Last day to drop classes |
| • May 06    | Last Day of Classes      |
| • May 7–12  | Final Exams              |
| • May 12–14 | Commencement Ceremonies  |

**Exams:**

- Lecture Test 1: March 8, first 14 sessions.
  - Lab Test 1: March 10, morphological identification of organisms and their structures.
  - Lab Final: April 28, on student presentations.
  - Class Final: May 10, on last 13 lectures and invited faculty presentations.
- Final Grades will be available online.

**Presentations:** Of assigned research paper. In PowerPoint and graded as follows:

- Appropriateness of presented material (20%)
- Pacing and allocation within allotted time (5%)
- Organization (5%)
- Communication skills (10%)
- Knowledge of topic (20%)
- Visuals (slides, illustrations, graphics) (20%)
- Literature consulted (10%)
- Answers to questions from audience (10%).

**Attendance:** At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I recommend that you attend every class; there is a direct correlation between attendance and grade scores.

**Grading:** Grading will evaluate comprehension of the material covered through the course (reading assignments, lecture, laboratory).

- Two Lecture Exams, including Final @ 20% ea. (40%)
- Five Lab Quizzes @ 4% ea. (20%)
- Two Lab Exams, including Lab Final @ 15% ea. (30%)
- One 10 minute presentation (10%)

Grades: A = 90-100%; B = 80-89%; C = 70-79%; D = 60-69%; F = below 60%.

Final not comprehensive. Quizzes will be very short and given on Thursdays, during the first practical laboratories. These will cover material examined the week before and/or reading assignments. Missed exams or quizzes will have a grade of zero in grade computation.

Two snake collecting trips will be organized on weekends. Although these are not obligatory they are a good opportunity to learn about snake biology and interact with other students in an informal setting.

## Descriptions of major assignments and examinations:

### Course Schedule:

Date	Session	Subject
January Tu 19	Class	Introduction, General snake characteristics, Origin and Diversity of Snakes
January Th 21	Lab	Diversity, general snake characteristics, skin, and sense organs
January Tu 26	Class	Scolecophidia, Aniliidae, Cylindrophiidae, Anomochilidae, Uropeltidae
January Th 28	Lab	Diversity and osteology
February Tu 2	Class	Boidae, Pythonidae, Bolyeriidae, Xenophiidae, Tropidophiidae
February Th 4	Lab	Diversity and osteology
February Tu 9	Class	Acrochordidae, Xenodermatidae, Pareatidae
February Th 11	Lab	Diversity and myology
February Tu 16	Class	Viperidae, Homalopsidae
February Th 18	Lab	Diversity and digestive, urinary and reproductive organs
February Tu 23	Class	Elapidae, Lamprophiidae
February Th 25	Lab	Diversity and circulatory and respiratory organs
March Tu 1	Class	Colubridae
March Th 3	Lab	Fieldwork, Zoos, keeping and handling
March Tu 8	Class	LECTURE TEST 1
March Th 10	Lab	LAB TEST 1
March Tu 15		Spring Break
March Th 17		Spring Break
March Tu 22	Class	Locomotion, structure and function of skin
March Th 24	Lab	Biogeography
March Tu 29	Class	Internal transport (circulation and respiration)
March Th 31	Lab	Ecology
April Tu 5	Class	Feeding, digestion and water balance
April Th 7	Lab	Behavior
April Tu 12	Class	Structure and function of sense organs
April Th 14	Lab	Predator evasion and defense
April Tu 19	Class	Temperature regulation and sound production
April Th 21	Lab	Development
April Tu 26	Class	Courtship and reproduction
April Th 28	Lab	LAB FINAL (on student presentations)
May Th 3	Class	Venomous snakes and snakebites
May Tu 5	Lab	History of snake biology, human interactions
May Tu 10	Class	CLASS FINAL (on last 13 lectures and invited faculty presentations)

*As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. –Eric N. Smith.*

**Make-up Exam Policy:** I encourage you to make every effort not to miss an exam. You should approach me regarding this matter. Reasons for missing tests will be evaluated on a case by case basis. If possible, let know ahead of time if you are going to miss a test. Some excuses may not be considered valid.

**Expectations for Out-of-Class Study:** Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 9 hours per week of their own time in course-related activities, including reading required materials, preparing for exams, etc.

**Grade Grievances:** Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog.  
<http://catalog.uta.edu/academicregulations/grades/#undergraduatetext>.

**Drop Policy:** Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://wweb.uta.edu/aao/fao/>).

**Americans with Disabilities Act:** The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**Title IX:** The University of Texas at Arlington is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit [www.uta.edu/titleIX](http://www.uta.edu/titleIX).

**Academic Integrity:** Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

*I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.*

*I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.*

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University. Academic dishonesty will result in a grade of zero for a particular test or work and dismissal from the class.

**Lab Safety Training: Students registered for this course must complete all required lab safety training prior to entering the lab and undertaking any activities.** Once completed, Lab Safety Training is valid for the remainder of the same academic year (i.e., through the following August) and must be completed anew in subsequent years. There are no exceptions to this University policy. Failure to complete the required training will preclude participation in any lab activities, including those for which a grade is assigned.

**Electronic Communication:** UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this

account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

**Student Feedback Survey:** At the end of each term, students enrolled in classes categorized as “lecture,” “seminar,” or “laboratory” shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student’s feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington’s effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

**Final Review Week:** A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, an instructor shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

**Emergency Exit Procedures:** Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, on the north side of the building. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

**Student Support Services:** UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to [resources@uta.edu](mailto:resources@uta.edu), or view the information at <http://www.uta.edu/universitycollege/resources/index.php>.

**Writing Center:** The Writing Center, 411 Central Library, offers individual 40 minute sessions to review assignments, *Quick Hits* (5-10 minute quick answers to questions), and workshops on grammar and specific writing projects. Visit <https://uta.mywconline.com/> to register and make appointments. For hours, information about the writing workshops we offer, scheduling a classroom visit, and descriptions of the services we offer undergraduates, graduate students, and faculty members, please visit our website at [www.uta.edu/owl/](http://www.uta.edu/owl/).

**Librarian to Contact:** For Biology assistance please contact Ms. Peace Ossom Williamson ([peace@uta.edu](mailto:peace@uta.edu)) or Mr. Clarke Iakovakis ([clarke@uta.edu](mailto:clarke@uta.edu)).

- Library Home Page <http://www.uta.edu/library>
- Subject Guides <http://libguides.uta.edu>
- Subject Librarians <http://www.uta.edu/library/help/subject-librarians.php>
- Database List <http://www.uta.edu/library/databases/index.php>
- Course Reserves <http://pulse.uta.edu/vwebv/enterCourseReserve.do>
- Library Tutorials <http://www.uta.edu/library/help/tutorials.php>
- Connecting from Off- Campus <http://libguides.uta.edu/offcampus>
- Ask A Librarian <http://ask.uta.edu>

<p><b>Emergency Phone Numbers:</b> In case of an on-campus emergency, call the UT Arlington Police Department at <b>817-272-3003</b> (non-campus phone), <b>2-3003</b> (campus phone). You may also dial 911.</p>
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For non-emergencies, contact the UTA PD at 817-272-3381.