

Biology 348 - Biology of Fishes **Spring 2009**

Instructor: David L. Schultz

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Office Hours: MWF: 9:45-12:45, TR: 7:30-10:00

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Course web site: www.nicholls.edu/biol-ds/biol348

Course Description: A survey of the ecology, physiology, behavior, and evolutionary biology of fishes. Laboratory activities will emphasize identification and biology of North American fishes with emphasis on Louisiana fishes.

Prerequisites: Biology 156 or equivalent.

Texts:

Required:

Helfman, G. S., B. B. Collette, and D. E. Facey. 1997. *The Diversity of Fishes*. Blackwell Science. Malden Massachusetts. 528 pp.

Recommended:

Douglas, N. H. 1974. *Freshwater Fishes of Louisiana*. Claitor's Publishing. Baton Rouge.

Ross, Stephen T. 2002. *Inland Fishes of Mississippi*. University Press of Mississippi.

Hoese, H. D. & R. H. Moore. 1998. *Fishes of the Gulf of Mexico Texas, Louisiana and Adjacent Waters*. Texas A & M University Press. College Station.

Course Goals: My goal is to provide you with a thorough overview of the biology fishes through lectures and assigned readings. The material I will cover includes anatomy, physiology, behavior, ecology, and evolution. My goal in the laboratory is to provide you with a thorough knowledge of local fishes and exposure to the dominant taxa found in other regions of the world.

Course Requirements and Grading: Grades will be based on your performance on 3 lecture exams (20% each), 3 laboratory exams (10% each), three review papers (10%), and a subjective performance bonus (5% maximum). Final letter grades will be based on a distribution to be determined at the end of the semester but will be no more stringent than a 10 point distribution. The review paper topics will be assigned. The final exam for lecture and laboratory will be cumulative. The performance bonus will be based on lecture and laboratory attendance and participation.

Field trips: Field trips are a valuable addition to the course and to your education. You are required to attend at least one field trip during the course of the semester.

Examinations: Lecture exams will consist of essays. Lecture exams will allow you to demonstrate your knowledge of specific topics. You will be given study questions in advance of exams that will help you prepare for exams. Laboratory exams will test your knowledge of fish identification and classification.

Make-up exams will be given only when the justification is unquestionable. If you miss an exam you must notify me within 48 hours of the scheduled exam time to be eligible for a make-up. Unexcused missed exams receive a grade of 0.

Review papers: You will be required to write three review papers each with a minimum length of 2 pages double spaced. The topic of each paper is of your choosing, but must be of a published paper or book and must receive my approval. The due date for each paper will be announced in class. Late submission of the term paper will result in a 5% reduction in the paper's grade per day.

Misconduct: It should go without saying, but I am required to say it, so, dishonest, disorderly, disruptive, or otherwise unscholarly behavior will be dealt with as described in the Code of Student Conduct.

Academic Grievances: The proper procedure for grade appeals or grievances related to academic matters is listed in Section 5 of the Code of Student Conduct and at the following link: http://www.nicholls.edu/documents/student_life/code_of_conduct.pdf

Continued learning following an extreme emergency: In order to make continued learning possible following an extreme emergency, students are responsible for:

- Reading regular emergency notifications on the NSU website
- Knowing how to use and access Blackboard (or university designated electronic delivery system)
- Familiarity with emergency guidelines
- Evacuating textbooks and other course materials
- Knowing their Blackboard (or designated system) student login and password
- Contacting faculty regarding their intentions for completing the course.

Faculty responsibilities for emergencies:

- their development in the use of the Blackboard (or designated) software
- having a plan for continuing their courses using only Blackboard and email
- continuing their course in whatever way suits the completion of the course best, and being creative in the continuation of these courses
- making adjustments or compensations to a student's progress in special programs with labs, clinical sequences or the like only in the immediate semester following the emergency.

Students with Disabilities: If you have a documented disability that requires assistance, you will need to register with the Office of Disability Services (Room 100A Peltier Hall, 985-448-4430) for coordination of your academic accommodations.

Attendance: Lecture and laboratory attendance is required. Absence or early departure from lecture or laboratory will influence your grade through the performance bonus. Do not schedule outside commitments that conflict with the regular class time.

Lecture Topic Sequence

1. Introduction
2. Fish Anatomy
2'. Fish Evolution
3. Metabolism and Energetics
3'. Chondrichthyes
4. Sensory Systems
4'. Primitive Fishes
5. Homeostasis
5'. Teleosts I
6. Feeding and Locomotion
6'. Teleosts II
7. Early Life History
7'. Fish Zoogeography
8. Growth
9. Fish Adaptations
10. Fish Reproduction
11. Predation
12. Predator Avoidance

Reading

- Ch. 1 & 2
Ch 3 & 4
Ch 11
Ch 5
Ch 12
Ch 6
Ch 13
Ch 7
Ch 14
Ch 8
Ch 15
Ch 9
Ch 16
Ch 10
Ch 17
Ch. 20
Ch 18
Ch 19

IMPORTANT DATES (Spring 2009)

January 19: Martin Luther King, Jr. Day

February 23-25: Mardi Gras Holiday

April 3: Last drop day

April 9-19: Spring Break

May 6: Last class day

May 14: Lecture Final Exam 10:30 AM

May 15: Laboratory Final Exam 1 PM