

AQUATIC BIOLOGY

Lecture BIOL 4330.01 - CRN 81637

Lab BIOL 4330.02 - CRN 81648

Location: Lecture LDB 220; Lab LDB 115.

Time: Lecture: TR 930-1050am; Lab: T 2:00-3:50pm

Credit Hours: 3

Instructor: Dr. Chad Hargrave

Office: LDB 300

Lab: TRIES

Phone: office - 936-294-1538;

Email (preferred contact): cwhargrave@shsu.edu

Office Hours: By appointment

Text: No text required. We will use the primary literature which will be posted on Blackboard. See me if you would like a list of appropriate textbooks. However, the following books will provide good support for class material

Stream Ecology: Structure and function of running waters, By J. David Allen
Publisher: Kluwer Academic

Limnology: Lake and River Ecosystems, By Robert G. Wetzel
Publisher: Academic Press

BlackBoard and Email: I will communicate with the class using email via Blackboard (BB). Thus, I expect you to check your email regularly for information regarding the class. Missing an email announcement is not an excuse for missing an assignment. Moreover, I will post readings, essay questions, and general information on BB prior to each class. It is your responsibility to obtain these assignments.

Prerequisite: Graduate Standing or Permission of Instructor.

Course Description and Objectives: In this class, we will explore the major ecological theories and principles dominating the fields of stream ecology, lake ecology, and wetland ecology. Using current and classical studies from the primary literature, we will investigate the abiotic properties and processes that affect organismal distribution and abundance across aquatic ecosystems, we will explore the adaptations of aquatic organisms in response to abiotic and biotic evolutionary pressures in these ecosystems, and we will investigate the ecological roles that organisms have in aquatic ecosystems. To tie everything together, we will learn about the importance of aquatic ecosystems and associated taxa, and how human activities can alter the properties and functions of these important ecosystems.

Classroom Format: We will use a combination of group discussion, Socratic questioning, and lecture to learn limnology. This method can be highly effective, very fun, and an enjoyable way

to learn. To be successful, however, it is critical to have a high degree of student participation. Thus, I will expect participation from all class members.

If you think your learning style is not conducive to a discussion-based format, see me immediately.

Lab Description and Objectives: Lab will include a combination of inside, hands on demonstrations, and field trips (one will be a long-weekend trip). This will be an exciting part of the class and will give you an opportunity to see species and habitats and use variety of sampling gears. We will process field samples in the laboratory and analyze data during lecture time. The primary objective of the laboratory section in this class is to introduce you to aquatic habitats, organisms, and common equipment limnologists use to address the questions and concepts we will discuss in class.

Attendance: Attendance is expected and essential to receive a passing grade.

Absence and Make-up Policy: Any points for assignments, participation, or exams missed as a result of an absence cannot be made-up. The only exception is if the absence is planned and approved by the instructor at least **14 days** prior to the date of absence. In this case an alternative assignment will be given and turned in before the absence.

Class Drop: 8 September 2017 – 12th class day - Last day to drop without a “Q”;
10 November 2017 – Last day to drop with Q;
1 December 2017 – Last day to resign.

Academic Dishonesty: I expect all students to maintain honesty and integrity in this class. Any student found guilty of dishonesty will be subject to disciplinary action. Academic dishonesty includes cheating on exams, copying and pasting text directly from the internet (i.e., plagiarism), etc. For a complete listing of the university policy, see:

<http://www.shsu.edu/administrative/faculty/sectionb.html#dishonesty>

Students with Disabilities: Any student with a disability that prevents participation in any class activity or assignment should immediately contact the instructor so that arrangements can be made to ensure that participation and achievement opportunities are not impaired.

Visitors in the Classroom: Visitors (i.e., not registered students) attending the class must be approved by the instructor, and must not cause any disruption to registered students.

Audit: You must have the instructor’s permission to audit this course, and auditing students must apply through the Registrar’s office.

Grading: Grades will be assigned based on the following point system: $A \geq 90\%$, $90\% > B \geq 80\%$; $80\% > C \geq 70\%$; $70\% > D \geq 60\%$; $60\% > F$. There will be no curve and no extra credit.

Exams (300 points). There will be two exams – one following each major unit (i.e., streams, lakes, and wetlands). The exams will be take home and include a combination of short answer, essay, data analysis, etc.

Participation/Assignments (200 points): Participation, enthusiasm, and general interests will be graded during each active based learning exercises and laboratory activities. Short write-ups, sample processing, data graphing, analysis and interpretation will contribute to this portion of the grade

Assignment	Points	Tentative Dates
Stream Ecology Test	150	16 October (1wk; take-home)
Lake Ecology Test	150	4 December (1wk; take-home)
Assignments & Participation	200	See schedule below for dates
Total Points	500	

Tentative Schedule

A. STREAM ECOLOGY

Syllabus

Hydrology & Chemistry

The Physical Environment

Stream Metabolism & Energy Sources

Organic Matter & Nutrient Cycles

Biota & Evolution

Food Webs, Herbivory, Predation, Competition

Human Modifications of Running Water

B. LAKE ECOLOGY

Lake Formation,

Hydrology & Chemistry

The Physical Environment.

Lake Metabolism & Energy Sources

Organic Matter & Nutrient Cycles

Food Webs, Herbivory, Predation, Competition

Human Modification of Lakes
