LIMNOLOGY
Lecture (BIOL 4363 / 5363); Laboratory (BIOL4361 / 5361)
Fall 2005

INSTRUCTOR: Dr. Alan D. Christian
OFFICE: LSE 412; Phone: 972-3296
LECTURE: 1:00 - 2:15 (TTh) LSE 207
LABORATORY: 2:30- 4:20 (T), LSE 404
OFFICE HOURS: M & T: 9:00-10:00**;** TH: 10:00 - 11:30 and 2:30 – 4:00 **(or by appointment)**

FINAL EXAM SCHEDULE: 8 December 2005 @ 2:45 to 4:45 p.m.
LAST DAY TO DROP AN INDIVIDUAL CLASS: 28 October 2005
LAST DAY TO WITHDRAW FROM THE UNIVERSITY: 5 December 2005

COURSE PHILOSOPHY: In lecture, BIOL 4363/5363 will cover physicochemical conditions of freshwater and their effects on aquatic life: plankton analysis and bottom fauna studies. In laboratory BIOL 4361/5361 will cover various methodologies in investigating limnology as well as incorporating a field trip and writing up the comprehensive results.

REQUIRED TEXTS:

LECTURE:
Dodson, S. I. 2005. Introduction to Limnology. McGraw Hill Higher Education, Boston.

LABORATORY:
Wetzel, R. G., and G. E. Likens. 1990. Limnological analyses., 3rd ed. Springer edition, New York.

OTHER USEFUL TEXTS:
Wetzel, R. G. 2001. Limnology: lake and river ecosystems, 3rd edition. Academic Press, San Diego.

Kalff, J. 2002. Limnology - inland water ecosystems. Prentice-Hall Inc., Upper Saddle River, New Jersey.

Lind, O. T. 1985. Handbook of common methods in limnology, 2nd edition. Kendall/Hunt Publishing Company, Dubuque, Iowa.

INSTITUTIONAL/CLASSROOM POLICIES

PLAGIARISM: **Plagiarism** is the act of taking and/or using the ideas, work, and/or writings of another person as one's own.

1. To avoid plagiarism give written credit and acknowledgment to the source of thoughts, ideas, and/or words, whether you have used direct quotation, paraphrasing, or just a reference to a general idea.

2. If you directly quote works written by someone else, enclose the quotation with quotation marks and provide an appropriate citation (e.g., footnote, endnote, bibliographical reference).

3. Research, as well as the complete written paper, must be the work of the person seeking academic credit for the course. (Papers, book reports, projects, and/or other class assignments)

Discipline: Faculty members may respond to cases of plagiarism in any of the following ways:

1. Return the paper or other item for rewriting; the grade may be lowered.

2. Give a failing grade on the paper or other item—"F" if a letter grade is used or zero if a numerical grade is used.

3. Give the student who plagiarized a failing grade in the course.

4. Recommend sanctions, including disciplinary expulsion from the university. All cases should be referred to the student conduct system.

CHEATING: **Cheating** is an act of dishonesty with the intention of obtaining and/or using information in a fraudulent manner.

1. Observing and/or copying from another student's test paper, reports, computer files and/or other class assignments.
2. Giving or receiving assistance during an examination period. (This includes providing specific answers to subsequent examinees and/or dispensing or receiving information that would allow the student to have an unfair advantage in the examination over students who did not possess such information.)
3. Using class notes, outlines, and other unauthorized information during an examination.
4. Using, buying, selling, stealing, transporting, or soliciting, in part or in whole the contents of an examination or other assignment not authorized by the professor of the class.
5. Using for credit in one class a term paper, book report, project, or class assignment written for credit in another class without the knowledge and permission of the professor of the class.
6. Exchanging places with another person for the purpose of taking an examination or completing other assignments.

Discipline: Faculty members may respond to cases of cheating in any of the following ways:

1. Allow the testing to progress without interruption, informing the offending student about the offense—and award a failing grade on the test—"F" if a letter grade is used or zero if a numerical grade is used.
2. Seize the test of the offending student and give a failing grade on the paper.
3. Give the offending student a failing grade in the course.
4. Recommend sanctions, including disciplinary expulsion from the university. All cases should be referred to the student conduct system.

DISABILITY SERVICES: Students who require academic adjustments in the classroom due to a disability must first register with ASU Disability Services. Following registration and within the first two weeks of class, please contact me to discuss appropriate academic accommodations. Appropriate arrangements can be made to ensure equal access to this course.

INCLIMATE WEATHER POLICY: The university remains open for academic classes and all other services during inclement weather except in extreme circumstances determined solely by the president of the university. Regional and local news media will publicize the closing**. Commuter students are encouraged to use good judgment in deciding whether to drive to campus under this policy, it is the responsibility of the student to immediately contact each of his/her professors upon return to explain the circumstances and to determine the need to complete any missed assignments.** The student is responsible for all missed assignments during inclement weather within a time frame to be determined by the professor. See notes about makeup policies and inclement weather below.

LECTURE AND LABORATORY GRADING POLICY:

GRADING SCALE:
A= 100-90%
B= 89-80%
C= 79-70%
D= 69-60%
F= 59-0%

LECTURE POINTS

Hourly and Take Home Exams:	04 @ 100 points each = 400 points
Take Home Comprehensive Final:	01 @ 100 points each = 100 points
Lead Paper Discussion Points	01 @ 055 points each = 055 points
Paper Discussion Points	15 @ 003 points each = 045 points
Total Lecture Points:	**600 points**

LABORATORY POINTS

Laboratory Exercise Reports	8 @ 50 points = 400 points
Reservoir Limnology Paper	1 @ 100 points = 100 points
Total Laboratory Points:	**500 points**

Chapter(s)/Date	Lecture Outline (Tentative)
1	General Introduction Hydrological Cycle
2	Physical Properties of Water
15 September	**Exam I: Hydrological and Physical Properties**
10	Carbon, Nitrogen, Sulfur, Phosphorus and toxic chemicals
13 October	**Exam II: Water Chemistry**
6	Population Dynamics in Limnology: Population size changing w/ time
7	Community Ecology: Species interactions and community structure
8	Community Ecology: Freshwater communities changing through time
10 November	**Exam III: Aquatic Population and Community Ecology**
09	Aquatic ecosystems and physiology: energy flow
11	Water in landscapes
6 December	**Exam IV: Aquatic Ecosystems and Landscapes**
15 December	**Final Comprehensive Take Home Exam Due**

LABORATORY OUTLINE (TENATIVE)

Exercise	Description
1 (23 August)	Exercise 1: Introduction & Drainage Basin / Lake Morphology
2 (30 August)	Exercise 2: Stream Habitat and Physical Limnology Exercise
3 (6 September)	Exercise 3: Models of lake heat and circulation
4 (13 September)	Exercise 4: Physical and Chemical Lake Limnology Field Trip
5 (20 September)	Exercise 5 & 6: Plankton Collection Field Trip & Exercise 4 data analysis
6 (27 September)	Exercise 5 Lab Analysis: Phytoplankton / bacterioplankton analysis
7 (4 October)	Exercise 6 Lab Analysis: Zooplankton analysis
8 (11 October)	Exercise 7 & 8: Stream Field Trip: fish and macroinvertebrate collection
9 (18 October)	Exercise 7 Lab Analysis: Lotic Benthos lab analysis/biomass
10 (25 October)	Exercise 8 Lab Analysis: Lotic Fish lab analysis/biomass
10 (28-30 October)	Exercise 9: Limnological Analysis: Bull Shoals Field Station Weekend Field Trip
11 (1 November)	Exercise 9: Limnological laboratory analysis of Bull Shoals Reservoir samples
12 (8 November)	Exercise 9: Limnological laboratory analysis of Bull Shoals Reservoir samples
13 (15 November)	Exercise 9: Limnological laboratory analysis of Bull Shoals Reservoir samples
14 (29 November)	Exercise 9: Limnological laboratory analysis of Bull Shoals Reservoir samples
15 (6 December)	Exercise 9: Limnological laboratory analysis of Bull Shoals Reservoir samples