BIO 483  Stream Ecology  Spring 2005

Tuesday/Thursday, 11:30 – 1:00

Instructor:  
Dr. Jay Jones  
AHRB 154  
474-7972  
ffbj@uaf.edu

Office hours:  Tuesday 1:00 – 2:00.  
By appointment (the best way to make an appointment with me is to send an email)

Prerequisites:  BIOL 105, 106 and 271. Recommended: CHEM 105 and 106.

Course overview:  Stream ecology is the study of flowing waters. This course integrates aspects of chemistry, physics, hydrology, and ecology to provide a holistic perspective on stream ecosystems. Emphasis will be on a holistic understanding of how streams function, and how streams are linked to the landscape.

Course goals and learning outcomes:  Students who successfully complete BIOL 483 will be able to describe the major physical, chemical and biological features of streams and related aquatic environments. Students will be familiar with principal techniques of limnological analysis. In addition, the most successful students will be conversant in the major contemporary issues concerning stream ecology and will be able to access literature appropriate for completing their knowledge of subjects of particular interest to them.

Instructional methods:  Lectures will consist of a mixture of approaches including traditional lectures supplemented with graphs to illustrate concepts, discussions, and readings of papers from the primary literature. In addition, a series of problem sets will be conducted that are designed to teach students to analyze and interpret research problems in stream ecology.

I strive to promote critical thinking and to teach students to teach themselves. Towards this goal I place a premium on students being engaged in the learning process and active participants. I try to provide the basic principles and then work with students to develop the skills to integrate the concepts into a holistic understanding of Stream Ecology.

Text:  A series of readings will be posted on the Blackboard web site. Students are advised to regularly check the website and to keep up with the readings.

Assessment:  Grades in the course will be determined as follows:

Lecture Exams\(^1\) (3 exams)  
Points
February 24 100
April 5 100
May 12 (Final; cumulative) 200
Writing assignments (4 @ 50 pts each) 200
Class discussion and participation 100

1 Exams will tend to have short answer, problem solving, and essay-type questions rather than multiple-choice, fill-in-the-blank type questions.

Final grades will be determined from the percent of possible points earned with cutoffs of >90% (A), 80-90% (B), 70-80% (C), 60-70% (D), <60% (F).

**Course policies:** If you have a conflict with an exam date, or you are ill on the day of an exam, you must inform the professor BEFORE the exam. If you miss an exam without prior permission from the instructor, you will receive a zero. Late assignments will not be accepted without prior approval from the instructors. If you cannot attend class the day an assignment is due, you must arrange to turn in the assignment prior to its due date. Notes from missed lectures **will not** be available from the instructor.

**Academic dishonesty:** Examples of academic dishonesty include, but are not limited to, cheating on exams or assignments, helping others to cheat on exams or assignments, and plagiarizing (using someone else’s ideas, words or graphics without giving them credit). Please read the UAF Honor Code in the UAF catalog. If you are caught cheating you will receive an F for the course and the case will be presented to the University Disciplinary and Honor Code Committee.

**Learning disabilities:** If you have a learning disability of any kind, please inform the instructor in the first 2 weeks of class so I can accommodate your needs. Please do not wait until after an exam to make me aware of the issue. If you have not already done so, you should contact UAF’s Center for Health and Counseling (474-7043).
## Stream Ecology Lecture Schedule

<table>
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<tr>
<th>Week of</th>
<th>Topic</th>
<th>Chapters</th>
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| 17 January (Th) | Introduction to stream ecology  
Hydrology and channel structure | 1, Allan |
| 24 January  | Hydrology and channel structure continued                             | 1, Allan |
| 31 January  | Stream water chemistry                                                | 2, Allan |
| 7 February  | Nutrient dynamics                                                     | 13, Allan|
| 14 February | Physical factors                                                      | 3, Allan |
| 21 February | Autotrophic organisms and primary production  
**Exam I (February 24)** | 4, Allan |
| 28 February | Heterotrophic organisms                                               | 5, Allan |
| 7 March     | Organic matter and woody debris                                       | 12, Allan|
| 14 March    | **SPRING BREAK**                                                       |          |
| 21 March    | Trophic interactions                                                  | 6 (& 7, 8 and 9), Allan |
| 28 March    | Hyporheic zone                                                        | Additional reading to be provided |
| 4 April     | Hyporheic zone  
**Exam II (April 5)** | Additional reading to be provided |
| 11 April    | Riparian zone                                                         | Additional reading to be provided |
| 18 April    | Drift                                                                 | 10, Allan |
| 25 April    | Lotic communities and disturbance                                     | 11, Allan|
| 2 May       | Anthropogenic impacts                                                 | 14, Allan|

Final: Thursday, 12 May 2005, 10:15 – 12:15