

BIOLOGY 6621
AQUATIC CHEMICAL ECOLOGY LABORATORY
Course Syllabus Fall 2007

Instructors:

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This one credit lab course meets on Tuesdays from 3:05 to 5:55 pm. During this time, students must either be present in the lab in Cherry Emerson room 304 or performing experiments in the field, and the instructors will be available to demonstrate new techniques, to help with students' experiments, and to participate in discussions. Students may also access lab resources during other times.

Schedule:

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| Aug 21 | Intro to the course, discussion of course goals and plans Project assignments |
| | Assignment of readings for next week: Chamberlin, Platt, Hurlburt |
| Aug 28 | Group discussion of readings: Hypothesis-testing and experimental design Group discussion on answering ecological questions with chemical & biological procedures |
| Sept 4 | <u>Lecture</u> on extractions of chemical cues from organisms Lab demonstration and student activity: Extractions |
| Sept 11 | Lab activities and group discussion in lab: Bioassays |
| Sept 18 | Lab activities: continuation of projects (extractions & bioassays) |
| Sept 25 | <u>Lecture</u> on chemical separations and extraction of waterborne cues Lab demonstration and student activity: Separations and chromatography <i>Introduction paper due</i> |
| Oct 2 | <u>Lecture</u> on practical aspects of chromatography Lab activities: Additional separations, chromatography, bioassays as needed for projects |
| Oct 16 | <u>Lecture</u> and group discussion on data analysis and statistics Lab activities: Continuation of projects |
| Oct 23 | <i>Progress presentations</i> |
| Oct 30 | Lab activities: Continuation of projects |
| Nov 6 | <u>Lecture</u> and lab demonstration of HPLC (high-performance liquid chromatography) Lab activities: Continuation of projects |
| Nov 13 | Lab activities: Continuation of projects |
| Nov 20 | Lab activities: Continuation of projects <i>Results write-up due</i> |
| Nov 27 | Lab activities: Continuation of projects |
| Dec 4 | <i>Final presentations</i> |
| Dec 7 | <i>Final paper due</i> |

Evaluation:

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| Introduction paper | 10% |
| Progress presentation | 10% |
| Results write-up | 10% |
| Final presentation | 10% |
| Final paper | 30% |
| Class participation | 30% |

Introduction paper: Each student will write their own paper outlining the background, importance, and multiple hypotheses to be tested in their group project. This paper may be a maximum of 5 pages double-spaced (not including references), 12-point font, with no less than 1” margins. This, the results write-up, and the final paper should be written in the style of the journal *Ecology*.

Results write-up: 2 ½ weeks before the final paper is due, each student will submit for preliminary evaluation their Results section. This will include a description of experimental results, tables and/or figures of data, and the outcome of statistical analyses of the data – as would be expected for a published manuscript.

Progress and final presentations: Each group will give a 30 minute presentation and anticipate 30 minutes of questions and discussion with the class.

Final paper: Each student will write their own paper as if it is a manuscript to be published, including abstract, introduction, materials and methods, results, discussion, and literature cited. Students may work together to analyze and interpret data prior to writing their papers. Papers should be no more than 10 pages double-spaced (not including figures and references), 12-point font, with no less than 1” margins.

Class participation: including attention to experiments, success within their group, and interaction with other groups during discussions and presentations. Fun coupled with success will be rewarded.