

ALICE LLOYD COLLEGE
COURSE OUTLINE

Course Number and Title: Biol 413 Ecology

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Office Hours: posted at office door

Prerequisite(s):

Biol 205, 206, 305, and senior standing in Biology or Biological Science Education 8-12; recommended Math 250.

Course Description:

BIOL 413 Ecology 3 credit hours

This course will explore biological evolutionary and ecological processes; and the consequences of these processes on population genetics, population dynamics and population growth, and ecosystem diversity. Other topics, including genetic drift, natural selection, responses to mutation, evolutionary rates, species interactions, speciation and extinction, community ecology, and niche selection, will be presented to provide a broader view of evolutionary processes and the changes in biotic and abiotic environmental conditions that lead to changes in biodiversity.

Relevant laboratory sessions may occasionally replace classroom lecture and discussion sessions. This is the capstone course for the Biology Major.

Objectives of the Course:

To familiarize the student with the concepts of Ecology and the importance of evolution in the overall structure and function of an ecosystem. The significance of population dynamics, species interactions, niche selection and population ecology will be stressed. The community will be stressed more than other levels.

The information presented during this course will be focused on specific problems. Students will be required to synthesize information into written and oral responses to key problems presented during the course as a means of developing abilities to effectively integrate and communicate information regarding science related topics.

Requirements for the Course:

Students will be required to:

1. attend scheduled class lectures, take all exams and quizzes, and complete all written assignments.
2. read regularly the assigned text material and associated supplementary readings.
3. demonstrate an understanding of the science associated with ecology.

4. demonstrate the ability to integrate knowledge into an understanding of ecology.
5. participate in group tasks, oral discussions, and individual efforts as apply to the responsive questions and critical-thinking tasks.

Technology:

Students will be encouraged to access on-line resources and websites that supplement their class lecture and laboratory readings.

Diversity:

Ecology is a very broad science. Ecological issues affect many aspects of our daily lives, and explain many of the social and cultural differences among peoples of the world. In lecture and lab, learning will involve information from many areas of science and many different parts of the world.

Writing Across the Curriculum:

This course will employ opportunities for students to display their verbal and written skills. Several essay questions will appear on exams, and other work, especially problem sets, where the student's grammar, spelling and critical thinking will be evaluated.

Resources and Materials:**Textbook:**

Cain, Michael I., William Bowman and Sally Hacker. 2008. Ecology. Sinauer. ISBN 978-0-87893-083-8 (**REQUIRED**) Associated website: <http://www.sinauer.com/ecology/>

Attendance Policy:

Attendance is required for all scheduled lectures as well as the laboratory sections. Prompt arrival to class is expected. As per ALC policy, any student with an absentee rate $\geq 20\%$, regardless of whether the absences are excused or unexcused, will fail the course. It is the *student's responsibility* to make every attempt to contact the instructor in advance to notify her of officially excused absences (e.g., professional school interviews, participation in college sanctioned events, etc.) in order to make alternative arrangements to complete any work that would be due during the excused absence. It is the *student's responsibility* to contact the instructor as soon as possible following any unforeseeable emergency (e.g., illness, accident, family emergency, etc.) in order to be given any extensions on deadlines for completion of any missed assignments. It is the *student's responsibility* to clear any absences with the Office of the Academic Dean. It is the *student's responsibility* to complete any and all assignments and to turn them in to be graded in a timely manner.

Make-up and late policies:

Tests can be made up if the student notifies the instructor in advance and a make up date arranged prior to the date of the test. It is important to return tests as quickly as possible, and so delays due to make up will be reduced as much as possible.

Problem sets will have the grade reduced by 10% for each day late.

You cannot miss your presentations. We will negotiate presentation times well in advance, and subsequent conflicts must be resolved prior to the presentation date in any event.

Policy on Plagiarism:

The ALC faculty has officially adopted the following policy on plagiarism:

“Plagiarism is the act of using another’s idea or expression in your writing without acknowledging the source...In short, to plagiarize is to give the impression that you have written or thought something that you have in fact borrowed from someone else” (21)

“Plagiarism often carries severe penalties, ranging from failure in a course to expulsion from the school.”

“The most blatant form of plagiarism is to repeat as your own someone else’s sentences, more or less verbatim...” (22)

“Other forms of plagiarism include repeating someone’s particularly apt phrase without appropriate acknowledgement, paraphrasing another person’s argument as your own, and presenting another’s line of thinking as though it were your own...”(23)

Source: Gibaldi, Joseph. *MLA Handbook for Writers of Research Papers*. 3rd ed. New York: Modern Language Association of America, 1988.

Evaluation:

Midterm exams:

There will be 3 midterm exams during the semester. Each midterm will cover a different section of the course. 30% of your grade will be attributed to midterm exams. Each exam is thus worth 10% of your final grade.

Problem sets:

There are 8 problem sets assigned during the semester. Problem sets will be handed out on a Friday and are due the next Friday. Problem sets are written responses to issues raised during the week. 40% of your grade will be attributed to problem sets. Each problem set is thus worth 5% of your final grade. These are written assignments, and quality of writing will be graded.

Problem set rubric:

Quality of writing, including proper formation of sentence paragraphs, other syntax issues, spelling and grammar: 2 of the 5 points. Effectively answering the questions: 3 of the 5 points. Note that one point here is 1% of your final grade.

I will take ¼ of a point off for each spelling error in a case study. Lack of proper sentences and paragraphs will result in 0/2 for the writing portion of the grade. I will forgive the first 2 grammatical errors in each case study. More than 2 grammatical errors will result in the loss of ¼ of a point per error.

While there are right and wrong answers to the questions, a wrong answer can be a high quality response. Some of the answers are totally open, and any decent answer will do. It is not so much the answer as the effort to produce an answer that is most important in these case studies. Learning how to answer more complex questions is most important here. It is more important in life in general to know how to find the answer than to know the answer.

Individual presentations:

Students will individually make presentations during the last week of classes. The individual student presentation will be worth 5% of your total grade.

Final Exam:

Comprehensive. Worth 25% of the final grade.

Grading:

The final grade for the course will be calculated based on the following formula:

Midterm exams (collectively)30% of total grade
Final Exam.....25% of total grade
Problems (collectively).....40% of total grade
Presentations.....5% of total grade

The following scale will be used for assigning grades:

A = 90-100
B = 80-89
C = 70-79
D = 50-69
F = ≤ 49

Lecture Schedule (tentative):

Midterm 1:

chapters 1 – 4.

Midterm 2:

chapters 5 - 9.

Midterm 3:

chapters 10 – 14.