

**OGLALA LAKOTA COLLEGE**  
Course Syllabus for

**Advanced Ecology (Biol 453)**

**Spring 2010**

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*Instructor:* Alessandra Higa  
*Office Hours:* at the college center on Tuesdays before class and/or at Piya Wiconi on Mondays and Fridays.  
*Class meet:* Tuesday from 1:00 - 4:00pm (pictel HSCC2-PHCC)  
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Course Description

Advanced Ecology (Biol 453) will build on information presented in general ecology, focus on the ecology of South Dakota with discussion of status and threats to those ecosystems. Ecology is the science dealing with the structure and dynamics of systems that consist of organisms and their living and nonliving environments. A research project will be undertaken in which the student designs a study that investigates some aspect of wildlife or ecosystem interactions. Research may involve the study of a local plant or animal population to better understand their ecological requirements or the investigation of a habitat and the interactions of plant and animal populations in that ecosystem.

Prerequisites

Bio 223 Ecology, Bio 303 Field Ecology, and Math 313 Intro to Statistics; all completed with a grade of "C" or better, or permission of instructor.

Required Text(s)

- 1) Molles, M. C, Jr. 2008. ***Ecology: concepts and applications, 5th Edition*** (paperback). McGraw-Hill. ISBN 978-0-07-305082-9. This is the textbook used during Ecology (Bio 223). For Advanced Ecology we will be using only few chapters. If you don't have the book, contact the instructor. The text is supported by a web-based learning center ([www.mhhe.com/ecology](http://www.mhhe.com/ecology)) designed to support student inquiry.
- 2) Cox, George W. 2002. ***General Ecology Laboratory Manual, 8th Edition*** McGraw-Hill. ISBN-13 9780072909746. Spiral Bound/Comb, 320pp.

Supplementary Materials

Several supplementary materials will be given during the semester, as needed.

Descriptive Reading Load

It is imperative that you *read* the scheduled chapters and/or scientific articles assigned before coming to class in order to be prepared for discussion and participation. Reading is an important key to success in this class. Grade 14 reading level.

## Research

You will be required to research about the ecology of plants or animals that occurs either on the Great Plains or the Black Hills (i.e. in both terrestrial and aquatic ecosystems and focusing on plant/animal communities, populations or individuals, as well as studies of the interactions between plants/animals and their environment or plants/animals and other organisms). To fulfill this objective you will: 1) collect information from scientific publications, scientific collections, local agencies reports, on topics related to your subject; 2) analyze the data; 3) write a report, and 4) prepare an oral presentation. Your reports should be written in *scientific style* (*Journal of Ecology* format – see “Author Guideline” - <http://www.journalofecology.org/view/0/authorGuideline.html>) with references to information sources cited in the text and should contain a literature cited section by the end. For your literature research you must use the **OLC library bibliographic resources** (i.e. online catalog, electronic database, electronic journals, and interlibrary loan). Internet resources as restrict to \*.edu or \*.gov websites and must be properly cited.

## Lakota Perspective Provided Through: Wolakolkiciyapi

Students are encouraged to display the Lakota values of respect, knowledge, generosity, fortitude, truthfulness, and courage as you perceive such.

## Class Attendance and Course Requirements

1. To succeed in this course, **regular attendance** is imperative. Your presence and participation is critical to your achievement. In accordance with OLC policy, you will be dropped from the course if you miss more than three consecutive class periods or if you miss more than five class periods during the semester.
2. If you plan to miss class you must contact the instructor *in advance* by e-mail. It is **your responsibility** to make sure you receive all assignments and instructions.
3. **No Make-ups exams.**
4. All OLC and Math & Science departmental policies apply to this class.

## Evaluations and Markings

1. **Class and Homework:** As you will have several supplementary materials (hand-outs), it is important to keep them organized (i.e. create a portfolio). Read and carry out your research.
2. **Research:** Keep all your data and notes in a notebook. This procedure enables to better organize and analyze your data during the research project. These assignments are multifaceted: (1) you will gain experience on ecology; (2) you will learn how to analyze data and research science information; and (3) you will gain experience by presenting your results in a scientific format.

3. **Exams and grading procedures:** the class grade is equal to lectures (50%) and research (50%) grades. The lecture grade will rest on one midterm, and one final exam (not comprehensive). The research grade will rest on class and homework and the final report.

### Grading

Grade		The following scale will be used:
Final Exam	25%	A = 90% - 100%
Midterm	25%	B = 80% - 89.9%
Class and home work	20%	C = 70% - 79.9%
Final scientific paper	30%	D = 60% - 69.9%
<i>Total</i>	100%	F = below 60%

### Tentative Schedule

Week	Chapter	Information
1		Introduction: getting to know who we are, class perspectives, and research project ideas
2		Part I - Research Project Guidelines: techniques of ecological study
3		Part I - Research Project Guidelines: techniques of ecological study
4		Part II - Population Ecology
5		Part II - Population Ecology
6		Part III - Terrestrial and Aquatic Ecosystems
7		<b>Midterm</b>
8		Part III - Intraspecific and Interspecific Interactions
9		Part III - Intraspecific and Interspecific Interactions
10		Part IV - Community Ecology
11		Part IV - Community Ecology
12		Part V - Ecosystem Ecology
13		Part V - Regional and Global Ecology
14		<b>Students presentations</b>
15		<b>Final Exam</b>

**\*Note:** Information contained in this syllabus was, to the best knowledge of the instructor, considered correct and complete when distributed for use at the beginning of the semester. The instructor reserves the right to make changes in the syllabus in collaboration with the class with reasonable notice to all concerned.