

Course Prefix/Number/Title: Ecology - BIOL 230

Number of Credits: 4 (four) semester credits

COURSE DESCRIPTION: This course is an in depth study of the general principles of Ecology. We will study the scientific method, biomes and ecosystems, population dynamics, predator-prey interactions, and global ecosystems. This course consists of three one-hour lecture and one two-hour lab each week.

Pre/Co-requisites: None

OBJECTIVES:

- 1) To learn and retain information essential to a broad knowledge of ecology.
- 2) To understand and utilize scientific methods of inquiry.
- 3) To understand current scientific views of natural phenomenon.
- 4) To practice sound, safe, and sensible laboratory techniques.
- 5) To appreciate the historic development of science.
- 6) To approach and solve problems by utilizing logical thought processes.
- 7) To apply scientific information and principles to everyday life.
- 8) Collect and organize data in a systematic manner.
- 9) To analyze and interpret data in accordance with scientific principles to make informed decisions and ethical choices.
- 10) To recognize the relationship between science and technology.

INSTRUCTOR: Shubham Datta, PhD

OFFICE: NSC 114

OFFICE HOURS: M, W, F 9:00-10:50, T, 10:00-12:00; and by appointment

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LECTURE: 1:00 to 1:50 am MWF in NSC 103

LAB: 1:00-2:50 am on Tuesday in NSC 103

TEXT: Ecology, Concepts and Applications, Molles, 6th Edition

TRAVEL FOR FIELD/LAB WORK: Students may need to travel for field/lab work during the semester.

Course Requirements:

GRADING: Grading is based on a standard college curve, where students earn a grade based upon the percent of total possible points they obtain. The lecture component of this course consists of 600 points (12 drop quizzes worth 5 points each, assignments worth 100 points, 3 lecture exams worth 100 points each, and one final exam worth 150 points). Drop quizzes and assignments

may not be made up, but students will be able to drop the lowest two scores of the twelve drop quizzes given during the semester. There is a one week grace period to make up any missed exam. Any missed exam not made up within the allotted time will be given a zero. Make-up exams may be of an essay nature and are usually considered more difficult. (Note: It is the responsibility of the student to schedule make-up work with the instructor at a time convenient to both parties.) Final letter grades are assigned based on the following criteria:

A =	90-100% of the total points
B =	80-90% of the total points
C =	70-80% of the total points
D =	60-70% of the total points
F =	<60% of the total points

GOAL:

The goal of this course is to facilitate learning about the animal kingdom so that students better understand and appreciate the inter-relationships between animals and their environment in order to promote the advancement of life sciences in society and to prepare students for a career in life sciences.

General Education Competency/Goal # 1: Identifies the interrelationships between humans and their environment.

LO 2: Demonstrates an understanding of the natural environment

LO 3: Applies scientific information in everyday life

Relationship to Campus Focus:

This course addresses the campus focus by consistently utilizing the biological diversity of the region: the Turtle Mountain Forest, the prairie pothole region, the J. Clark Salyer National Wildlife Refuge, the International Peace Garden, and Lake Metigoshe. Using these as natural laboratories to strengthen the educational experience and continuously expanding academic and career programming, Dakota College at Bottineau integrates technology to prepare students not only for the present but also to go beyond and improve the future.

Student E-mail Policy:

Dakota College is increasingly dependent upon e-mail as an official form of communication. A student's campus assigned e-mail address will be the only one recognized by the campus for official mailings. The liability for missing or not acting upon important information conveyed via campus e-mail rests with the student.

Classroom Policies:

All students will respect the classroom environment which will allow for maximum interaction between students and the professor.

Lab policies: Labs in this class are a privilege. Violation of school procedures regarding student conduct will not be tolerated. Many of the labs are all day field trips and you will be exempt from other classes. However, this does not exempt you from the work that is missed for those classes. All missed work from classes missed because of lab will be made up per arrangements with the other instructors. Students that violate this will miss out on future field trips. Labs are repeated around the same time each year.

Academic Integrity:

According to the DCB Student Handbook, students are responsible for submitting their own work. Students who cooperate on oral or written examinations or work without authorization share the responsibility for violation of academic principles, and the students are subject to disciplinary action even when one of the students is not enrolled in the course where the violation occurred. The Code detailed in the Academic Honesty/Dishonesty section of the Student Handbook will serve as the guideline for cases where cheating, plagiarism or other academic improprieties have occurred.

All students will do their own, original work on reports, laboratory assignments, and essays. Any student caught cheating on an exam or quiz will be reprimanded the first time. If it happens again, the student will drop the class.

Disabilities and Special Needs:

Students with disabilities or special needs (academic or otherwise) are encouraged to contact the instructor and Disability Support Services.

Please inform the professor within the first week of classes if any assistance is required due to disabilities or special needs.

Title IX:

Dakota College at Bottineau's (DCB) faculty are committed to helping create a safe learning environment for all students and for the college as a whole. If you have experienced any form of gender or sex-based discrimination or harassment, including non-consensual sexual intercourse, sexual harassment, relationship violence, or stalking, know that help and support are available.

DCB has staff members trained to support survivors in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. The College strongly encourages all students to report any such incidents to the College Title IX Coordinator.

Please be aware that all DCB employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers) are required to report information about such discrimination and harassment to the College Title IX Coordinator. This means that if you tell a faculty member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty member **must** share that information with the College's Title IX Coordinator. If you wish to speak to a confidential employee who does not have this reporting responsibility, you can find a list of resources on the Title IX website.

www.dakotacollege.edu/student-life/safety/title-ix

TENTATIVE COURSE OUTLINE

<u>DATE</u>	<u>TOPIC</u>	<u>READING</u>
8-26	Introduction	
8-28	Introduction: What Is Ecology?	Chpt. 1
8-31	Introduction: What Is Ecology?	Chpt. 1
8-29	Life on Land	
8-31	Life on Land	Chpt. 2

9-3	NO CLASS - LABOR DAY	
9-5	Life in Water	Chpt. 3
9-7	Life in Water	Chpt. 3
9-10	Temperature Relations	Chpt. 4
9-12	Water Relations	Chpt. 5
9-14	Energy and Nutrient Relations	Chpt. 6
9-17	Social Relations	Chpt. 7
9-19	Exam 1	
9-22	Population Genetics and Natural selection	Chpt. 8
9-25	Population Genetics and Natural selection	Chpt. 8
9-27	Population Distribution and Abundance	Chpt. 9
9-29	Population Distribution and Abundance	Chpt. 9
10-2	Population Dynamics	Chpt. 10
10-4	Population Dynamics	Chpt. 10
10-6	NO CLASS - ASSESSMENT DAY	
10-9	Population Growth	Chpt. 11
10-11	Population Growth	Chpt. 11
10-13	Life Histories	Chpt. 12
10-16	Exam Review and start Competition	Chpt. 13
10-18	Exam Review and start Competition	Chpt. 13
10-20	EXAM II	
10-23	Competition	Chpt. 13
10-25	Competition	Chpt. 13
10-27	Exploitative Interactions	Chpt. 14
10-30	Exploitative Interactions	Chpt. 14
11-1	Mutualism	Chpt. 15
11-3	Species Abundance and Diversity	Chpt. 16
11-6	Species interactions and Community Structure	Chpt. 17
11-8	Primary Production and Energy Flow	Chpt. 18
11-10	NO CLASS - VETERANS DAY	
11-13	Nutrient Cycling and Retention	Chpt. 19
11-15	Succession and Stability	Chpt. 20
11-17	Succession and Stability	Chpt. 20
11-20	Review	
11-22	EXAM III	
11-24	NO CLASS - THANKSGIVING	
11-27	Landscape Ecology	Chpt. 21
11-29	Landscape Ecology	Chpt. 21
12-1	Geographic Ecology	Chpt. 22
12-4	Geographic Ecology	Chpt. 22
12-6-8	Review for Exam	
12-11	Final Exams	