

**BERGEN COMMUNITY COLLEGE  
DIVISION OF MATHEMATICS, SCIENCE & TECHNOLOGY  
DEPARTMENT OF BIOLOGY/HORTICULTURE**

**STUDENT COURSE OUTLINE**

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COURSE TITLE: Bio 108 - Introduction to Environmental Biology

PREREQUISITES: None

COURSE CREDITS/HOURS: 4 credits / 3 lecture, 3 lab

GENERAL EDUCATION: YES

COURSE DESCRIPTION: This course investigates humans and their interactions with the environment. Topics covered include fundamental aquatic and terrestrial ecology, air and water pollution, world population problems, loss of biodiversity, pesticides, solid waste problems and an extensive review of energy problems and their solutions. Laboratories include measurements of various environmental pollutants, analysis of environmental parameters and descriptive and practical reinforcement of lecture material.

REQUIRED BOOK: Lynn, L.M. *Environmental Biology and Ecology Laboratory Manual*, Sixth Edition. Kendall/Hunt Publishers, Iowa, 2017  
ISBN 9781465299444

RECOMMENDED: *Essentials of Environmental Science*. Friedland, Relyea, and Courard, W. H. Freeman Publishing, 2012. ISBN 9781464100758.

***DO NOT, UNDER ANY CIRCUMSTANCES, PURCHASE USED LABORATORY MANUALS!! IF YOU ARE REPEATING THIS COURSE YOU NEED A NEW LAB BOOK. AFTER ALL, YOU ARE STARTING WITH A CLEAN SLATE.***

**Lecture learning objectives/Outcomes assessment**

1. Describe the process of science and how it is done, identify the properties of matter and identify the basic types of energy. Assessment will be based upon performance on exam questions.
2. Identify the components of an ecosystem and how they interact. Assessment will be based upon performance on exam questions.
3. Explain how evolution works and how it leads to greater biodiversity. Assessment will be based upon performance on exam questions.
4. Identify how climate works and how it effects biodiversity. Assessment will be based upon performance on exam questions.

5. Identify the components of an ecological community and population ecology and how it relates to human population growth. Assessment will be based upon performance on exam questions.
6. Explain how food is produced on our planet and how pests are controlled. Assessment will be based upon performance on exam questions.
7. Identify the components of air and water pollution and how humans are contributing to both. Assessment will be based upon performance on exam questions.
8. Identify the basic principles of geology and nonrenewable minerals. Assessment will be based upon performance on exam questions.
9. Describe the different ways that humans acquire energy. Assessment will be based upon performance on exam questions.
10. Identify the primary factors which contribute to climate change. Assessment will be based upon performance on exam questions.
11. Explain what is solid and hazardous waste and how it is removed from the environment. Assessment will be based upon performance on exam questions.

### **Laboratory learning objectives/Outcomes assessment**

1. Identify the parts of the microscope and demonstrate proper use. Assessment will be based on lab quizzes, lab book checks and observation in the lab.
2. Explain the basic principles of ecology. Assessment will be based on lab quizzes, lab book checks and observation in the lab.
3. Identify some of the ecological modifications that plants and animals have made to suit their environment. Assessment will be based on lab quizzes, lab book checks and observation in the lab.
4. Identify the basic principles of paleoecology and how we can use this information to make predictions about future climate changes. Assessment will be based on lab quizzes, lab book checks and observation in the lab.
5. Identify and explain the law of tolerance. Assessment will be based on lab quizzes, lab book checks and observation in the lab.
6. Identify and explain the different types of symbiosis. Assessment will be based on lab quizzes, lab book checks and observation in the lab.
7. Identify and explain predator prey relationships. Assessment will be based on lab quizzes, lab book checks and observation in the lab.
8. Identify the basic ecology of the wolf. Assessment will be based on lab quizzes, lab book checks and observation in the lab.
9. Identify and explain ecological sampling in forest and a meadow. Assessment will be based on lab quizzes, lab book checks and observation in the lab.
10. Identify and explain the relationship between dangerous plants and animals and humans. Assessment will be based on lab quizzes, lab book checks and observation in the lab.

### **Student Assessment Tools:**

The above student learning objectives will be generally assessed or evaluated by instructors using a variety of **assessment instruments** including **lecture exams, laboratory exams, quizzes, laboratory reports, written reports, presentations, projects, etc.** The decisions concerning the type or types and number of instruments that are used in a specific section of the course will be left to the instructor of that section. This information,

when given by the instructor should be recorded by the student in the **Student Assessment Section** of this document.

**Assessment measures:**

The student learning objectives will be assessed by:

1. Unit Examinations
2. Quizzes
3. Laboratory books
4. Research paper (s)

At the discretion of the instructor, assessment measures may be somewhat modified.

**COURSE CONTENT:**

**Chapter 1** Introduction to Environmental Science

**Chapter 2** Matter, Energy, and Change

**Chapter 3** Ecosystem Ecology and Biomes

**Chapter 4** Evolution, Biodiversity and Community Ecology

**Chapter 5** Human Population Growth

**Chapter 6** Geologic Processes, Soil, and Minerals

**Chapter 7** Land Resources and Agriculture

**Chapter 8** Nonrenewable and Renewable Energy

**Chapter 9** Water Resources and Water Pollution

**Chapter 10** Air Pollution

**Chapter 11** Solid Waste Generation and Disposal

**Chapter 12** Human Health Risk

**Chapter 13** Conservation of Biodiversity

**Chapter 14** Climate Alteration and Global Warming

**Chapter 15** Environmental Economics, Equity, and Policy

**LABORATORY SCHEDULE**

1. Week 1 Exercise 1. Use of the microscope - the non-science majors approach.
2. Week 2 Exercise 3. Pond study.
3. Week 3 Exercise 2. Introduction to ecology.
4. Week 4 Exercise 5. Ecological modifications in plants and animals.
5. Week 5 Handout exercise
6. Week 6 Exercise 9. Symbiosis
7. Week 7 Exercise 8. Predator – prey relationships
8. Week 8 Video and handout
9. Week 9 Exercise 6. Ecological sampling – a forest
10. Week 10 Exercise 7. Ecological sampling – a meadow
11. Week 11 Handout exercise
12. Week 12 Exercise 13. Dangerous Plants and Animals I
13. Week 13 Handout exercise
14. Week 14 Exercise 14. Dangerous Plants and Animals II

15. Week 15 Handout exercise

NOTE: THIS COURSE WILL BE TAUGHT IN ACCORDANCE WITH THE ABOVE SEQUENCE BUT IS SUBJECT TO CHANGE WITH THE INSTRUCTOR'S NOTICE.

**If you have a medical condition or develop a medical condition during this semester, which prevents you from fulfilling the requirements of this course, you must notify your physician. You and your physician must decide whether or not it is appropriate for you to remain in this course. If the decision is to remain in this course, please obtain a letter from your physician indicating that your continued participation in this course is appropriate and present it to the Department Chair.**

**CLASS PROTOCOL**

**Make-up Testing:** Any student who misses an exam without prior arrangements will receive a zero. If an exam is missed due to an emergency a make-up will be permitted if the student can provide WRITTEN documentation to confirm the nature of the emergency. Once the first student has left the exam NO students will be allowed to start the exam, so be on time. Cell phones must be turned off during all exams. If you are using a cell phone during an exam I will assume you are cheating and you will receive a zero on the exam.

**Make-up Quizzes:** Any missed lab quiz will result in a zero unless prior arrangements have been made. If quiz is missed due to an emergency a make-up will be permitted if the student can provide WRITTEN documentation to confirm the nature of the emergency and the missed work must be made-up within one week. Cell phones must be turned off during all quizzes. If you are using a cell phone during a quiz I will assume you are cheating and you will receive a zero on the exam.

**General grading policy:**

Unit Examinations (4 unit exams)	70%
Laboratory books and quizzes	30%

<b>Grading scheme</b>	A	90% - 100%
	B+	87% - 89.9%
	B	80% - 86.9%
	C+	77% - 79.9%
	C	70% - 76.9%
	D	60% - 69.9%
	F	0% - 59.9%

**Class Assignments** Late assignments will not be accepted unless prior arrangements have been made.

**Class Attendance:** There is no attendance policy for lecture classes. Success in class is related to attendance and it is hoped that the students will attend classes. Attendance will be kept by the instructor for administrative and counseling purposes. Your decision to attend class, or cut, tells me a great deal about your motivation as a

student and where academics ranks on you list of priorities. If you miss a class it is YOUR responsibility to find out what you missed either from a classmate or from me. **Absence is no excuse.**

**Lab Attendance:** If you find it necessary to miss a laboratory meeting, you should make arrangements, upon your return to school, to make up the laboratory class. There is no make-up for missed quizzes unless prior arrangements have been made. If you miss a Lab it is YOUR responsibility to find out what you missed either from a classmate or from me. **Absence is no excuse.**

**Lateness:** Lateness to class or lab sometimes cannot be avoided. Continued lateness is frowned upon.

**Smoking Policy:** As of January 1, 2008, Bergen Community College is smoke free campus, which means that you will have to give yourself and the others around you lung cancer and emphysema off campus, plus you won't smell so bad.

**Eating & Drinking:** Eating and drinking in the classrooms, lecture halls, laboratories and passageways is forbidden. Eating and drinking are permitted in the cafeteria and vending areas only.

**Faculty Absence:** Students are expected to wait twenty minutes for a faculty member to come to class. If at the end of twenty minutes, the faculty member does not come, the students should sign an attendance sheet, which indicates the course, date, and time. A student should deliver the attendance sheet to the divisional office (A304) if between 9:00 a.m. and 5:00 p.m. or to the Evening Office (C107) if before 9:00 a.m. or after 5:00 p.m. Students cannot be penalized by faculty for not waiting longer than twenty minutes.

**Laboratory Safety:** Your laboratory instructor will review safety precautions prior to each laboratory session. Careful adherence to these precautions is essential in order to prevent injury to yourself or to others working around you.

### **Academic Dishonesty and Plagiarism**

Bergen Community College is committed to academic integrity – the honest, fair and continuing pursuit of knowledge, free from fraud or deception. Students are responsible for their own work. Faculty and academic support services staff will take appropriate measures to discourage academic dishonesty. **Plagiarism** is a form of academic dishonesty and may be a violation of U.S. Copyright laws. Plagiarism is defined as the act of taking someone else's words, opinions, or ideas and claiming them as one's own.

### **Consequences of Violations Academic Integrity**

#### **A. Instructor's Sanctions for a Violation**

The faculty member will determine the course of action to be followed. This may include:

- Assigning a failing grade on the assignment;
- Assigning a lower final course grade;
- Failing the student in the course
- Other penalties appropriate to the violation;

In all cases, the instructor shall notify the Vice President of Student Services of the violation and the penalty imposed. The student has the right to appeal the decision of the instructor to the appropriate department head.

## **B. Institutional Sanctions for Violations**

When a violation of academic integrity has been reported regarding a student, the Vice President of Student Services may impose disciplinary penalties beyond those imposed by the course instructor, which may include suspension or dismissal from the College. The student shall have the right to a hearing before the Vice President of Student Services or a designated judicial affairs committee. Judicial procedures governing violations of academic integrity are contained in the student handbook.

## **Learning Assistance**

### **Henry and Edith Cerullo Learning Assistance Center**

The Tutoring Center, English Language Resource Center, Math Walk-In Center and Writing Center are collectively known as the Henry and Edith Cerullo Learning Assistance Center. The Cerullo Learning Assistance Center is located in the Pitkin Education Building, in Room L-125. The telephone number is (201) 447-7489. The Learning Assistance Center, staffed with peer and professional tutors, offers free individual and group tutoring, supplemental instruction, and online tutoring for subjects offered at the College. The Center provides alternative approaches to problem solving and organizational skills. Tutors help clarify classroom lectures and textbooks and help students prepare for exams. These services build student self-confidence and reduce fear of failure. The Center is equipped with the latest technology and software, including tapes, books, review sheets, exercises and software.

## **Services for Students with Disabilities**

The Office of Specialized Services/ Deaf Services, located in L-115 in the Pitkin Education Center provides accommodations and auxiliary services to students with disabilities attending Bergen Community College. Students are encouraged to submit documentation to OSS during the early stages of the admission process. The suggested deadlines for submitting documentation are as follows: August 1st for fall semesters, December 1st for spring semesters. For more information please contact our office at 201-612-5270 or at [www.bergen.edu/oss](http://www.bergen.edu/oss).

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## **WebAdvisor**

WebAdvisor is a web interface that allows students to access information contained in Datatel's Colleague, the administrative database used by Bergen Community College. Students may use WebAdvisor to register for classes, to pay tuition and fees, to view their class schedules, to check grades, to check on progress toward degree requirements, etc. WebAdvisor accounts are available for all students enrolled in credit programs. New students are strongly encouraged to attend an in-person registration or advisement session before using a WebAdvisor account. Eligible students without WebAdvisor user names and passwords may access their WebAdvisor account by going to *go.bergen.edu* and selecting "I'm new to WebAdvisor." Then, follow the on-screen directions. Check the WebAdvisor FAQ for answers to common questions, such as how to reset your password. Students must have a valid e-mail address on file with the College to use WebAdvisor

## **Testing Services**

The Bergen Community College Office of Testing Services (OTS) is located in Room S-127. OTS serves the college community by identifying, developing, procuring, administering, processing, and/or evaluating examinations, which meet a variety of administrative and instructional needs. To contact the OTS, please call (201) 447-7202. The Office of Testing Services administers makeup tests as a service for students who, for compelling and exceptional reasons, have missed a scheduled classroom examination. Students must receive prior permission from and make arrangements with their course instructors to take these examinations, under specific conditions, in the Office of Testing Services, Room S-127.

## **Sidney Silverman Library**

Main Building, Pitkin Education Center, L-wing, 2nd Floor.

Paramus Library Hours: (201) 447-7131 or visit <http://www.bergen.edu/library/calendar/gcal.htm>

Paramus Service Desk: (201) 447-7970

Meadowlands Location: 1280 Wall Street, Lyndhurst 2nd Floor

Meadowlands Library Hours: <http://www.bergen.edu/library/calendar/gcal.htm>

Meadowlands Service Desk: (201) 301-9692

[www.bergen.edu/library](http://www.bergen.edu/library)