Semester and year: 
Course Number: 
Meeting Times and Locations:

Instructor: 
Office Location: 
Phone: 
Office Hours: 
Email Address: 

COURSE TITLE:                   Bio - 108 Introduction to Environmental Biology

PREREQUISITES:                  None

COURSE CREDITS/HOURS: 4 credits / 3 lectures, 3 labs

GENERAL EDUCATION:                YES

COURSE DESCRIPTION:                Bio -108 Introduction to Environmental Biology is a study of 
humans and their interactions with the environment. Topics 
covered include fundamental aquatic and terrestrial ecology, air 
and water pollution and world population problems and their 
solutions. Laboratory sessions include measurements of various 
environmental pollutants, fundamental lab exercises in ecology, 
analyses of environmental parameters and descriptive and 
practical reinforcement of lecture material.

BOOKS: Please check with your instructor before you purchase any books. Instructors may require 
different books.

Required: Raven, P.L., L.R. Berg and David M. Hassenzahl, Environment, Seventh Edition 
55658-0.

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 form 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.

**Assessment measures:**
The student learning objectives will be assessed by:
1. Unit Examinations
2. Quizzes
3. Laboratory reports

**COURSE CONTENT:**

<table>
<thead>
<tr>
<th>UNIT</th>
<th>TOPICS</th>
<th>READINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Fundamental Aquatic and Terrestrial Ecology</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A. What is ecology?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Abiotic components of the environment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Community structure</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Ecosystems and energy flow through ecosystems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E. Ecological succession</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F. Interactions between species</td>
<td></td>
</tr>
<tr>
<td></td>
<td>G. Paleoecology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Raven: Chaps. 1,2,3,4,5,6,</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><strong>Population Biology</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A. Population characteristics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Growth</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Demography</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Solutions to the problems: Green revolution vs. birth control</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Raven: Chap. 14 22</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><strong>Water and Water Pollution</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A. What is water?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Types of pollutants</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Toxic wastes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Acid deposition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>E. Nutrients, organic wastes and BOD</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F. Water purification</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Raven: Chap. 8,9,10,18,19</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><strong>Solid Wastes</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A. Types of solid wastes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>B. Problems of disposal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C. Recycling</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D. Other solutions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Raven: Chap. 24</td>
<td></td>
</tr>
</tbody>
</table>

**READINGS**

5    | **Air Pollution** |
|      | A. What is clean air? |
|      | B. Gaseous and particulate pollutants |
|      | C. Climate change: Global Warming |
|      | D. Depletion of the ozone layer |
|      | Raven: Chaps. 20,21 |
E. Acid deposition
F. Solutions

6 Control of Pests and Weeds
   Raven: Chap. 7,23
   A. Competition between humans and other organisms
   B. Types of pesticides
   C. Biological magnification
   D. Alternatives to long-lived pesticides

7 Loss of Biodiversity - Endangered Plants and Animals
   Raven: Chap. 17
   A. Why is biodiversity important?
   B. Why organisms become endangered and extinct
   C. Effects of lost species
   D. Exotic species

8 Energy and Society
   Raven: Chaps. 11,12,13,16,25
   A. Our energy supplies and resources
   B. How is electricity produced?
   C. Short term problems vs. long term
   D. Non-renewable resources
   E. Renewable resources
   F. Future solutions

LABORATORY SCHEDULE
1. Exercise 1. Use of the microscope - the non-science majors approach.
4. Exercise 5. Ecological modifications in plants and animals.
5. Exercise 4. Paleoeoclogy
   Take Home Assignment, Exercise 17-Environmental Inventory
12. Exercise 7. Point Quarter
15. Exercise 18. Climate Issues

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

EVALUATION: Please check with your instructor as to how he or she will evaluate your for this course.

SPECIAL NOTES: All unit examinations must be taken in order to receive a grade. Make-up examinations will be administered in accordance with the instructor's and Division's policy.

Your instructor may give you an addendum(a) to this course of study. This course of study, plus any addenda will be considered OFFICIAL POLICY FOR THIS COURSE.
FACULTY ABSENCE PROCEDURE: IMPORTANT!

A daily listing will appear in the glass case located in the front lobby which will indicate all classes which are canceled. Another listing will appear in the glass case adjacent to the Hotel/Restaurant bulletin board in the East Hall. Students can consult these bulletin boards before going to class. If such a class does not appear on the day's cancellation notice, this information should be conveyed either to the Evening and Saturday Office, Rm. L-113, or the Division Office, Rm. A325.

Student and faculty support services:
1. Students experiencing difficulty with this course should acquaint themselves with the services of the Tutoring Center and Smarthinking.
2. The BCC Library provides extensive support services for student research.
3. Faculty office hours may be a productive vehicle for assistance in understanding the course material.
4. A wide variety of services are available to students with documented disabilities through the Office of Specialized Services (OSS). It is highly recommended that students with documented disabilities contact OSS (201-612-5270) during the college application process.

Smoking Policy: As of January 1, 1992, Bergen Community College facilities are smoke free. Smoking is not allowed in anywhere on campus.

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.

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.

Bio108scsp06
All BCC students enrolled in credit courses are entitled to a WebAdvisor account. With WebAdvisor, you may register online, pay your bill, check your schedule, room assignments, GPA, and find out what courses you need to take. To find out more about WebAdvisor, or to sign up online, visit <http://go.bergen.edu>! While there, please make sure you give us your preferred email address. You’ll find directions how to do this at <http://go.bergen.edu/email>.