BS 107 Introduction to Environmental Science  
Prerequisites: None  
4 Credit Hours (Lecture and Lab)

**Department:**  
Biology

**Course Description:**  
This interdisciplinary science course is designed to stimulate interest in environmental science, increase awareness of environmental problems, and improve understanding of environmental issues. The focus is on contemporary issues relating to biodiversity and sustainability. Topics include air and water quality, global climate change, environmental toxicants, energy resources, deforestation, overfishing, and endangered species. The course will also examine political and ethical concerns, sociological consequences, and economic impacts. A weekly lab session will offer a variety of experiences that demonstrate the principles, processes, techniques, and technologies of natural environmental systems and solutions.

**Course Competencies:**

Upon completion of the course, the student should be able to:

1. Describe environmental processes in terms of basic principles of biology, chemistry and physics.
2. Describe and explain environmental science concepts using appropriate vocabulary.
3. Describe the relationships between humans and the environment.
4. State causes and consequences of current environmental problems, including political and economic concerns.
5. Identify and critically analyze major environmental issues and possible solutions.

**Course Content:**

A. Introduction to Environmental Science  
   1. Nature of Environmental Science  
   2. Environmental Ethics  
B. Environmental Economics and Policy  
   1. Approaches and Environmental Implications  
   2. U.S. and International Environmental Policy  
C. Environmental Systems, Energy, Ecosystems  
   1. How Environmental Systems Work  
   2. Ecosystems and Biomes  
D. Ecology and Evolution  
   1. Evolution and Biodiversity  
   2. Population and Community Ecology  
E. Human Population  
   1. Demography
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2. Population and Society
F. Soils, Agriculture, and Food
   1. Soil Degradation and Conservation
   2. Pests and Pollination
   3. Biotechnology, Food and Sustainable Agriculture
G. Toxicology and Environmental Health
   1. Toxic Agents in the Environment and Effects
   2. Hazards to Environmental Health
   3. Risk Assessment and Management
H. Atmosphere, Air Pollution, and Global Climate Change
   1. Atmosphere
   2. Outdoor and Indoor Air Pollution
   3. Global Climate Change and Reducing Emissions
I. Freshwater and Marine Resources
   1. Freshwater Systems, Depletion, and Pollution
   2. Marine Systems, Human Use and Impact
   3. Overfishing and Marine Conservation
J. Biodiversity and Conservation Biology
   1. Global Biodiversity and Benefits
   2. Species Extinction
   3. Conservation Biology and Solutions
K. Land Use, Forestry, Resource Management
   1. Agricultural Land Use
   2. Parks, Reserves, and Wildlands
   3. Cities
L. Nonrenewable Energy Sources and Environmental Impacts
   1. Environmental Impacts of Fossil Fuel Use
   2. Nuclear Power
M. Renewable Energy
   2. Energy Conservation
N. Waste Management
   1. Municipal Solid Waste and Industrial Waste
   2. Hazardous Waste and Wastewater Treatment

Learning Assessments:

Course competencies will be assessed by the use of quizzes, exams, lab reports, assignments, presentations, discussion participation, written summaries, article reviews, and reaction papers.

Instructional Materials:

Guidelines for Requesting Accommodations Based on Documented Disability or Medical Condition

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

In order to begin the process all students must complete the “Disabilities Self-Identification Form” at this link: https://highlandcc.edu/pages/disability-services.

This form can also be accessed at the Highland Community College homepage under Students Services/Student Resources/Disability Service or by contacting the Disabilities Coordinator.