

## CUMBERLAND COUNTY COLLEGE

Course: BI 215 Ecology

Credits: 3

Prerequisite: BI 101

Description:

An integrated course with laboratory exercises closely correlated to the lectures dealing with the relationships between organisms and their environments. Population dynamics, nutrient cycling, community and ecosystem structure, evolution, natural selection, and current environmental issues will be covered.

Learning Outcomes:

Upon successful completion of this course, students will be able to:

- Identify important physical characteristics of the environment.
- Describe how physical environmental characteristics impact biological organisms and ecosystems.
- Describe adaptations to allow for success of plants, decomposers and animals.
- Discuss how natality, mortality, competition, predation, genetics and life history characteristics impact populations, communities and ecosystems.
- Evaluate human and natural impacts to the global environment.
- Students will logically and persuasively state and support orally their points of view or findings.
- Construct graphs and charts, interpret them, and draw appropriate conclusions.
- Students will employ the scientific method of inquiry to draw conclusions based on verifiable evidence.
- Utilize laboratory tools and practices to solve problems.
- Demonstrate critical thinking skills in the analysis of scientific data.
- Utilize critical thinking skills for computer-based access, analysis, and presentation of information.
- Use appropriate library/learning resource tools to access information in reference publications, periodicals and bibliographies.
- Analyze and interpret scientific data.
- Apply the scientific method to analyze a problem and draw conclusions from data and evidence.
- Describe connections between the environment and human societies, including how humans affect the environment and how the environment in turn affects human welfare.
- Apply their understanding of the fundamentals of science and mathematics to the description and quantification of the interactions of the atmosphere, hydrosphere, lithosphere, and biosphere, including humans.

Topical Outline:

- Introduction to Ecology

- Solar Radiation and Climate
- The Physical Environment
- Soils
- Adaptation
- Plant Adaptations: Photosynthesis & Light
- Plant Adaptations: Thermal, Moisture & Nutrient Environment
- Animal Adaptations
- Decomposition
- Properties of Populations
- Population Growth
- Intraspecific Competition
- Life History Patterns
- Interspecific Competition
- Concepts of Predation
- Introductory exploration of G.I.S. technology

Text:

Elements of Ecology (8th Edition) Thomas M. Smith & Robert Leo Smith  
 ISBN-10: 0321736079 | ISBN-13: 978-0321736079 | Publication Date: January 2, 2012

Academic Integrity:

Plagiarism is cheating. Plagiarism is presenting in written work, in public speaking, and in oral reports the ideas or exact words of someone else without proper documentation.

Whether the act of plagiarism is deliberate or accidental [ignorance of the proper rules for handling material is no excuse], plagiarism is, indeed, a “criminal” offense.

As such, a plagiarized paper or report automatically receives a grade of **ZERO** and the student may receive a grade of **F** for the semester at the discretion of the instructor.

Tutoring & Project Assist:

If you are having difficulty with work in this class tutoring is available through the Center for Academic & Student Success. If you think that you might have a learning disability, contact Project Assist at 856.691.8600 x 1282 for information on assistance that can be provided to eligible students.

**Before Withdrawing From This Course:**

If a student experiences adverse circumstances while enrolled in this course and considers withdrawing, s/he should see an advisor (division or advisement center) BEFORE withdrawing from the class. A withdrawal may cause harmful repercussions to completion rate standards and overall GPA, which can limit or eliminate future financial aid in addition to causing academic suspension.