

COURSE INFORMATION

COURSE PREFIX/NUMBER: **BIO 205**
COURSE TITLE: **Ecology**
LECTURE HOURS PER WEEK: 3.0
LAB HOURS PER WEEK: 0.0

Textbook Information: **DL Attendance/VA Certification:**

COURSE DESCRIPTION:

This course introduces basic principles of population biology, ecology, and environmental science as applied to the study of the interactions between humankind and the biosphere.

COURSE COMPETENCIES/PERFORMANCE OBJECTIVES

Upon successful completion of this course, the student should be competent to perform the following tasks:

Module 1: Introduction to Ecology

- Recognize the relationship that exists between ecology and the other sciences and its relevance to civilization
- Demonstrate appropriate use of biological terminology

Module 2: Physical Processes

- Describe the fundamental concepts related to energy transfers
- Explain the ecologically important biogeochemical cycles

Module 3: Populations

- Explain the importance of limiting factors in the environment
- Describe population fluctuations in ecological terms
- Define the term species
- Compare and contrast habitats and niches of organisms

Module 4: Communities

- Explain the basic principles of interspecific competition and coexistence
- Discuss the basic principles of evolution and coevolution

Module 5: Ecosystems

- Compare and contrast the different types of ecosystems
- Describe the flow of energy through trophic levels
- Construct models of food webs, food chains, and ecological pyramids
- Explain the ecologically important biogeochemical cycles

MINIMAL STANDARDS

Minimal standards of performance for receiving credit for the course are indicated by 60% accuracy on all evaluation instruments (see evaluation strategies) which address the performance objectives listed above.

COURSE REQUIREMENTS

Attendance Policy:

Students are responsible for attending meetings in the course until they have completed all course requirements. Students are responsible for all material covered and for all assignments made in all classes. Students who are absent from a course more than 20% of the total contact hours assigned will be withdrawn. Since Bio 205 has a total of 48 contact hours, any student who is absent more than 9.6 contact hours total must be dropped in accordance with the attendance policy of York Technical College. See attached Instructor's Individual Policy for more information.

Withdrawal from the course:

A student may withdraw from a course after the drop/add period until midterm with a grade of "W." To withdraw from a course, the student obtains a Withdrawal from Class form from their instructor or from the division office. Withdrawals after midterm will result in either a grade of "W" or "WF" depending upon the student's academic performance and attendance in the course at the time of the withdrawal.

Student Conduct

Students are expected to conform to all standards of conduct as specified in the York Technical College Handbook and Catalog. Students found guilty of academic dishonesty such as cheating or plagiarism will be given a grade of zero on that assignment and may be subject to further disciplinary action.

EVALUATION STRATEGIES/GRADING

Grades will be determined as described below:

- Module tests and other evaluations 65% of course grade
- Capstone Project 20% of course grade
- Comprehensive exam 15% of course grade

The grading scale is as follows:

- A 90-100
- B 80-89
- C 70-79
- D 60-69
- F Below 60

Attached is a statement of instructor's additional requirements and/or policy.

ENTRY LEVEL SKILLS

A student entering this course must possess reading comprehension and writing skills on at least the 10th grade level.

Prerequisites: NONE

Co-Requisites: NONE

Topic/Content Outline

Module 1: Introduction to Ecology

- Relationship to other sciences
- Levels of organizational hierarchy

Module 2: Physical Processes

- Energy in Ecological Systems
- Fundamental concepts of energy transfers
- Periodicity, temperature, nutrients, and light
- Moisture, climate, soil, and other physical parameters

Module 3: Populations

- Population dynamics
- Population growth trends
- Population fluctuations
- Community Interactions
- Concept of species
- Interspecific competition
- Predation, herbivory, and parasitism
- Concepts of habitat and ecological niche

Module 4: Communities

- Community dynamics
- Climax communities
- Natural selection
- Coevolution

Module 5: Ecosystems

- Concept of ecosystem
- Structure of ecosystem
- Global production and decomposition
- Examples of ecosystems
- Flow of energy through trophic levels
- Food webs, food chains, and ecological pyramids

EFFECTIVE:FA2006