

Des Moines Area Community College

COURSE INFORMATION

Acronym/Number BIOL126

Title FIELD BIOLOGY

Credit Breakout 3 2 2 0 0
(credit lecture lab practicum work experience)

PREREQUISITE(S):

None

COURSE DESCRIPTION:

Field and laboratory studies of native plants and animals of Iowa. Emphasis is placed on ecological relationships. Selected field trips are conducted to forest, prairie, marsh, and riparian habitats in the local area.

COURSE COMPETENCIES:

During this course, the student will be expected to:

1. Relate the distribution and abundance of plant and animal species to limiting factors.
 - 1.1 Discuss adaptations of plants and animals to climatic factors.
 - 1.2 Discuss adaptations of plants and animals to geological factors.
2. Describe the movements of energy and chemicals through natural ecosystems.
3. Discuss the basic principles of the concept of evolution.
4. List the basic principles of the species concept.
5. Discuss the dispersal of plant and animal populations.
 - 5.1 Describe methods of passive dispersal.
 - 5.2 Describe methods of active dispersal.

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6. Identify the basic principles of ecological succession.
 - 6.1 Distinguish between primary and secondary succession.
 - 6.2 List trends in community development during the succession process.
7. Identify the major biomes of North America.
 - 7.1 Describe the biotic composition of major biome.
 - 7.2 List adaptations of plants and animals common to major biomes.
8. Identify the basic principles of population dynamics.
 - 8.1 Relate the sample census method to the index method of population estimation.
 - 8.2 Discuss the S-shaped and J-shaped population growth curves.
9. Discuss the interactions that take place between living organisms.
 - 9.1 Outline the differences between commensalism, mutualism, and parasitism.
 - 9.2 Discuss the concept of territoriality and niche segregation.
10. Use field observations to describe the abiotic and biotic composition of forest, prairie, and wetland ecosystems.
11. Identify native plants and animals.
 - 11.1 Identify species of fish, amphibians, reptiles, birds, and mammals common to the midwestern section of the United States.
 - 11.2 Identify species of trees common to the midwestern section of the United States.
12. Demonstrate herbarium techniques.
 - 12.1 Demonstrate methods of preparing plant specimens for herbarium mounts.
 - 12.2 Prepare plant identification labels.
13. Comply with laboratory and field trip safety rules.

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INSTRUCTIONAL MATERIALS:

Textbooks: For each text used in this course, identify the minimum chapters to be covered in this course.

Ankeny & Urban:

Ecology and Field Biology, Lederer, 1984. Benjamin/Cummings.

Field Biology Laboratory Manual, Nelson, 1994. Des Moines Area Community College.

Trees of Eastern and Central United States, Harlow 1957. Dover.

A Field Guide to the Birds, 4th Ed., Peterson, 1980. Houghton Mifflin.

Study guide

None

Transparencies

None

Test banks

None

Computer hardware/software

None

Other (example: Laboratory equipment for biology/chemistry class)

Laboratory equipment for biology classes

Computer Laboratory

None

Preparation

date 6/25/93

by: Gary Nelson

Campus: A B C U OC

extension: 6531

verified by: _____

Competencies are reviewed annually.