

BIO 223: Ecology

Course description

BIO 223. ECOLOGY. Modern concepts of ecology. Structure and function at various levels of organization in ecosystems will be emphasized. Field and laboratory studies utilize local environments. Three 50-minute lectures per week and 3 hours of laboratory per week. Prerequisites: BIO 141-142. Offered every spring on St. Thomas campus only.

Objectives

When the class is completed the student should be able to

- Think biologically about ecological patterns and problems, think critically using ecological concepts, answer questions on standardized tests such as the GRE that require thinking biologically
- Solve mathematical problems in ecology
- Interpret ecological data, including data presented graphically
- Generate hypotheses about ecological patterns and design experiments to test them
- Collect ecological data in the field
- Test hypotheses using statistical tests
- Write a clear, complete, properly formatted scientific paper
- Read scientific papers critically
- Search the ecological literature
- Apply ecological concepts to the animals, plants, habitats, and ecological problems in the Virgin Islands
- Apply ecological concepts to global environmental problems

Topics covered

- Genetics and Ecology
- Extinction
- Group Selection & Individual Selection
- Life History Strategies
- Physical Environment
- Population Growth
- Competition
- Mutualism
- Predation
- Herbivory
- Parasitism
- Controls on Population Structure
- Types of Communities
- Global Patterns of Species Richness
- Species Diversity
- Stability/Equilibrium
- Succession
- Island Biogeography
- Trophic Structure
- Energy Flow
- Nutrients