

## **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