BSCI160: Principles of Ecology and Evolution

Course Description:

The goals of BSCI160 are to have students understand the major ecological and evolutionary processes that operate in the natural world and to become familiar with the diversity of life forms on Earth. Throughout the course, there will be an emphasis on how scientific data are collected, quantified, presented, and interpreted so that students improve their abilities to think scientifically and draw data-driven conclusions.

Some faculty members teach this class using a lecture format, while others use an active-learning format (lectures and in-class activities).

Prerequisites:

Must have math eligibility of MATH120 or higher

Course Credits: 3

Recommended: For Science majors.

Textbook:

Principles of Life by Hillis, Sadava, Hill, and Price (2nd edition).

Major Topics Covered in BSCI160 Include the Following:

1. Evolution
2. Natural selection
3. Mendel and Particulate inheritance
4. Hardy-Weinberg, a null model in evolution
5. Causes of Evolution
6. Sexual selection
7. Speciation and Phylogenetics
8. Origin of life, Archaea, Bacteria
9. Origin of Eukaryotes and multicellularity
10. Evolution plants
11. Evolution of fungi
12. Evolution of animals
13. Human evolution
14. Distribution of ecological systems
15. Population ecology
16. Human population growth
17. Species Interactions
    a. Competition
    b. Predation, Herbivory
    c. Mutualism
    d. Parasitism

18. Community Ecology
19. Ecosystem Ecology
20. Human Impact on the environment