Biology

Course # EAES 2013

Credits 6

Pre-requisites and Co-requisites: None

Course Description

This course provides an introduction into the study of general biology, starting from basic scientific concepts and processing to chemistry, physics and the natural laws that govern life. The course continues with studies of living creatures, from the tiny and simple through to the complexities of plants and animals, ending with a basic understanding of ecology and the study of biotechnology. Students will investigate biological concepts including the chemical basis of life, cell structure and function, metabolism, reproduction, genetics, evolution, biological diversity and classification, plant structure and function, animal structure and function and ecology.

Course Learning Outcomes

Upon completion of the course, the student should be able to:

- Arrange the levels of biological organization from least complex to most complex.
- Explain how DNA accounts for both the diversity and unity of life on Earth.
- Relate the structure and function of living organisms to their chemical basis.
- Relate the role of enzymes in biochemical pathways and cellular metabolism.
- Explain how photosynthesis and cellular respiration contribute to the cycling of carbon atoms on Earth.
- Summarize how evolutionary adaptations have led to the anatomical and physiological differences between the major taxonomic groups of organisms.
- Relate the role of plant tissues and organs to plant development, growth, nutrition and reproduction.
- Relate the processes of energy flow and chemical cycling to ecosystem ecology.

Course Assignments and Grading

Item	**Weight**
Class performance & activities	5%
Lab assignments	5%

Data collection, analysis & reports	15%
Short field work & report	5%
Mid-term exam	20%
Group project & presentation	15%
Workshop Quiz & paper	10%
Final exam	25%