ECOLOGY

Credits: 4

Theory hours: 4 per week

Practice hours: 4 per week

Department: Natural Sciences

ABSTRACT

Introduces the student to the science of interactions between life forms and their environment. The goal is to train the student to consider the foundation of this science when assessing political and practical matters of the intervention of mankind in nature. First, we will study the environmental factors and biological and physical cycles: soil, water, light, atmosphere, biotic factors. Then, and as a central subject, the interactions between biotic agents and their medium, their adaptation and evolution, which include: biosphere, ecosystem, matter and energy cycles, biomass and production, competition, organization, territoriality, society and population dispersion, population regulation and fluctuation, main climatic formations, and biomass. Human intervention is examined from these points of view: human population and resources, urbanization, deforestation, and loss of biodiversity, ozone, global warming, politics and environment, personal ethics and environment.

PROFESSOR’S THEMATIC APPROACH

This course explores the principles of ecology as an interdisciplinary science, which by integrating elements from other physical and natural sciences, aims to explore the reason for the abundance and distribution of organisms on Earth. To answer the previous question, during the course, the interrelations of organisms with their physical and biotic environment will be examined. We begin by explaining the fundamental objects of study of ecology, from organism scale to landscape scale. Then, we touch on the subject of current environmental crisis, where some of the most urgent problems such as global warming and the increase of pressure over soil are analyzed, which are leading to an accelerated loss of biodiversity. We go beyond reviewing its difficulties. Finally, topics on nature conservation and possible answers to face global environmental crisis are reviewed. This course includes theory and practice. Practice hours will reinforce theoretical concepts through experimentation and the learning of tools and techniques specific to ecology investigation.