

LAW (LMG2)

(Lecce - Università degli Studi)

Teaching

GenCod A007847

Owner professor MILAD SHOKRISARAVI

Teaching in italian FOUNDATIONS OF ECOLOGY

Teaching

SSD code BIO/07

Reference course LAW

Course type Laurea Magistrale a Ciclo Unico

Credits 8.0

Teaching hours Front activity hours: 60.0

For enrolled in 2022/2023

Taught in 2024/2025

Course year 3

Language ENGLISH

Curriculum AMBIENTE E TERRITORIO

Location Lecce

Semester First Semester

Exam type Oral

Assessment Final grade

BRIEF COURSE DESCRIPTION

The Ecology course provides basic knowledge of the structures and functions of ecological systems, from biological populations and communities to ecosystems and landscapes, also highlighting the effects of anthropogenic pressures at the structural and functional levels of ecosystems and the possible perspectives for nature conservation. In the second part of the course, themes concerning the major challenges of sustainability, which characterize this historical period, will be addressed with examples of both local and global significance.

REQUIREMENTS

The student must have a basic knowledge of the sciences, including physics, chemistry, and mathematics, as well as a fundamental understanding of biology to approach the microbial, animal, and plant worlds. The course will be taught in English; therefore, a good command of the English language is required.

COURSE AIMS

With the study of Ecology, the student will be able to achieve the following educational objectives:
In terms of knowledge and understanding:

- Understand the relationships of organisms with the environment and each other, and the importance of the goods and services provided by ecosystems to our societies.
- Gain awareness of the need to manage and conserve natural resources.

In terms of the ability to apply knowledge and understanding:

- Illustrate and argue on environmental issues both in terms of human-nature relations and environmental problems affecting our planet.
- Use the knowledge gained from both theoretical and applied ecology for the development of educational and teaching programs.

In terms of autonomy of judgment:

- Gain awareness of professional responsibility in terms of environmental ethics.
- Motivate and stimulate educational-environmental behaviors with full respect for natural ecosystems.

In terms of approaches to conservation and protection:

- Promote the formation of an ecological culture for the conservation and protection of biodiversity and ecosystems, on which to base normative approaches to conservation, enhancement, and management of ecosystems.

In terms of learning skills:

- Show the aptitude to transfer knowledge acquired in the ecological field, also through continuous in-depth study of ecological and environmental issues, paying attention to the differences in ecological scale in observing nature.
- Show willingness to debate and improve one's ecological knowledge through the analysis of available literature.

TEACHING METHODOLOGY

The course will be conducted in person with the possibility of exemptions during the course and PowerPoint presentations on ecological topics covered during the lectures.

ASSESSMENT TYPE

Oral and Written

FULL SYLLABUS

The program covers the following topics:

Introduction to Ecology

Overview of types of physical environments

The ecosystem: abiotic and biotic components

Population: properties and growth models

Species: characteristics and evolution

Ecological niche and interactions between and within species

Evolution of species and ecosystems

Community: characteristics, structure, and evolution

Ecosystem processes: photosynthesis, decomposition processes

Biomes and types of aquatic ecosystems

Goods and services provided by ecosystems

Diversity and sustainable development

Resource management and conservation

Environmental education: citizen behavior and citizen science

Teaching Ecology: scientific method, examples of teaching units

In the second part of the course, applied topics will be developed on:

Perturbative pressures from anthropogenic activities at a global level

Use of renewable and non-renewable resources

Sustainability of development: limits, threats, and intervention strategies

Biodiversity and ecosystems: ecosystem services

Case studies at regional and national levels

REFERENCE TEXT BOOKS

- Fundamentals of Ecology; E. P. Odum

- Foundations of Ecology; William P. Cunningham, M. Ann Cunningham, Barbara W. Saigo

- Introduction to theoretical ecology; P. Yodzis