

## **Course Annotation**

Course Title: **General Ecology and Neoecology**

ECTS Credits: 9 (324 h.)

## **Course objective**

Developing fundamental knowledge about structure, regularity of function and development of natural and man-made ecosystems of various levels of the organization

## **Course task**

Developing basic environmental knowledge about assessment of the current ecological state of the environmental objects and management decision making to protect and preserve the environment.

## **Course main chapters**

Object, subject and methods of traditional ecology. The evolution of the concept of ecology. Traditional definition of the basic concepts of ecology. Conditions, factors, resources. Ecological niche. Organisms, populations, groups. Interaction between organisms and their environment. Interaction of organisms with each other. Stability in the group structure. Theory of ecosystems in the traditional ecology. Concept of the ecosystems. Variety of ecosystems. Energy of the ecosystem. Dynamics and biological outputs of the ecosystems. Succession. Biosphere. Present state of the separate components of the biosphere.

Object, subject, methods of research, conceptual and terminological apparatus of neoecology. Neoecology structure. Basic laws, regularities, rules and principles in ecology and neoecology. Problems of ecological safety. Contamination study. Classification of contamination. Impact assessment on the environment. Control and management of environmental quality. Priority environmental problems in Ukraine. Environmental management.

## **Learning outcomes**

After attending the course students will be able to:

- Analyze the trophic links in the main types of natural biogeocenoses;
- Determine the flows of energy and matter in natural and man-modified ecosystems;
- Diagnose the condition of the environment according to objective indicators;
- Use methods of the bioecological assessment of natural and man-modified complexes;
- Assess the level of anthropogenic transformation;
- Use the environmental knowledge to research ecosystems at different levels of complexity;
- Predict the behavior of pollutants in the biotic and abiotic objects of the environment;
- Use the ecological maps and take part in their development;
- Develop measures to optimize management;
- Propose measures to protect the atmosphere, hydrosphere and soils from contamination, as well as conservation of biodiversity;
- Analyze present scientific information from publications and available internet resources.

## **Teaching methods used:**

- lectures and practical training sessions.

Final **assessment** of student's knowledge and practical skills is **examination**.

**Head of the Ecology Department,  
Professor**

**A.I. Gorova**