

## **Course Annotation**

Course Title: **Soil Science**

Credits: 3 (108 h.) and Course Paper 0.5 ECTS credits (18 h.)

## **Course objective**

Formation of basic knowledge in the field of soil science.

## **Course task**

Introduction to the formation, structure, composition and properties of soils and their role in the biosphere, as well as to the peculiarity of functioning.

## **Course main chapters**

Soils and their role in the biosphere. Soil-forming rocks and soil-forming processes. Living organisms in the soils. Mechanical, mineralogical and chemical soils composition. Organic components of soil. Colloids and soil-absorbing complex (SAC). Structure and physical properties of soils. Water, air, and thermal regimes of soil. Soil solution and oxidation-reduction processes in soils. Soil degradation in technogenesis, their diagnostics and rehabilitation.

## **Learning outcomes**

After attending the course students will be able to:

- Evaluate the soil as a system, which environmental sustainability is a basis for biosphere sustainable development;
- Reason the soils performance in the general exchange system of matter, energy and information between the main components of the environment;
- Organize and carry out the ranking of basic processes, the implementation of which results in the formation of soils as a central link of the environment;
- Be familiar with the general principles of soils classification using classical and up-to-date principles.

## **Teaching methods used:**

- lectures, laboratory training sessions and course paper.

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

**Head of the Ecology Department,  
Professor**

**A.I. Gorova**