

Course Annotation

Course Title: **Ecological Safety of Soils in Mining Regions**

Credits: 5 (180 h.)

Course objective

Acquirement of theoretical knowledge and practical skills in the assessment of features of negative soils adjustment and their specificity in terms of mining influence.

Course task

Introduction to the peculiarity of soil degradation in mining areas for acquisition of management skills for effective control of environmental safety on the basis of state assessment of technogenic transformed soils and after-effects of their changes.

Course main chapters

Soil as a basis for sustainable development of the environment. Classification and characteristics of types of soil degradation. Features of the physical, mechanical, chemical and biological soils degradation. General characteristics of soil degradation in mining areas. Technogenic factors that causing soil degradation, as well as the peculiarity of their realization at mining enterprises of various types. Chemical soil degradation from mining and mineral dressing. Phytosanitary and sanitary-hygienic consequences of soils degradation in the areas of mining facilities operation. Monitoring of the negative soils adjustment under the conditions of high technogenic load. Soil quality management in delfts.

Learning outcomes

After attending the course students will be able to:

- Qualitatively and quantitatively assess the mining impact on the soils;
- Analyze soils condition and their ability to self-healing;
- Predict the consequences of soils technological transformation and determine their ecological quality of locality (value class);
- Select the ecologically reasonable ways and methods for soils rehabilitation;
- Research the level of environmental risk of degradation under the influence of delfts;
- Organize the environmental monitoring of the technogenic overloaded soils;
- Provide the effective control of environmental hazards in mining areas on the basis of state assessment of technogenic transformed soils and after-effects of their changes.

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**

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