

Course Annotation

Course Title: **Environmental Safety**

Credits: 4.5(162 h.)

Course objective

Investigation of the main areas of protection of man, society and the environment from the urgent and potential threats posed by natural and anthropogenic stress on the environment.

Course task

Introduction to the basic principles of environmental safety of the atmosphere, hydrosphere, lithosphere and humans.

Course main chapters

Environmental security of atmosphere. The composition, structure and function of atmosphere. Air pollution. The main air pollutants, their impact on human health and the environment. Types of contamination. Classification of emissions into the air. Rationing of air quality. Air protection measures. Protection zones. Architectural and planning solutions for atmosphere protection. Main ways and methods of gas and dust emissions purification. Environmental safety of hydrosphere. Structure and function of hydrosphere. Types of water pollution. Sources of contamination of the hydrosphere. The use of fresh water. Rationing of water pollution. Main ways and methods of wastewater treatment. Environmental safety of lithosphere. The structure of lithosphere. Landscapes, their species and destruction of contaminated soils. Regulation and control of soil pollution. Environmental safety of the person. Negative impact on humanity of anthropogenic disturbance of biosphere. A healthy way of life as the basis of longevity. Rational human nutrition. Alcohol, tobacco, drugs and other risk factors to human health.

Learning outcomes

After attending the course students will be able to:

- Classify the types of environmental contamination according to origin, shape and the state of aggregation;
- Classify hazard signs of substances and categories of water use;
- Classify enterprises according to the degree of danger to the environment,
- Classify the types of permissible concentrations of substances in the air,
- Calculate maximum permissible concentration of harmful substances in the air of big cities and resorts;
- Calculate maximum permissible concentration of harmful substances in the territories of enterprises;
- Analyze the location of industrial object and offer architectural and planning measures to reduce the negative impact on the environment;
- Classify the types of discharges and emissions and choose the appropriate methods for their purification;
- Determine the size of the sanitary protection zones of enterprises and their planting area;
- Determine the level of chemical contamination of soils.

Teaching methods used:

- lectures and laboratory training sessions.

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

**Head of the Ecology Department,
Professor**

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