

## **Course Summary**

Course Title: **METEOROLOGY AND CLIMATOLOGY**

Credits: 3 (108 h.)

### **Course objective**

Acquisition of theoretical knowledge and practical skills in the field of composition, structure, properties of the atmosphere and the physical processes that take place in it due to interaction with the earth surface and space environment.

### **Course tasks**

Familiarization with the methods of atmosphere state description, climate and weather formation and determination of climate factors needed for state environment prediction while implementing measures to reduce the impact of industrial activity on the environment.

### **Course outline**

Introduction to the discipline, the subject of meteorology and climatology. Air and atmosphere. Solar radiation and atmosphere. Pressure field of the atmosphere. Wind. Thermal conditions of the atmosphere. Water in the atmosphere. Atmospheric circulation. Climate formation, microclimate.

### **Learning outcomes**

After completing the course students should be able to:

- characterize the composition of atmospheric air and its main meteorological parameters;
- analyze the indices of solar radiation;
- analyze the indices of atmospheric pressure and distinguish between its vertical and horizontal gradients, which influence the air-mass transport and wind generation;
- analyze the thermal conditions of the atmosphere, circulation of moisture in the atmosphere, the formation of atmospheric processes of different scales;
- analyze the processes of climate and microclimate formation;
- determine the atmospheric pressure, soil, water and air temperature using technical equipment for measuring, control the solar radiation;
- define various indicators of air humidity;
- control the parameters of the wind and create the wind rose.

**Training activities: lectures and laboratory training sessions.**

**End-of-the-term assessment: test.**

**Head of the Ecology Department,  
Professor A.I. Gorova**