Study Programme :BSc in Ecology

Level: bachelor

Course title: Environmental physics

Status: elective

ECTS: 6

Requirements:

Learning objectives

Introducing students to the applications of the principles of physics in solving modern problems in the human environment. Students will learn the essential characteristics of different sources of energy, basic physical processes in the atmosphere, lithosphere, hydrosphere and the sun. Introducing students to modern physical methods of measuring pollutants. Encouraging students to learn more about diagnosis pollutants by independent selection of appropriate topic of the seminars.

Learning outcomes

The introduction of students to interdisciplinary biophysical measurements.

Syllabus

Theoretical instruction

Units and dimensions. Measurements in physics. The mechanics of movement. Fundamental forces of nature. Energy. Pressure. Oscillations and waves. Sound. Noise as a source of pollution. Gases and fluids. Transport of pollutants in fluids. The mechanisms of heat transport. Electromagnetic fields in the living and working environment. Light. Optical instruments. Fundamentals of atomic and molecular physics. The application of lasers in protecting the environment. Radiation of the sun. The greenhouse effect of ionizing radiation. Radio - contamination of biosphere. The effects of radiation dose and protection. Sources, production and transportation of energy, and the overall implications for the environment.

Practical instruction

Exercises follow a program of lectures.

Weekly teaching load				Other:
Lectures: 4	Exercises:	Other forms of teaching: 2	Student research:	