

Level: bachelor				
Course title: Physical principles of environmental protection				
Status: obligatory				
ECTS: 7				
Requirements: none				
Learning objectives To teach the students about the basic physical principles of environmental protection and revitalization of degraded ecosystems.				
Learning outcomes Students will be introduced to the physical principles of environmental protection and trained to apply this knowledge in practice.				
Syllabus Environmental protection as a scientific discipline, The global concept of environment, Concept of sustainable development, Physics as a scientific discipline and measurement in physics, Mechanics of fluids, Heat and temperature, The molecular-kinetic theory of gases, Principles of thermodynamics, Direct and alternating current, Nature of electromagnetic radiation , Radioactivity and characteristics of ionizing radiation, Principles of detection of ionizing radiation and the dose of ionizing radiation , The energy balance of the Earth, The solar constant assessment based on a black body model, The solar cycle and climate change, Milankovic's theory of climate change, Solar activity and its effects on Earth, The structure and composition of Earth's atmosphere, The greenhouse effect and estimate the surface temperature of the Earth, The gain of greenhouse effect and global warming effects. Artificial sources of non-ionizing radiation in the environment.				
Weekly teaching load				Other:
Lectures: 3	Exercises: 2	Other forms of teaching: 1	Student research:	