

<b>Level:</b> PhD				
<b>Course title:</b> Physical principles of environmental protection				
<b>Status:</b> elective				
<b>ECTS:</b> 15				
<b>Requirements:</b> none				
<b>Learning objectives</b> The goal of this course is to teach the students about the basic physical principles of environmental protection, monitoring of physical parameters and revitalization of degraded ecosystems.				
<b>Learning outcomes</b> After the successful completion of this course, the students will be familiar with the physical principles of environmental protection. Thus, the students will be trained to apply this knowledge in practice.				
<b>Syllabus</b> 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 the Earth; The structure and composition of the Earth's atmosphere; The greenhouse effect and estimates of the surface temperature of the Earth; The gain of greenhouse effect and global warming effects. Artificial sources of non-ionizing radiation in the environment.				
<b>Weekly teaching load</b>				Other:
Lectures: 5	Exercises:	Other forms of teaching:	Student research: 5	