Study Programme :BSc in Ecology

Level: bachelor

Course title: Chemistry within Ecology

Status: elective

ECTS: 6

Requirements: Completed chemistry exam

Learning objectives

Acquiring knowledge of chemical transformations of inorganic and organic origin in atmosphere, hydrosphere and pedosphere, cycling of materials in ecosystem, human impact on the environment, chemical basis of primary and secondary biomolecules

Learning outcomes

After successful competion of pre-exam and exam duties, a student will be able to deal with: theoretical and experimental chemistry of knowledge, chemical issues in the atmosphere/hydrosphere/pedosphere, basic chemical analysis and results' interpretation

Syllabus

Theoretical instruction

Chemical transformation of inorganic and organic material in the atmosphere/hydrosphere/pedosphere, cycling of materials in Ecosystem. Chemical transformation of gasses (ozone, acidic oxides of carbon and nytrogen, etc.) and basis of photochemical reactions in the atmosphere. Hydrosphere: solubility of gasses, equilibrium in colloid chemistry and heterogeneous equilibrium in hydrosphere. Physico-chemical impact on material cycling in hydrosphere. Chemical properties of inorganic and organic molecules in pedosphere. Heterogeneous equilibrium. Chemical properties of particular radioactive isotopes. Inorganic and organic nanoparticles-toxicity and application in Ecology. Chemical properties of primary (carbohydrates, lipids, proteins, nucleic acids) and secondary (alcaloides, terpens) biomolecules.

Practical instruction

Practical instructions are in compliance with theoretical instructions.

Weekly teaching load				Other:
Lectures: 3	Exercises: 3	Other forms of teaching: /	Student research: /	/