

Level: bachelor				
Course title: Environmental Protection Technologies				
Status: obligatory				
ECTS: 9				
Requirements: none				
Learning objectives Training students for management and control of active protection of the environment.				
Learning outcomes Training students for management and control of active protection of the environment. Master the necessary knowledge on unit processes of technology (technological operations) for protecting the environment from anthropogenic pollution, which will be applied in the framework of the protection of air, water and soil protection.				
Syllabus <i>Theoretical instruction</i> Basic principles of environmental technology. Separation processes (sedimentation, filtration, flotation, membrane separation). Chemical processes (coagulation, flocculation, neutralization, chemical vapour deposition, oxidation processes). Diffusion and thermal processes (transfer of gases - aeration, ion exchange, thermal processes - evaporation, distillation and rectification, incineration and pyrolysis). Biological processes (aerobic processes with suspended and immobilized microflora, anaerobic processes). Basic technological scheme of purification of gases (systems to remove particles and aerosols, gas separators, wet and dry scrubbers for SO ₂ removal, selective catalytic and non-catalytic reduction of NO _x). Combined gas purification. Basic technological scheme of wastewater treatment (primary, secondary, tertiary treatment, physical-chemical, chemical and biological processes and procedures for the treatment of sludge from wastewater treatment). BAT for the purification of communal waste water, joint treatment of municipal and industrial wastewater. Control of a wastewater treatment plant. Basic technological scheme for treatment of waste (waste minimization, recycling, composting, thermal waste treatment). Remediation of contaminated sites. <i>Practical instruction</i> Practical instruction follows the theoretical one.				
Weekly teaching load				Other:
Lectures: 3 (45)	Exercises: 3 (45)	Other forms of teaching: 1 (15)	Student research:	