Level: bachelor

Course title: Remediation processes and technologies

Status: obligatory, elective

ECTS: 6

Requirements: none

Learning objectives

Introduce students to the basic remediation processes and technologies and prepare students for the remediation of the contaminated sites.

Learning outcomes

Students should know how to: define and describe the most frequently applied remediation techniques; analyze and consider contaminated sites and on determine the need for remediation; choose a technique or technology needed for the rehabilitation of a locality, management of physical, chemical and biological processes in the direction of protection against further contamination and remediation of existing conditions; solve computational tasks related to remediation treatments.

Syllabus

Theoretical instruction

Introduction to the techniques and technologies for the remediation of the contaminated sites and the processes on which they are based. Contaminated sites - the type and distribution of contamination and remediation. Bioremediation (principles, factors, and techniques of in-situ and ex-situ process monitoring). Phytoremediation. Physico-chemical remediation techniques (solidification / stabilization, separation, electrokinetics, incineration and pyrolysis, oxidation). Remediation of oil contaminated surface waters. Remediation of contaminated sediment. Sustainable management of sediment. Kinetics of the remediation process.

Practical instruction

Calculations.

Weekly teaching load				Other: /
Lectures: 3	Exercises: 2	Other forms of teaching: /	Student research: /	