

SOIL PROTECTION

Title of Study Programme and Code		Type (compulsory/optional)	Cycle	Year of study when the component is delivered (if applicable)
Environment Protection Engineering, 6531EX042		Compulsory	1 st	3rd
Semester/trimester when the component is delivered		Number of ECTS credits allocated	Language of instruction	Mode of delivery (face-to-face/e-learning/...)
5 th		4	Lithuanian	Face - to face/ distance learning
Learning outcomes			Study methods	Assessment methods
After completion of the study subject, a student should be able:			An interactive lecture; Problem training; Self-employment in preparation for control and practical works; Consulting.	Reference work; Practical defense work; Exam.
LO 1	To practice the technology (the improvement of water and waste water treatment, air pollution, waste management and soil protection, the use of renewable energy sources) knowledge and ability to apply them to solving environmental problems, adapting a well-known in practice proven technologies.			
LO 2	To select and perform appropriate laboratory testing to meet environmental challenges and to analyze their results.			
LO 3	To find environmental engineering activities in the relevant legal, technical and scientific sources of information in public and specialized databases.			
LO 4	To apply analytical and simulation methods to the analysis of environmental aspects. LO 6 Ability to assess environmental aspects-activities.			
LO 5	To plan organizational and technological environmental measures, projects for carrying out business activities.			
LO 6	To assess environmental aspects-activities.			
LO 7	To deal with environmental problems in the choice of technology, allowing for a reduction of the pollution of the air, wastewater, soil and waste management.			
LO 8	To analyze properly, collect and use the data, giving the public a clear and consistent practical policy solutions to the specific problems of environmental engineering/defined objectives.			

LO 9	To solve engineering challenges, individually and in a team.		
Prerequisites (these courses must be successfully completed prior to taking this particular course)			
Ecology and Environmental Science.			
Course content			
<ol style="list-style-type: none"> 1. Soil in a special natural body. Soil formation. Practical work: the determination of the soil profile. 2. The composition and properties of soil. Practical work: soil moisture, density and type setup. 3. Soil formation process and its factors. Humus. Practical work: Soil formation factors. Humus formation. 4. Living organisms in the soil. Soil microorganisms and their role. 5. Participation in the carbon and nitrogen metabolism of the microorganisms downstream. 6. The acidity of the soil colloids of, solutions. Practical work: Soil acidity and nutrient elements (NPK). 7. Water, air and soil thermal regimes. 8. Soil erosion. 9. Soil contamination. Harmful compounds in the soil. Practical work: the classification of the soil pollution sources. 10. Soil protection strategy. 11. The biological treatment technology of soil. 			
Recommended or required reading and other learning resources/tools			
<ol style="list-style-type: none"> 1. Henry d. Foth (1990) Fundamentals of soil science, Arcata Graphics Company. 2. Edward J. Plaster (2009) Soil Science and Management, Delmar. 3. L.R. Petrenko, Ye. M. Bereznyak (2008) SOIL SCIENCE: Practical Methods Manual, NAU Publishing Center. 			