

COURSE OF DOCTORAL STUDIES

Course title	Field of science (branch) code	University / Faculty	Institute / Department
Soil cover structure of Lithuania	Natural Sciences (Physical Geography) N 006	Vilnius University / Faculty of Chemistry and Geosciences	Institute of Geosciences / Department of Geography and Land management
Study methods	Number of credits allocated	Study methods	Number of credits allocated
Individual work	8	Seminars	1
Consultations	1		
Course annotation			
<p>The aim of the course is to acquaint the doctoral student in detail with the spatial structure of Lithuanian soil cover and its spatial features.</p> <p>Introduction. Soil concept and its functions; its place in the landscape structure, its relation to anthropogenic factors. The place of soil science in the science system.</p> <p>Soil formation. Soil-forming phases (solid, liquid, gaseous and organic) and their role in soil functioning. Soil formation factors. Elementary and the typical main soil formation processes of Lithuanian soils. Pedogenesis types and its duration. Soil physical properties and hydrothermal regime. Soil biogeochemistry. Lithuanian soil cover. Economic value and use of Lithuanian soils.</p> <p>Soil in the context of time and space. Soil memory, its formation, types of record and carriers. The information field structure of soil cover.</p> <p>Lithuanian soil cover and its structure. The concept and main indicators of soil cover and its structure. The main groups of Lithuanian soils. Lithuanian soil regionalization.</p> <p>Seminar. Soil in the context of a doctoral dissertation topic.</p>			
Required readings			
Breemen van N., Buurman P. 2002. Soil Formation. Second Edition. New York, Boston, Dordrecht, London, Moscow.			
FAO. 2006. Guidelines for soil description. Fourth edition. Rome.			
FAO. 2015. World reference base for soil resources 2014. Update 2015. Rome			
Soil Atlas of Europe. 2005. European Soil Bureau Network. European Commission. Luxembourg			
Targulian V.O., Bronnikova M.A. 2019. Soil Memory: Theoretical Basics of the Concept, Its Current State, and Prospects for Development. Eurasian Soil Science 52(3):229-243.			
Recommended reading			
Slepetiene A., Amaleviciute-Volungė K., Slepetys J., Liaudanskiene I., Volungevicius J. 2018. The status of Pachiterric Histosol properties as influenced by different land use. <i>Peat</i> , Edited by B. Topcuoglu, M. Turan. London. 49-73.			
Vaisvalavičius R., Volungevičius J., Buivydaite V.V., Gregorauskiene V. 2018. Agricultural areas within hummocky moraine landscapes of north-east Lithuania. <i>Soil Sequences Atlas IV</i> . Edited by M. Świtoniak, P. Charzyński. Toruń: Nicolaus Copernicus University Press, 183-198.			
Vaisvalavičius R., Volungevičius J., Buivydaite V.V., Gregorauskiene V. 2018. Forest areas within a sandy glaciolacustrine plain of the middle course of the Nemunas river, Lithuania. <i>Soil Sequences Atlas III</i> . Edited by M. Świtoniak, P. Charzyński. Toruń: Nicolaus Copernicus University Press, 97-110.			
Vaisvalavičius R., Volungevičius J., Buivydaite V.V., Gregorauskiene V. Soils of eastern slope of the Curoni Spit dune in Juodkrantė old-growth forest. <i>Soil Sequences Atlas II</i> . Edited by M. Świtoniak, P. Charzyński. Toruń: Nicolaus Copernicus University Press, 2018. 67-80.			
Vaisvalavičius R., Volungevičius J., Buivydaite V.V. 2014. Forested areas within sandy lowlands and continental dunes of South-Eastern Lithuania. <i>Soil Sequences Atlas</i> . Edited by M. Świtoniak, P. Charzyński. Toruń: Nicolaus Copernicus University Press. 23-36.			
Consulting lecturers name, surname	Degree	The most important works in the field of science (branch) have been published during the last 5 years	
Jonas Volungevičius	Dr.	Kochiieru, M., Feiza, V., Feizienė, D., Volungevičius, J. , Deveikytė, I., Seibutis, V., Pranaitienė, S. 2021. The effect of environmental factors and root system on CO ₂	

	<p>efflux in different types of soil and land uses. <i>Zemdirbyste-Agriculture</i>, 108(1), 3-10</p> <p>Kochieru, M., Feizienė, D., Feiza, V., Volungevičius, J., Velykis, A., Slepėtienė, A., Deveikyte, I., Seibutis, V., 2020. Freezing-thawing impact on aggregate stability as affected by land management, soil genesis and soil chemical and physical quality. <i>Soil & Tillage Research</i>. 203 (2020) 104705.</p> <p>Kochieru M., Lamorski K., Feiza V., Feiziene D., Volungevicius J. 2020. Quantification of the relationship between root parameters and soil macropore parameters under different land use systems in Retisol. <i>International Agrophysics</i>, 34, 301-308.</p> <p>Šlepėtienė A., Volungevičius J., Jurgutis L., Liaudanskienė I., Amalevičiūtė-Volungė K., Šlepėtys J., Cesevičienė J. 2020. The potencialo f digestate as a biofertilizer in eroded soils of Lithuania. <i>Waste management</i>, 102, 441-451.</p> <p>Kazlauskaitė-Jadzevica A., Tripolskaja L., Volungevicius J., Baksienė E. 2020. Which land use is better suited to increase the fertility of ex-arable sandy soils? <i>Zemdirbyste-Agriculture</i>, 107(3), 203-208</p> <p>Kryzevicius Z., Karcauskiene D., Alvarez-Rodriguez E., Zukauskaitė A., Slepėtienė A., Volungevicius J. 2019. The effect of over 50 years of liming on soil aluminium forms in a Retisol. <i>The Journal of Agricultural Science</i>, 157(1). 12-19.</p> <p>Volungevičius J., Feiza V., Amalevičiūtė-Volungė K., Liaudanskienė I., Šlepėtienė A., Kuncevičius A., Vengalis R., Vėlius G., Prapiestienė R., Poškienė J. 2019. Transformations of different soils under natural and anthropogenized land management. <i>Zemdirbyste-Agriculture</i>, 106(1), 1-14,</p> <p>Kochieru M., Lamorski K., Feiza V., Feizienė D., Volungevičius J. 2018. The effect of soil macroporosity, temperature and water content on CO₂ efflux in the soils of different genesis and land management. <i>Zemdirbyste-Agriculture</i>, 105(4), 291-298.</p> <p>Volungevicius J., Amaleviciute K., Versulienė A., Feiziene D., Feiza V., Slepėtienė A., Liaudanskiene I., Vaisvalavicius R. 2018. The effects of agrogenic transformation on soil profile morphology, organic carbon and physico-chemical properties in Retisols of Western Lithuania. <i>Archives of Agronomy and Soil Sciences</i>, 64(13), 1910-1923.</p>
<p>Approved by the Doctoral Committee for Physical Geography (N006) on 9th of March 2021, protocol no. (4.20 E) 610000-KT-24</p>	
<p>Committee Chairman assoc. prof. dr. D. Pupienis</p>	