COURSE OF DOCTORAL STUDIES

Course title	Field of science (branch) code	University / Faculty	Institute / Department
Spatial Data Management	Natural Sciences (Physical Geography) N 006	Vilnius University / Faculty of Chemistry and Geosciences	Institute of Geosciences / Department of Cartography and Geoinformatics

Study methods	Number of credits allocated	Study methods	Number of credits allocated
Lectures		Seminars	
Individual work	9	Consultations	1

Course annotation

Aims of course. Understanding principles of spatial information organization and management. Understanding the structure and functions of spatial data infrastructures at different levels. Understanding general principles beyond spatial information systems, spatial data structures, specificity of their use. Knowing standards for spatial data, metadata and services, architecture of spatial data infrastructure. Ability to understand and critically assess spatial information systems and spatial data infrastructures presented in professional literature. Ability to evaluate compliance of spatial information systems with legal acts and standards. Ability ro independently plan, design, manage and document spatial information systems.

Main topics. Principles and problems of spatial information organization and management. EU directives, environmental acquis and other legislation that regulates spatial information management. Spatial information management in Lithuania. Strategies of development and management of spatial information systems. System analysis. Requirement engineering. Database design. Metadata. Project management, design and implementation of a spatial information system. Change management. Risk management. Spatial information standards and specifications. Need for standardisation. Geospatial standardisation organisations. Standards that impact spatial data infrastructures. Development and profiling of standards. ISO 19100 standards. Spatial information infrastructure: organisational and technical architecture. Geoportals. Lithuanian spatial information infrastructure, datasets and services. EU INSPIRE geoportal.

Required readings

Longley P. A. et al. 2015. Geographic Information Systems and Science. 4th edition. Wiley-Blackwell
Masser I. 2010. Building European Spatial Data Infrastructures. Esri Press; Second Edition
Lithuanian spatial information portal 2000. SE "GIS-Centras", Vilnius, 2021. https://www.geoportal.lt/geoportal/ publikacijos
Govorov M. 2008. Geographic Information Infrastructure standards, specifications and metadata. National Land Service. https://www.geoportal.lt/geoportal/web/geographic-information-training/gii-03
Components of Geographic Information Infrastructure. National Land Service. https://www.geoportal.lt/geoportal/web/geographic-information-training/gii-08

Consulting lecturers name, surname	Degree	The most important works in the field of science (branch) have been published during the last 5 years
Giedrė Beconytė	dr.	**Beconytė G.**, Vasiliauskas D., Govorov M. 2020. Lietuvos policijos 2015–2019 m. registruotų įvykių erdvinė sklaida ir dinamika. Filosofija. Sociologija. 2020. 31(2), 175–185. **Beconytė G.**, Budrevičius J.D., Ciparytė I., Balčiūnas A. 2019. Plants and animals in the oikonyms of Lithuania, Journal of Maps, 15(2), 726-732. Govorov M., **Beconytė G.**, Gienko G. 2019. Spatially Constrained Regionalization with Multilayer Perceptron. Transactions in GIS. 2019;00,1–30. **Beconytė G.**, Snežko J., Balčiūnas A., Vidugirytė-Pakerienė I. 2019. Enhanced conceptual model for spatial references in works of fiction: mapping Vilnius literature. The Cartographic Journal. Vasiliauskas D., **Beconytė G**. 2016. Cartography of crime: portrait of metropolitan Vilnius. Journal of Maps, 12(5), 1236–1241.

Approved by the Doctoral Committee for Physical Geography (N006) on 9th of March 2021, protocol no. (4.20 E)

610000-KT-24.

Committee Chairman assoc. prof. dr. D. Pupienis