

COURSE OF DOCTORAL STUDIES

Course title	Field of science (branch) code	University / Faculty	Institute / Department
Methodology of special mapping	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	10	Consultations	
Course annotation			
<p>Marine navigational charts. Functions of navigation maps, their classifications, requirements for navigation maps. Development of navigational maps. Modern charts. Electronic navigational charts. Contents of marine navigational charts. Mapping methods and accuracy of charts. Methods of phenomena mapping and charts accuracy. Methods of process mapping and charts accuracy. Inscription on charts. Navigational information on charts. Information of location. Authorities organizing and controlling maritime navigation. Navigational atlases. The most important sets of charts.</p> <p>Aeronautical charts. Contents of aeronautical charts. Mathematical basis. Mapping objects, phenomena and processes. Mapping methods and accuracy of charts. Methods of phenomena mapping and charts accuracy. Methods of process mapping and charts accuracy. Navigational information on aeronautical charts. Visual flights and visual flight charts. Instrument flight charts. Types of aeronautical charts. Electronic charts in aircraft. The most important sets of aeronautical charts.</p> <p>Space imagery maps. Properties and applications of space imagery. Methods of space mapping. Space navigation systems. Radio navigation systems. Radar navigation and control systems. Global Navigation Satellite System (GNSS) and its variants.</p> <p>Engineering network maps. Features of engineering network maps. Classification of engineering communications. Requirements for the establishment and renewal of engineering networks. Scaling of engineering network plans. Dimensions and inscriptions presentation in engineering plans. Stages of engineering network planning.</p> <p>Maps of delimitation and demarcation of the state border. Map content. Image presentation methods. Delimitation and demarcation of the state border maps updating.</p> <p>Tactile maps. The problem of blindness. Problems of blind perception of space. Tactile space scaling problem. General geographic tactile maps. Thematic tactile maps. Ways and forms of spatial image presentation.</p>			
Required readings			
Sherrill C.O. 2019. <i>Military Map Reading</i> . 78 p.			
Stein J., Graham Ch. R. 2014. <i>Essentials for Blended Learning: A Standards-Based Guide</i> . Routledge. Taylor & Francis Group.			
Dziuban Ch.D., Picciano G., Graham Ch. R. 2015. <i>Conducting Research in Online Learning and Blended Learning Environments</i> . Routledge. Taylor & Francis Group.			
Aerospace Navigation Systems. 2016. Eds.: Alexander V. Nebylov and Joseph Watson. Wiley. 392 p.			
Calder N. 2012. <i>How to Read a Nautical Chart</i> . 2nd Edition. McGraw-Hill Professional. 272 p.			
Consulting lecturers name, surname	Degree	The most important works in the field of science (branch) have been published during the last 5 years	
Algimantas Česnulevičius	dr. habil.	<p>Morkūnaitė R., Bautrėnas A., Česnulevičius A., 2017. The recent investigations and providences about active aeolian forms in Curonian Spit (Lithuania). <i>Acta Geographica Silesiana</i>. 11(1), 23- 29.</p> <p>Łabuz T.A., Grunewald R., Bobykina V., Chubarenko B., Česnulevičius A., Bautrėnas A., Morkūnaitė R., Tõnisson H., 2018. Coastal dunes of the Baltic Sea shores: a review. <i>Quaestiones Geographicae</i>, 37(1). 47–71.</p> <p>Morkūnaitė R., Bautrėnas A., Česnulevičius A., Dobrotin N., Baubinienė A., Jankauskaitė M., Kalesnikas A., Mačiulevičiūtė-Turlienė, N. 2018. Changes in quantitative parameters of active wind dunes on the south-east Baltic Sea coast during the last decade (Curonian Spit, Lithuania). <i>Geological Quarterly</i>, 62(1), 38–47.</p>	

		<p>Česnulevičius A., Baurėnas A., Bevainis L., Ovodas D., Papšys K. 2018. Applicability of Unmanned Aerial Vehicles in Research on Aeolian Processes. <i>Pure and Applied Geophysics</i>, 175, 3179–3191.</p> <p>Česnulevičius A., Baurėnas A., Bevainis L., Mačiulevičiūtė-Turlienė, N. 2019. Comparison of Accuracy of UAV Aerials and Ground Measurements in the Curonian Spit Dunes. <i>Baltic Journal of Modern Computing</i>, 7(4), 571-585</p> <p>Česnulevičius A., Baurėnas A., Bevainis L., Ovodas D. 2019. A Comparison of the Influence of Vegetation Cover on the Precision of an UAV 3D Model and Ground Measurement Data for Archaeological Investigations: A Case Study of the Lepelionys Mound, Middle Lithuania. <i>Sensors</i>, 19(23), 5303.</p>
Artūras Baurėnas	dr.	<p>Morkūnaitė R., Baurėnas A., Česnulevičius A., 2017. The recent investigations and providences about active aeolian forms in Curonian Spit (Lithuania). <i>Acta Geographica Silesiana</i>. 11(1), 23- 29.</p> <p>Łabuz T.A., Grunewald R., Bobykina V., Chubarenko B., Česnulevičius A., Baurėnas A., Morkūnaitė R., Tõnisson H., 2018. Coastal dunes of the Baltic Sea shores: a review. <i>Quaestiones Geographicae</i>, 37(1). 47–71.</p> <p>Morkūnaitė R., Baurėnas A., Česnulevičius A., Dobrotin N., Baubiniene A., Jankauskaitė M., Kalesnikas A., Mačiulevičiūtė-Turlienė, N. 2018. Changes in quantitative parameters of active wind dunes on the south-east Baltic Sea coast during the last decade (Curonian Spit, Lithuania). <i>Geological Quarterly</i>, 62(1), 38–47,</p> <p>Česnulevičius A., Baurėnas A., Bevainis L., Ovodas D., Papšys K. 2018. Applicability of Unmanned Aerial Vehicles in Research on Aeolian Processes. <i>Pure and Applied Geophysics</i>, 175, 3179–3191.</p> <p>Česnulevičius A., Baurėnas A., Bevainis L., Mačiulevičiūtė-Turlienė, N. 2019. Comparison of Accuracy of UAV Aerials and Ground Measurements in the Curonian Spit Dunes. <i>Baltic Journal of Modern Computing</i>, 7(4), 571-585</p> <p>Česnulevičius A., Baurėnas A., Bevainis L., Ovodas D. 2019. A Comparison of the Influence of Vegetation Cover on the Precision of an UAV 3D Model and Ground Measurement Data for Archaeological Investigations: A Case Study of the Lepelionys Mound, Middle Lithuania. <i>Sensors</i>, 19(23), 5303.</p>
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		