COURSE DESCRIPTION CARD

<table>
<tr><td colspan="10">Faculty of Civil Engineering and Environmental Sciences</td></tr>
<tr><td colspan="3">Field of study</td><td colspan="4"></td><td>Degree level and programme type</td><td colspan="2"></td></tr>
<tr><td colspan="3">Specialization/ diploma path</td><td colspan="4"></td><td>Study profile</td><td colspan="2">Academic profile</td></tr>
<tr><td colspan="3" rowspan="2">Course name</td><td colspan="4" rowspan="2">Thematic cartography</td><td>Course code</td><td colspan="2">IS-FCEE-00149-1S</td></tr>
<tr><td>Course type</td><td colspan="2">Erasmus</td></tr>
<tr><td colspan="3" rowspan="2">Forms and number of hours of tuition</td><td>L</td><td>C</td><td>LC</td><td>P</td><td>SW</td><td>FW</td><td>S</td><td>Semester</td><td colspan="2">Summer</td></tr>
<tr><td></td><td></td><td></td><td>15</td><td></td><td></td><td></td><td>No. of ECTS credits</td><td colspan="2">2</td></tr>
<tr><td colspan="3">Entry requirements</td><td colspan="7">Basic knowledge of information technology; basis of Geographic Information Systems and geodesy is greatly appreciated</td></tr>
<tr><td colspan="3">Course objectives</td><td colspan="7">This course provides an introduction to thematic cartography and mapmaking. The class will focus on teaching through practical examples. The main objectives for the course are mapping techniques, through which both qualitative and quantitative data can be analyzed and accurately represented on the map. This course will introduce students to the basic principles of cartography, as well as new IT methods for visualizing and analyzing spatial data. The methods of obtaining data for cartographic studies will also be discussed.</td></tr>
<tr><td colspan="3">Course content</td><td colspan="7">• Introduction to cartography - coordinate systems, scale, legend, symbols, diagrams, and other marginalia information.
• The map design process and the elements of map composition – introduction to the software and mapping techniques.
• Principles for color thematic maps - chorochromatic and choropleth maps.
• The cartogram and cartodiagram.
• Methods of interpolation of data points.
• Methods for presenting of the relief and altitude data – Digital Terrain Model and Digital Surface Model and normalized Digital Surface Model. Hypsometry, contour, slope models and terrain profile.
• Methods for gathering spatial data (including direct field mapping and remote sensing methods).</td></tr>
<tr><td colspan="3">Teaching methods</td><td colspan="7">This course includes 8 classes taking two teaching hours each, including an introductory lecture and lab components for each class meeting.</td></tr>
<tr><td colspan="3">Assessment method</td><td colspan="7">ERASMUS students are expected to design, research, and complete a final project (a map containing thematic mapping applications) by the end of the semester.</td></tr>
<tr><td colspan="3">Symbol of learning outcome</td><td colspan="5">Learning outcomes</td><td colspan="2">Reference to the learning outcomes for the field of study</td></tr>
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LO1	knows the concepts of the subject, classifies the methods of cartographic presentation	K_GP1_W04
LO2	can choose the appropriate method to present the research problem in cartographic form	K_GP1_U07 K_GP1_U08
LO3	can effectively select data sources to solve cartographic problems, provides principles for data collection	K_GP1_U07 K_GP1_U08
LO4	strengthens the skills of map perception and reading cartographic content	K_GP1_U07 K_GP1_U08
LO5		
LO6		

Symbol of learning outcome	**Methods of assessing the learning outcomes**	**Type of tuition during which the outcome is assessed**
LO1	assessment of work on a practical project	P
LO2	assessment of work on a practical project	P
LO3	assessment of work on a practical project	P
LO4	assessment of work on a practical project	P
LO5		
LO6		

Student workload (in hours)		**No. of hours**
Calculation	Participation in computer classes	15
	Preparation for the workshop	10
	Participation in consultations related to a project	6
	Implementation of project tasks (including preparation of a final project)	20
	TOTAL:	51

Quantitative indicators	**HOURS**	**No. of ECTS credits**
Student workload – activities that require direct teacher participation	21	1
Student workload – practical activities	42	2

Basic references	1. Cartography: visualization of spatial data. Menno-Jan Kraak, Ferjan Ormeling, 1996. 2. Geographical information systems: principles, techniques, management, and applications. Paul A Longley (ed.), 2005.
Supplementary references	1. Spatial analysis: modeling in a GIS environment. Paul A Longley; Michael Batty (ed.), 1996. 2. QGIS User Guide. https://www.qgis.org, 2019.

Organisational unit conducting the course	**Department of Agri-Food Engineering and Environmental Management**	**Date of issuing the programme**
Author of the programme	**Andrzej Kamocki, PhD Eng.**	**Feb. 29, 2020**

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work, S – seminar