

UNIVERSITY OF ŽILINA
Faculty of Management Science and Informatics

Geographic Information Systems – course structure (online or on-site)

Lectures:

1. OpenStreetMap
2. Introduction to geomatics (geoinformatics) and GIS. Data formats used in GIS
3. Coordinate systems. Cartographic projections. Position.
4. Cartography. Map - symbols, visualisation. Geodata - sources.
5. Vector data models in GIS
6. Postgresql, PostGIS - examples
7. Global navigation satellite systems
8. Spatial analysis (vector layers, raster layers) - including multicriterial analysis
9. Mapping, remote sensing
10. Vectorisation and rasterisation
11. Complex statistic functions. Prognostics. Analysis of changes in time and space.
12. webGIS

100 minutes per lecture

Exercises:

1. QGIS basic skills - vector layers, select (from a map, from an attribute table, spatial)
2. QGIS - vector layers - data formats - data export - geopackage - layer properties (styles)
3. QGIS - vector layers - advanced styles, labels, map outputs (printouts)
4. QGIS - vector layers - new layer (point, line, polygon) - calculation of attributes (coordinates, length, area); raster layer - world file (georeferencing)
5. Test 1 - Vector layers in QGIS
6. QGIS - vector layers - Geoprocessing (clip, buffer, intersection, dissolve); table join
7. QGIS - raster layers - introduction - DEM, raster terrain analysis - raster calculator
8. QGIS - Multicriterial analysis - new site location (raster layers)
9. QGIS - Rasterisation
10. Test 2 - Raster layers - multicriterial analysis
11. QGIS - network analysis
12. webGIS - geoserver, web map

duration of Test 1 and Test 2 is shorter than 1 hour - additional activity - one participation in the Missing Maps Mapathon

100 minutes per exercise

additionally - semester project

For more information and application for the course, please contact professor Peter Marton on the following mail: Peter.Marton@fri.uniza.sk.

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