

**PhD Program:** Cartography and thematic mapping

**Professional Branch:** 4.4 "Earth Sciences"

**Scientific specialty:** Cartography (including thematic geographical mapping)

**Faculty:** Mathematics and Natural Sciences

**Department:** Geography, Ecology and Environmental Protection

**Brief Annotation:**

The training in the PhD program in the professional field "Earth Sciences" is associated with a detailed mapping investigation on current problem from the field of geography, ecology and environmental protection.

Due to the increasing role of the information in digital form and the objective need for exchange of it the use of the new technologies has been firmly imposed, including the GIS technology which is widely used by different specialists in every area of life. However GIS technology has entered the long-established tradition in the cartography. The utilization of the mapping methods for research and analysis in the digital environment is the main focus of this PhD work.

**Competences of PhD students completed this program:**

The PhD students who complete this program are trained specialists highly skilled not only in the professional field "Earth Sciences" but also in the field of scientific research and in the scientific - educational work in the universities.

The PhD students who have successfully defended their thesis can carry out independent research or participate in the working group of the research team on research projects can carry out expert activities, can participate in the work of scientific Councils, seminars, conferences and more.

**Curriculum:**

The PhD students' program is based on an individual curriculum, approved by the Faculty Council which is developed according to the topic of PhD dissertation. The assessment is made by an exam on the basis of six-grade system.

**Sample list of courses**

Considering the nature of the PhD program in the educational activity of the individual curriculum the following subjects are included:

- Spatial and statistical analysis with GIS;
- 3D cartographic modeling;
- Application of GIS for mapping of land cover and land use (LULC)
- Analysis of soil resources with GIS
- Geological and geomorphologic 3D modeling.

In the individual curriculum of a PhD student are included several courses. Among these courses are dissertations from the sample list of courses proposed and approved by the graduate advisor, the Department Council of Department of Geography, Ecology and Environmental protection and the Faculty Council of Faculty of Mathematics and Natural Sciences as well as Foreign Language.

**Graduation:**

- Exams on topics covering the Individual Curriculum
- Defence of a PhD thesis