

EARTH SCIENCES, PhD

Head: Prof. Péter Csorba

Email: csorba.peter@science.unideb.hu

Available PhD Programs in the field of Earth Sciences:

- Landscape protection and climate
- Natural and anthropogenous processes of lithosphere and hydrosphere
- Human geography – regional development

Length of the program: 6 semesters The following items will be considered during the admission process:

	MSc. degree gained in Hungary	MSc. degree gained abroad
Quality of the Diploma	(max. 30 pts)	
Previous scientific activity (research record, etc)	(max. 30 pts)	(max. 45 pts)
Proficiency in Earth Sciences	(max. 40 pts)	(max. 55 pts)

Successful applicants should reach a minimum of 10 points in each of the items above and should reach a minimum of 60 points total.

For further information, please contact the secretary of the program: Dr. György Szabó
e-mail: szabo.gyorgy@science.unideb.hu.

For admission enquiries please check <http://englishstudies.sci.unideb.hu>

LANDSCAPE PROTECTION AND CLIMATE PROGRAM

Program coordinator/leader: Dr. Péter Csorba, PhD, DSc

The doctoral program focuses on the close connection between landscape and climate research. The general aims of the program to extent the scientific basis of the landscape research and to widen the basis and applied researches related to this. The scientists of the Department of Landscape Protection and Environmental Geography and the Department of the Meteorology work together in this program. The Sustainable Energetics subprogram deals with the study of the connection between the natural and the built-up environment.

The main directions of the geographical, landscape protectional and climatological researches are determined by the antropogen effects on the natural environment and the question of the environmental friendly utilization of the land potential. The renewable energy sources are parts of that potential. The investigations of the amount and the possible utilization of the solar and wind energy are also a part of this doctoral program.

The main subjects of the landscape research:

- Investigation of processes in the landscape (erosion, water regime of the soils and sediments, interactions in the soil-plant system).
- To study the landscape structure and the landuse.
- Investigation of the environmental pollution.
- To study the geographical aspects of the waste management.
- To study the environmental effects of tourism.

The main subjects of the climatological research:

- Landscape climatology
- Climate change
- Renewable energy sources
- Urban climate

The main subjects of the Sustainable Energetics subprogram:

- The possible reduction of the energy consumption of buildings.
- Energy supply of settlements by environmental friendly sources.
- Reducing the pressure on the environment.
- Development of innovative and complex solutions in the building engineering.
- Elaboration of new hierarchical systems besides the life cycle analysis in the field of building energetics.

**„NATURAL AND ANTHROPOGENOUS PROCESSES OF
LITOSPHERE AND HYDROSPHERE” PROGRAM**

Program coordinator/leader: Dr. József Lóki, PhD, DSc

General aims of the program:

Our aim is to preserve the intellectual heritage of the outstanding researchers and to support the application of recent research trends and methods in the departments of the University of Debrecen, namely the Department of Mineralogy and Geology and the Department of Physical Geography and Geoinformation Systems.

Aims of geological research:

- Modelling long-term and short-term processes, exploration of development trends, value protection and risks prevention regarding our planet and environment.
- It is a basic task to apply and integrate the results achieved in plate tectonics, palaeoecology, geochemistry, geothermics and environmental geology into education.
- Application of recent methods of informatics and geoinformatics.
- Support and maintenance of cooperations within the institute and even in international or domestic scales.

Aims of geomorphological research:

- The exploration of natural hazards and protection possibilities.
- Investigations and deeper explorations of spatial processes and relations between nature and society.
- Evaluation of positive/negative outcomes of natural/social forming processes, revealing feedback mechanisms, creation of process-based models.
- In addition to the detailed genetic and qualitative mapping of the surface, the exact quantitative measurements of the processes and landforms as facilities. Cooperation with the engineering sciences in applied geomorphology.

Aims of research in GIS:

- The GIS-based processing of datasets derived from the geological, geomorphological researches in respect of the utilization objectives.
- The application and development of GIS-models in the research areas related to our doctoral program.
- The possibilities of remote sensing in the geological, geomorphological, hydrological and hydrogeographical researches.
- The development of GIS-methods, accuracy assessment of measurements, datasets and methods.

HUMAN GEOGRAPHY – REGIONAL DEVELOPMENT

Program coordinator/leader: Dr. Gábor Kozma, PhD

Overall objective of the programme

Structuring a research to meet the new challenges of human geography while maintaining the valuable experience gained at the Department of Social geography. Continuing and improving the research activities of the modern regional development by means of continually monitoring the new research methods. The primary target area of the research is Northeast Hungary; nevertheless, we shall endeavour to incorporate the analyses into the Hungarian and European processes.

Priority research areas

Social geography

- Analysis of the changes in the internal structure of the settlements;
- Research into the most important characteristics of the economic conversion;
- Study of the situation and development opportunities of the Carpathian Euroregion;
- Interethnic researches in the northeastern part of the Carpathian Basin;
- Euroregions as the most successful actors in international cooperations;
- Conversion of the rural areas in the northeastern regions of the Carpathian Basin;
- International migration and minorities;
- New trends in political geography, geopolitical study of Central Europe;
- Electoral geography of the Northeast Hungarian region;
- Characteristics of the external economic situation in the East Central European countries.

Regional and urban policy

- Employment policy issues in Hajdú-Bihar county;
- Study of the marketing policy of the local governments in Northeast Hungary;
- Budgetary management of the local authorities;
- Researches substantiating regional and urban development actions in Eastern Hungary;
- The most important experiences of the use of grants for regional and urban development;
- The situation of human resources in Eastern and Northeastern Hungary.