

Tárgy neve: Automatizing spatial analysis

Tárgyfelelős neve: Szalkai Gábor

Tárgyfelelős tudományos fokozata: PhD

Tárgyfelelős MAB szerinti akkreditációs státusza: AT

Az oktatás célja:

a) knowledge:

- Complex knowledge of the general geographical, cartographic, planning, mathematical and informatic principles, rules, relationships required for the practice of geoinformatics, especially in the following topics: geographical and spatial data collection at various scales; use of cartographic processes; knowledge of geographical and spatial processes; collection, editing and analysis of spatial data; remote sensing, photogrammetry, geostatistics, modelling, visualization, and geoinformatics system building

- Knowledge of the current theories, models and literature of geoinformatics based on scientific results.

He/she is aware of the possible development directions and limits of the field of geoinformatics.

- Comprehensive knowledge and understanding of the key relationships and concepts in the field of geoinformatics, in particular in the following areas: geolocation data collection technologies, 2- and 3-dimensional geoinformatics modelling, geovisualization, spatial data infrastructures, geoinformatics programming and application development, vector and raster geoinformatics, digital image processing, web-based geoinformatics solutions, geoinformatics databases, applied geoinformatics systems.

b, abilities

- Ability to interpret geographical/spatial phenomena, processes and information, and to plan, organize, manage and control processes in the field of geoinformatics.

- Ability to interpret complex professional problems in the field of geoinformatics, to explore the necessary theoretical and practical background and to solve problems.

- Ability to collect data independently and organize spatial data into a database, as well as to organize the data with the tools of geoinformatics. Ability to perform operations and models with independently organized databases.

c, attitude

- Committed to environmentally conscious behaviour in his/her field and laboratory activities.

- Monitors professional and technological developments in the field of geoinformatics and the labour market trends.

- Committed to adhering to and making others adhere to quality requirements.

- Shares his/her knowledge, considers it important to communicate the results of geoinformatics.

d, autonomy and responsibility

- Independence regarding the thorough examination and elaboration of professional issues and processes.

Az oktatás tartalma: The aim of the course is to learn how to use the VBA interface and programming language behind Excel so that the student will be able to automate the transformation of data tables in spatial analysis and to easily perform tasks that are difficult to perform in the normal menu system.

A számonkérés és értékelés rendszere: practical course mark based on course work.

Kötelező irodalom:

- Steven Roman: Writing Excel Macros with VBA, 2nd Edition, O'Reilly 2002 ISBN: 9780596003593
- https://www.tutorialspoint.com/vba/vba_quick_guide.htm
- <https://docs.microsoft.com/en-us/office/vba/api/overview/>

Ajánlott irodalom:

- Automating GIS-processes, <https://automating-gis-processes.github.io/site/>
- Bill Jelen, Tracy Syrstad: Microsoft Excel 2019 VBA and Macros, 2018, Book 978-1-5093-0611-4
- Michael Alexander, John Walkenbach: Excel VBA Programming for Dummies, 2018, ISBN 1119077397