

Tárgy neve: Dedicated Geospatial Information Systems

Tárgyfelelős neve: Dr. Jung András

Tárgyfelelős tudományos fokozata: PhD

Tárgyfelelős MAB szerinti akkreditációs státusza: AT

Az oktatás célja:

a, knowledge

- Comprehensive knowledge of the problem-solving principles, methodology and processes of the planning, development and operation processes of the geoinformatics field, especially in the following areas: database management, Big Data data-mining, primary and secondary data collection, Earth observation, spatial and temporal data analysis, modelling and simulation of processes, network analysis, 3-dimensional modelling, geovisualization, geostatistical solutions, web-based geoinformatics services, spatial services development, geoinformatics programming, development of geospatial applications, open-source geoinformatics.

- Knowledge of the specific tools of geoinformatics, ability to apply field survey procedures, data management and analysis, and visualization solutions. Knowledge and use of spatial data collection technologies, available databases and spatial information software, as well as open-source and commercial geoinformatics software, cloud-based geoinformatics solutions.

- Understandings, knowledge and application of mobile field, laboratory and practical materials, tools and methods of geoinformatics.

b, abilities

- Ability to creatively and methodically process, evaluate, interpret and analyse measurement results and draw conclusions from them.

- 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.

- Ability to recognize and apply new problem-solving methods and procedures in his/her field and apply what he/she has learnt in a diverse, multidisciplinary environment.

c, attitude

- Accepts and adheres to the ethical principles of work and organizational culture, especially with regard to the copyright related to geoinformatics.

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

d, autonomy and responsibility

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

- Feels responsible for meeting and making others meet the deadlines. He/she is responsible for his/her work and for his/her co-workers' work in projects.

- With his/her knowledge and skills of geoinformatics, he/she cooperates responsibly with professionals in other fields.

Az oktatás tartalma: This course introduces how geospatial information system applications serve the public or community's interest and needs. Special attention will be paid to environmental or urban geospatial information systems. Furthermore, geospatial information systems will be discussed for the health sector, land use and -design process, telecommunication, transport, resource management, supply networks and -chains. Business-related applications will be presented as well, such as geomarketing, LBS and mobile LBS with community interest. A general overview will be given about domestic and international tendencies, visions and forecasts, development practices and theories, while considering human resources and the labour market perspectives. After completing the course, the students will be able to classify, select or evaluate geospatial information systems to make better geospatial decisions.

A számonkérés és értékelés rendszere: oral and/or written exam.

Kötelező irodalom:

- Tian, B. (2016). GIS technology applications in environmental and earth sciences. CRC Press, ISBN 9781498776042

- Vieux, Baxter E. (2016). Distributed hydrologic modeling using GIS. Springer, ISBN 978-94-015-9710-4
- De Smith, M. J., Goodchild, M. F., & Longley, P. (2007). Geospatial analysis: a comprehensive guide to principles, techniques and software tools. Troubador publishing ltd., ISBN 13 978-1-912556-05-2

Ajánlott irodalom:

- Heritage, S. N. (2018). EcoServ-GIS v. 3.3: A toolkit for mapping ecosystem services (GB scale).
- Rai, P. K., and Nathawat, M. S. (2017). Geoinformatics in Health Facility Analysis. Springer, ISBN 978-3-319-44624-0
- Estaville, Lawrence E. (2012). Geospatial workforce trends in the United States. In Geospatial Technologies and Advancing Geographic Decision Making: Issues and Trends, pp. 82-89. IGI Global, ISBN 9781466602588