

## Tárgy neve: Geoinformatics

Tárgyfelelős neve: Dr. Albert Gáspár

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

- 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

- Comprehensive knowledge of the problem-solving principles, methodology and processes of the planning, development and operation processes of the geoinformatics field

b, abilities

- 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 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.

- Ability to use the professional vocabulary of geoinformatics in his/her mother tongue and English.

c, attitude

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

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

- 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: The aim of the course is to overview the most commonly used concepts in the application of GIS and to explain their context. The topics covered during the semester are: vector and raster data systems; topologies and types of geodatabases and an overview of the OGC standard; dimensions and attributes; the relationship between databases and visualisation and geoinformatics modelling; geoinformatics in society, data communication; interpretation of geoinformatics data (principal component analysis, BigData, machine learning, etc.).

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

Kötelező irodalom:

- Kemp, K. (Ed.). (2008). Encyclopedia of geographic information science. Sage. ISBN 978-1-4129-1313-3
- Lemmens, M. (2011). Geo-information: technologies, applications and the environment (Vol. 5). Springer Science & Business Media. ISBN 978-94-007-1666-7

Ajánlott irodalom:

- Karimi, H. A. (Ed.). (2014). Big Data: techniques and technologies in geoinformatics. Crc Press.
- Egenhofer, M. J., Clarke, K. C., Gao, S., Quesnot, T., Franklin, W. R., Yuan, M., & Coleman, D. (2016). Contributions of GIScience over the past twenty years. Advancing geographic information science: The past and the next twenty years, 9-34