

Tárgy neve: Satellite Remote Sensing P

Tárgyfelelős neve: Dr. Mari László

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

- 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 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 design value-added services, especially concerning Earth observation.

c, attitude

- 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.

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

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: Visual interpretation of optical band remote sensing satellites images (LANDSAT, SPOT, IRS, Sentinel, etc.). Computer aided image interpretation. Image interpretation of super high resolution satellites (IKONOS, QuickBird, WorldView, etc.). Image transformation. Re-sampling methods. Image correction procedures. Basic image enhancement techniques. Convolution filters. Index calculations, vegetation indices. Types of classification, clustering, supervised classification.

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

Kötelező irodalom:

- William Emery and Adriano Camps: Introduction to Satellite Remote Sensing: Atmosphere, Ocean, Land and Cryosphere Applications; 860p., Elsevier Inc., 2017, ISBN 9780128092545
- Emilio Chuvieco: Fundamentals of Satellite Remote Sensing: An Environmental Approach (3rd Edition) 598 p. CRC Press, 2010 ISBN: 9781138583832

Ajánlott irodalom:

- Nicolas Baghdadi and Mehrez Zribi (ed.) Land Surface Remote Sensing in Urban and Coastal Areas 350 p., Elsevier Inc., 2017, ISBN 9781785481604

- Fu W., Ma J., Chen P., Chen F. (2020) Remote Sensing Satellites for Digital Earth. In: Guo H., Goodchild M.F., Annoni A. (eds) Manual of Digital Earth. Springer, Singapore.
https://doi.org/10.1007/978-981-32-9915-3_3