

Tárgy neve: Satellite Remote Sensing L

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: Types of optical band remote sensing satellites (LANDSAT, SPOT, IRS, Sentinel, etc.). CORINE landcover databases and applications. The European *Copernicus* Program. Image interpretation of super high resolution satellites (IKONOS, QuickBird, WorldView, etc.). The concept of digital image processing. Digital image processing tools. Multispectral images. Hyperspectral images. Theoretical bases of image classification.

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

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