Tárgytematika / Course Description

GIS and remote sensing

N_DMA06

Tárgyfelelős neve / Teacher's name: dr. Milics Gábor

Félév / Semester: 2023/24/1

Beszámolási forma / Assesment: Vizsga

Tárgy heti óraszáma / Teaching hours(week): 0/0/0

Tárgy féléves óraszáma / Teaching hours(sem.): 30/0/0

OKTATÁS CÉLJA / AIM OF THE COURSE

The aim of the course is to introduce Geographical Information Science and Remote Sensing to the students. During the contact hours student have to learn to view data and information in a spatial context. General GIS and specific Agro-GIS software are introduced. Practical exercises on data collection, data storage and analysis will be carried out during the semester. Due to the study program students will be able to produce digital maps, and analyse data, which have spatial relations in agriculture. During the program remote sensing platforms and sensor technology is also introduced including satellite and airborne technologies. The leading RS platforms such as UAV technology and compatible sensors are also introduced to the students. The aim of the course is to teach students how to be part of the decision making cycle, as well as interpret spatial data and understand the decision making process.

TANTÁRGY TARTALMA / DESCRIPTION

1. Development of GIS, raster and vector based systems, hybrid GIS systems.
2. Basics of digital mapping, requirements for digital maps, thematic map creation.
3. Creation and development of digital databases on-line GIS.
4. ArcGIS.
5. Coordinate transformations, georeferencing.
6. Creating AgGIS databases.
7. Geostatistics, outlier detection and filtering, interpolation methods.
8. Interpretation of digital map.
9. Basics of remote sensing.
10. RS systems, satellite, airborne and UAVs.
11. Sensors in RS.
12. Application of RS based data in agriculture.

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

Meeting the conditions set by the supervisor.

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

Paul A. Longley, David J. Maguire, Michael F. Goodchild, Michael Goodchild, David Maguire, David Rhind (2005): Geographic Information Systems and Science, John Wiley & Sons, 2nd Edition, 517 pp. (ISBN13: 9780470870013)

Stanley Aronoff (2005): Remote Sensing for GIS managers, (ISBN-13:978-1589480810)

Digitally available literature:
http://www.itc.nl/library/papers_2009/general/PrinciplesGIS.pdf
http://fac.ksu.edu.sa/sites/default/files/gis_cartography.pdf