

Name of the subject: Advanced methods of geographic data acquisition, processing and visualization		
Lecturer(s): Minučer Mesaroš		
Status of the subject: obligatory		
Number of ECTS points: 5		
Condition: -		
Goal of the subject Adoption of advanced methods of using GIS in the process of collecting, processing, classifying, searching, and visualizing geospatial data.		
Outcome of the subject Upon completion of the course, the student distinguishes and recognizes the methods and functions used for the analysis of geospatial data at all stages of data handling, from collection through processing to data display. Describes and applies automatic data processing. Uses acquired knowledge to solve complex problem situations using geospatial analysis.		
Content of the subject <i>Theoretical instruction</i> Advanced methods of processing products obtained through remote sensing, automated image processing, neural networks, object-oriented approach. Techniques of automated digitization, object recognition. Generating 3D terrain models from stereoscopic images. Examples of models of natural phenomena and complex systems in a GIS environment. <i>Practical instruction</i> Automatic and semi-automatic analysis of images, advanced methods of analyzing digital relief models, techniques of precise field surveying, use of unmanned aerial vehicles.		
Recommended literature 1. Burrough, P., McDonnell, R. (2006) Principi geografskih informacionih sistema. Građevinski fakultet, Beograd. 2. Shekhar, S., Xiong, H.(Eds.) (2008) Encyclopedia of GIS, Springer 3. Longley, P., Goodchild, M., Maguire, D., Rhind, D. (2010), Geographic Information Systems and Science (third edition), John Wiley & Sons.		
Number of active classes	Theory:2	Practice:2
Methods of delivering lectures Lectures, individual consultations, assignment project		
Evaluation of knowledge (maximum number of points 100) Assignment project 50 pts Oral exam 50 pts		