

Name of the subject: Geoinformatics		
Lecturer(s): Minučer Mesaroš		
Status of the subject: obligatory		
Number of ECTS points: 7		
Condition: -		
Goal of the subject Mastering the theoretical foundations and the most important practical problems of geoinformatics.		
Outcome of the subject Students are familiar with the basic problems of collecting, processing, analyzing, and graphically presenting geographic data for further independent work. They recognize inherent limitations and sources of errors in the data collection and processing methods, are able to define optimal methods of analysis, conclude and communicate the reliability of the obtained results. They recognize the importance of standardization and have the ability to independently follow, adopt, and apply new achievements in the field of geoinformatics.		
Content of the subject <i>Theoretical instruction</i> The concept of geoinformatics. Optimization of collecting, storing, transmitting, and presenting geospatial information. Data and information. Problems of observation, measurement, sampling, collection, and generalization of data on dynamic phenomena in the geosphere. Most commonly used spatial reference systems. The concept of models in geoinformatics. Advanced techniques for creating and processing vector and raster contents, selection of models and data processing methods. Geostatistical methods and interpolation. Problems of interoperability, standardization issues, the concept of spatial data infrastructure and metadata. Methods of automated information processing. Perspectives on the development of geoinformatics in the future. <i>Practical instruction</i> Work in the software packages ArcGIS Pro and Qgis, use of geospatial databases. Finding relevant data sources, working with metadata. Downloading and entering data into ArcGIS. Field measurement using RTK GNSS equipment.		
Recommended literature 1. Burrough, P. & McDonnell, R. 2006. Принципи географских информационних система, Грађевински факултет Универзитета у Београду (превод), Београд 2. Longley, P., Goodchild, M., Maguire, D., Rhind D., 2015., Geographical Information Systems and Science, Willey, USA		
Number of active classes	Theory:3	Practice:2
Methods of delivering lectures Lecturing, illustrative-demonstrative method (computer-based work), practical instruction.		
Evaluation of knowledge (maximum number of points 100) Assignment project 50 pts Oral exam 50 pts		