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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | **Control Systems** |
| Study Module (if applicable) | Computer Control Systems and Measurement Techniques |
| Course title | Geographic information systems |
| Level of study | [ ] Bachelor [x]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | 1 |
| Number of ECTS allocated | 4 |
| Name of lecturer/lecturers | Dragan Stojanović |
| Teaching mode |  [x] Lectures [x] Group tutorials [ ]  Individual tutorials [x] Laboratory work [x]  Project work [x]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Acquiring knowledge, methods and technologies required for design and implementation of geographic information systems (GIS). Theoretical and practical knowledge about principles, methods, software tools, components and frameworks for design and implementation of geographic information systems (GIS).* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Introduction to geographic information systems. Geographic and cartographic foundations of GIS. Positioning and GPS (Global Positioning System). Geospatial data models. Geospatial data representations and algorithms for processing. Index structures and access methods. Spatial databases. GIS architecture and design. Geovisualization and GIS interfaces. Geospatial data analysis. Time in GIS and spatio-temporal data management. OGC specification and standards. Web GIS and distributed GI services. Mobile GIS and location-based services.****Practical work on design and implementation of geographic information system using commercial and open source software components, frameworks and platforms. Spatial database design. Implementation of GIS functionalities for storage, processing, search and visualization geospatial and spatio-temporal data. Implementation of Web GIS and Web services based on OGC standards and specifications.** |
| **LANGUAGE OF INSTRUCTION** |
| [x] Serbian (complete course) [ ]  English (complete course) [ ]  Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)[x] Serbian with English mentoring [ ] Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** | **10** | **Written examination** | **40** |
| **Practical teaching** | **10** | **Oral examination** |  |
| **Teaching colloquia** | **40** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |