Subject code: *GIS-202-3*	**Subject name:** *Geoinformatics*		
Study cycle: *I*	**Year:** *II*	**Semester:** *III*	**ECTS credits:** *5*
Status: *Mandatory*		**Contact hours:** *60* *Lectures: 30* *Exercises: 30*	
Assigned professors and assistants:	*Teachers and associates who are selected for the teaching area to which the subject belongs*		
Prerequisits:	*/*		
Subject objectives:	*Basic subject goals are:* *- introduction and acquiring knowledge of collecting, preparation and geoinformatic modeling of geographical data;* *- introduction and acquiring knowledge of geoinformatics system, its structure and components;* *- introduction and acquiring knowledge of computer system hardware;* *- introduction and acquiring knowledge of characteristics i functions of systemic and application software;* *- introduction and acquiring knowledge of data geobases, their structure, organization and theirs application in modeling;* *- introduction and acquiring knowledge of geoinformatics organization of graphic data and concepts of their application in modeling;* *- introduction and acquiring knowledge of models of geoinformatic management of spatial contents for the purpose of regional and spatial planning;* *- -introduction and acquiring knowledge of the most famous digital models of Earth and its' individual regions and possibilities of theirs application in educational process in elementary schools and high schools;*		
Teaching units:	1. *Geoinformatics - concept, definitions, goals, tasks and object of studies. Geoinformatic data - concept, types, collection and organization.* 2. *Computer system and its components. History of computer development. Types of computers.* 3. *Computer system architecture. Hardware - term, structure and functioning of computers. BIOS system.* 4. *Hardware components. Internal hardware*		

	components. Output-input devices. Optional external devices. 5. *System software - concept, structure and application. Control software. Operating system - term, structure and application.* 6. *MS-DOS OS - main functions and user interface. OS Windows - main functions and user interface. OS LINUX. OSMAC.* 7. *First test.* 8. *Application software - concept, definitions and significance. Division of applicative software. MS Office. Corel Draw.* 9. *Geoinformatics software - concept, definitions and significance. Types of geoinformatics software. GIS - term, definitions and division.* 10. *Geoinformatics organization of geobases and their structure. Basic operation models with geobases.* 11. *Graphical geoinformatics data - concept, definitions and significance. Types of graphical geoinformatics data. Sources of graphical geoinformatics data. Raster graphical data - term, types and sources of raster data.* 12. *Vector graphical data - concept, definitions and significance. Structure and types of vector data. Sources of vector data.* 13. *Basic modules of geoinformatics software. Preparation of geographical data for geoinformatics processing.* 14. *Geoprocessing. Geovisualization. Sets of thematic data.* 15. *World computer networks. Internet sources of geoinformatics data. The most famous internet applications of digital models of the Earth and continents.*
Learning outcomes:	**Knowledge:** - *Student defines geoinformatics system, its structure and components.* - *Student describes the hardware of a computer system, and sorts and emphasizes characteristics and functions of systemic and applicative software for geographic data* **Skills** *:* - *Student geoinformatically organizes data geobases, connects theirs structure and organization* - *Student geoinformatically analyzes geographical*

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<tr><td></td><td>data and graphically depicts their applications in modeling;
Competencies:
- Student geoinformatically values geographical data of natural and social contents for the purpose of regional and spatial planning;
- Student geoinformatically values geographical data of the most famous digital models of the Earth and its individual regions and the possibilities of their application in regional and spatial planning;
- Student geoinformatically values geographical data of spatial and infrastructural resources and their potentials for the purpose of regional, spatial and urban planning.</td></tr>
<tr><td>Teaching methods:</td><td>Multimedia presentation and discussion (lectures); practical work, educational material analysis and discussion (exercises).</td></tr>
<tr><td>Knowledge testing methods with grading structure[1]:</td><td>
<table>
<tr><td></td><td>Points</td></tr>
<tr><td>Attendance</td><td>5</td></tr>
<tr><td>Participation on lectures</td><td>5</td></tr>
<tr><td>Tests</td><td>40</td></tr>
<tr><td>Seminar paper</td><td>10</td></tr>
<tr><td>Final exam</td><td>40</td></tr>
<tr><td>TOTAL</td><td>100</td></tr>
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Assessment:
<table>
<tr><td>Grade</td><td>ECTS grade</td><td>Points scale</td></tr>
<tr><td>10</td><td>(A) excellent</td><td>95 - 100</td></tr>
<tr><td>9</td><td>(B) very good</td><td>85 - 94</td></tr>
<tr><td>8</td><td>(C) good</td><td>75 - 84</td></tr>
<tr><td>7</td><td>(D) satisfactory</td><td>66 - 74</td></tr>
<tr><td>6</td><td>(E) sufficient</td><td>55 - 64</td></tr>
<tr><td>5</td><td>(F, FX) insufficient</td><td>55</td></tr>
</table>
</td></tr>
<tr><td>Literature[2]:</td><td>Mandatory:
– Đug S., Dreško vić, N., Odžak, S. (2015) Daljinska istraživanja–principi i primjena u prirodnim naukama. Univerzitetski udžbenik. Univerzitet u Sarajevu. Sarajevo.</td></tr>
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[1] The structure of points and point criteria for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught in accordance with Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

[2] The Senate of the higher education institution as an institution or a council of the organizational unit of the higher education institution as a public institution determines mandatory and recommended textbooks and manuals, as well as other recommended literature on the basis of which exams are prepared by a special act which is required to be published on its website before the beginning of the academic year in accordance with Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton.

	– *Burrough, P. A., McDonnel, R. A. (2006): Principi geoinformacionih Sistema–drugo izdanje. Oxford University Press. Prevod sa engleskog* – *Kvarternik, R. (1988): Uvod u operativne sisteme. Informator. Zagreb.* – *Rožić, N. (1996): Geoinformatika III. Rukopis. Zagreb* **Optional:** – *Kurtović – Numić, S. (2002): Informatika, Fojnica.* – *Vodič za računarske sisteme (2015)* – *Vodič za OS Windows (2015)* – *Vodič za Microsoft Office (2015)* – *Vodič za Corel Draw (2015)* – *Vodič za ESRI (2015)*