Subject code: GUO/205	**Subject name:** GIS in contemporary geographical science		
Study cycle: III	**Year:** I	**Semester:** II	**ECTS credits:** 10
Status: Optional		**Contact hours: 60** Lectures: 30 Exercises/seminar: 30	
Assigned professors and assistants:	Teachers and associates who are selected for the teaching area to which the subject belongs		
Prerequisits:	/		
Subject objectives:	– introducing students to the possibilities of applying GIS in modern geographical research, – concrete work with advanced GIS software tools for component and complex modern research of natural-geographical, socio-geographical and regional-geographical processes, – introducing students to the possibilities of applying different GIS models and tools in research of tourist potentials and environmental protection, – introducing students to the possibilities of creating different GIS spatial models by applying the given criteria and, in this regard, optimizing the use of spatial resourcesfor different areas and levels of regional and spatial planning.		
Teaching units:	1. Content, structure and methodological concept of GIS application in modern geographical research. 2. GIS applications - structure, organizational models, user levels. 3. GIS based geobases - concept, structure of their application in modern geographical research. 4. Theoretical and applied bases of application of advanced GIS models and methods in component and complex researches of natural geographical processes. 5. Theoretical and applied bases of application of advanced GIS models and methods in component and complex researches of sociogeographical processes. 6. Theoretical and applied bases of application of spatial GIS models and existing geobases of data in modern regional geographical researches. 7. Theoretical and applied bases of application of advanced GIS models and tools in research,		

	identification and valorization of natural geographicaltourism potential. 8. Theoretical and applied bases of application of advanced GIS models and tools in research, identification and valorization of socio-geographicaltourism potential. 9. Theoretical and applied bases of application of advanced GIS models and tools in modern geographical environmental research. 10. Application of GIS in geoecological modeling. 11. Theoretical bases of application of advanced GIS models and tools in regional spatial research and regional development. 12. Application of GIS in the development of regional spatial models and their practical valorization. 13. Theoretical and applied bases of application of advanced GIS models and tools in sectoral spatial planning research and thematic cartography. 14. 3D spatial modeling and its application in spatial planning. 15. Predictive GIS modeling of geographical processes.
Learning outcomes:	–
Teaching methods :	Multimedia presentation and discussion (lectures); practical work, educational material analysis and discussion (seminar/research project).
Knowledge testing methods with grading structure[1]:	**Knowledge assessment / criterion:** 1. Oral discourse: max 25 - min 14 points 2. Practical work: max 25 - min 14 points 3. Independent research work: max 50 - min 27 points Total 100 points, condition for passing: 55 points **Assessment:** *Grade* *ECTS grade* *Points scale* 10 (A) excellent 95 - 100 9 (B) very good 85 - 94 8 (C) good 75 - 84 7 (D) satisfactory 66 - 74 6 (E) sufficient 55 - 64 5 (F, FX) insufficient 55

[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

Literature [2]:	**Mandatory:** 1. Đug, S., Dreško vić, N., Odžak, S. (2015): Remote sensing - principles and applications in natural sciences. University textbook. Publisher: University of Sarajevo, Faculty of Science Sarajevo. ISBN 978-9958-592-62-1, COBISS. BH - ID 22089478. 2. Heywood, I., Cornelius, S., Carver, S. (2006) An Introduction to Geographical Information Systems. Pearson Education Limited. 3. Fortheringham, AS, Rogerson, PA (1994) Spatial Analysis and GIS. Technical Issues in Geographic Information Systems. Taylor and Francis. London. 4. ESRI (2009) ArcGIS 10. Using ArcGIS desktop. ESRI. Redlands. USA.

[2]The Senate of the higher education institution as an institution or the 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 it prepares and takes the exam. in accordance with Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton