



Subject code: RPP/120	Subject name: Applied Geospatial Modeling		
Study cycle: III	Year: I	Semester: I	ECTS credits: 6
Status: Mandatory		Contact hours: 60 Lectures: 30 Exercises: 30	
Assigned professors and assistants:	Lecturers and assistants selected for the field to which the course belongs		
Prerequisites:	/		
Subject objectives:	- Introducing students to and gaining knowledge about contemporary trends in geospatial content modeling using GIS. - Introducing students to and gaining knowledge about the possibilities of applying multi-criteria GIS analyses in geospatial content modeling.		
Teaching units:	1. Spatial Data Management, Analysis, and Modeling in GIS 2. Contemporary Trends in Geospatial Content Modeling: Applications and Contributions of GIS 3. Fundamental Components of Spatial Analysis 4. General Aspects of Data Collection and Modeling Using Entities 5. Error Propagation in Numerical Modeling 6. GIS Modeling Based on Multi-Criteria Analysis 7. Geospatial Modeling of Hydrological Phenomena and Processes 8. First Test 9. Geospatial Modeling of Climate Phenomena and Processes 10. Geospatial Modeling of Pedological Cover 11. Geospatial Modeling of Vegetation Cover 12. Geospatial Modeling of Environmental Elements 13. Geospatial Modeling for the Construction of Industrial Spatial Facilities 14. Geospatial Modeling of Transportation Systems 15. Designing Geodatabases: Case Studies in GIS Data Modeling		
Learning outcomes:	Knowledge: - Student describes the process of geospatial modeling. - Student describes the possibilities of applying geospatial		



	technologies in modeling spatial content. Skills: - Student applies spatial-analytical methods in the process of geospatial modeling. Competencies: - Student predicts and proposes the most optimal software tools to resolve identified spatial conflicts. - Student proposes optimal locations for placing geospatial content.																																				
Teaching methods:	Theoretical lectures and practical exercises for students using various multimedia tools and application software.																																				
Knowledge testing methods with grading structure¹:	<table><tr><td></td><td><i>Maximum Points</i></td><td><i>Minimum points</i></td></tr><tr><td>Oral Discourses:</td><td>25</td><td>14</td></tr><tr><td>Project Assignments:</td><td>25</td><td>14</td></tr><tr><td>Final exam</td><td>50</td><td>27</td></tr><tr><td>TOTAL</td><td>100</td><td>55</td></tr></table> Assessment: <table><tr><td><i>Grade</i></td><td><i>ECTS grade</i></td><td><i>Points scale</i></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>		<i>Maximum Points</i>	<i>Minimum points</i>	Oral Discourses:	25	14	Project Assignments:	25	14	Final exam	50	27	TOTAL	100	55	<i>Grade</i>	<i>ECTS grade</i>	<i>Points scale</i>	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
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Literature²:	Mandatory: 1. Burrough, P. A., McDonnel, R. A. (2006): Principi geoinformacionih Sistema–drugo izdanje. Oxford UniversityPress. Prevod sa engleskog jezika. 2. Đug S., Drešković, N., Odžak, S. (2015) Daljinska istraživanja–principi i primjena u prirodnim naukama. Univerzitetski udžbenik. Univerzitet u Sarajevu. Sarajevo. 3. Goodchild, M.F., 2005. GIS and modeling overview. GIS, spatial analysis, and modeling. ESRI Press, Redlands 4. Reddy, G.O., 2018. Spatial data management, analysis, and modeling in GIS: principles and applications. Geospatial Technologies in Land Resources Mapping, Monitoring and																																				

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.



UNIVERSITY OF SARAJEVO – FACULTY OF SCIENCE
SUBJECT DESCRIPTION

Form SP2

Page 3 of 3

Management, pp.127-142.

Recommended:

1. Fedra, K., 1993. GIS and environmental modeling. Environmental modeling with GIS, pp.35-50.
2. Murray, A.T., 2010. Advances in location modeling: GIS linkages and contributions. Journal of geographical systems, 12, pp.335-354.