



Subject code: ZŽS/124		Subject name: Experimental Investigation of Environmental Processes	
Study cycle: III	Year: I	Semester: I	ECTS credits: 6
Status: elective		Contact hours: 60 Lectures: 40 Practical courses: 20	
Assigned professors and assistants:		Lecturers and assistants selected for the field to which the course belongs	
Prerequisites:		/	
Subject objectives:		Understanding the essence of experimental research and the possibilities of applying it in environmental studies. The aim of the course is to master knowledge related to the use of methods and techniques in experimental research, with a focus on experimental studies of natural and social geographic elements of the environment. The course will introduce candidates to various approaches to experimental research, the classification of experiments based on their location, analysis of research results, creation of experimental result databases, and their modeling.	
Teaching units:		1. Introductory Lectures – Experiment, Experimental Research 2. Experimental Research in the Environment 3. Methods of Sample Collection for Experimental Research in the Environment 4. Methods and Techniques of Experimental Research 5. Approaches to Experimental Research 6. Experimental Research of Natural-Geographic Elements of the Environment 7. Experimental Research of Social-Geographic Elements of the Environment 8. Description of Conducting Experiments in Environmental Research 9. Laboratory Experiment (Analytical System, Laboratory Experiment Protocol) 10. Experiment in the Environment 11. Testing the Statistical Significance of Experimental Research in the Environment 12. Analysis of Experimental Research Results in the Environment 13. Geodatabase of Experimental Environmental Research Results 14. Processing of Experimental Data	



	15. Modeling and Geovisualization of Experimental Environmental Research Results		
Learning outcomes:	Knowledge: – Master knowledge of the possibilities for applying experimental environmental research. – Understand the significance and procedures of experimental environmental research. Skills: – Independently apply methods of experimental environmental research. – Assess the state of quality, phenomena, and processes in the environment using experimental research. Competencies: – Independently apply experimental methods in laboratory and field conditions to research the environment. – Independently create geodatabases, analyze research results, and carry out modeling and geovisualization of experimental environmental research results.		
Teaching methods:	Multimedia presentation and discussion (lecture); independent research work by students and joint analysis (research seminar/project, project tasks).		
Knowledge testing methods with grading structure¹:		<i>Maximum points</i>	<i>Minimum points</i>
	Theoretical Foundations of Identification and Tourist Valuation of Relief in Tourism - Oral Discourse	25	14
	Practical Knowledge and Work on Identification and Tourist Valuation of Relief in Tourism - Project Tasks	25	14
	Independent Research Work with Oral Verification	50	27
	TOTAL	100	55
	Assessment:		
	<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

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



	5 (F, FX) insufficient <55
Literature²:	Mandatory: 1. Plut, D., (2004): Geografske metode proučevanja degradacije okolja, Univerza v Ljubljani, Ljubljana. 2. Kullman, K., (2013): Geographies of Experiment/Experimental Geographies: A Rough Guide, Geography Compass 7/12 (2013): 879–894, DOI: 10.1111/gec3.12087. 3. Tomanec R., A., (2000): Metode ispitivanja mineralnih sirovina, u pripremi mineralnih sirovina, Beograd. 4. Ghani A., N., (2014): Experimental Research Methods for Students in Built Environment and Engineering, MATEC Web of Conferences, DOI: 10.1051/matecconf/20141001001. Recommended: 1. Vácha, R., Jungwirth P., Chenb, J., Valsaraj, K., (2006). Adsorption of polycyclic aromatic hydrocarbons at the air–water interface: Molecular dynamics simulations and experimental atmospheric observations. Physical Chemistry Chemical Physics 8, 4461- 446. 2. Srikanta, M., Akhil, D., G., (2018): Experimental Design and Response Surface Analysis, Applied Statistical Modeling and Data Analytics, A Practical Guide for the Petroleum Geosciences, https://doi.org/10.1016/B978-0-12-803279-4.00007-9.

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.