



UNIVERSITY OF SARAJEVO – FACULTY OF SCIENCE
SUBJECT DESCRIPTION

Form SP2

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Subject code: GE-519-4	Subject name: Environmental Monitoring		
Study cycle: II	Year: I	Semester: I	ECTS credits: 6
Status: Elective		Contact hours: 60 Lectures: 30 Practical courses: 30	
Assigned professors and assistants:	Lecturers and assistants selected for the field to which the course belongs.		
Prerequisites:	/		
Subject objectives:	Acquiring knowledge of the basic principles of environmental monitoring systems to accurately determine the presence of pollutants. Introducing students to various techniques and measuring instruments used in environmental monitoring.		
Teaching units:	1. Introductory Lecture 2. Definition and Importance of Environmental Monitoring 3. Overview of Various Instruments for Measuring Air, Water, and Soil Quality 4. Calibration Techniques and Maintenance of Monitoring Equipment 5. Field Research Methodologies – Sampling and Analysis of Sampling Methods 6. Monitoring Pollutants (SO₂, NO_x, CO₂, CO), PM Particles. Specifics of Air Monitoring 7. First Test 8. Data Analysis and Results from Monitoring 9. Use of Software for Data Analysis. GIS in Monitoring 10. Use of Satellite Data and Drones in Monitoring 11. Creation of Thematic Maps and Spatial Analysis of Results 12. Basics of Statistical Data Analysis 13. Domestic and International Legal Regulations in the Field of Monitoring 14. Preparation of Reports and Presentation of Monitoring Results 15. Analysis of Seminar Papers 16.		



Learning outcomes:	Knowledge: • student understands and recognizes the theoretical and practical aspects of environmental monitoring. Skills: • Applies various techniques and uses measuring instruments for monitoring air, water, and soil pollution. Competencies: • Independently collects, analyzes, and integrates monitoring data.																																																
Teaching methods:	Multimedia presentation and discussion (lectures); practical work, educational material analysis and discussion (practical courses).																																																
Knowledge testing methods with grading structure¹:	<table><tr><td></td><td colspan="2"><i>Points</i></td></tr><tr><td>Attendance</td><td>5</td><td>3</td></tr><tr><td>Participation on lectures</td><td>5</td><td>3</td></tr><tr><td>Tests</td><td>40</td><td>22</td></tr><tr><td>Seminar paper</td><td>10</td><td>6</td></tr><tr><td>Final exam</td><td>40</td><td>21</td></tr><tr><td colspan="3"> </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 colspan="3"> </td></tr><tr><td>5</td><td>(F, FX) insufficient</td><td>55</td></tr></table>		<i>Points</i>		Attendance	5	3	Participation on lectures	5	3	Tests	40	22	Seminar paper	10	6	Final exam	40	21				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: -Khopkar, S.M. (2013). Environmental Pollution Monitoring And Control. New Age International Publishers -Burden, Frank R., Ulrich Foerstner, Ian D. McKelvie, and Alex Guenther, eds. 2002. Environmental Monitoring Handbook. 1st ed. New York: McGRAW-HILL Lutter, G.W. (2007) Ecological Risk Assessment 2nd																																																

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.



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Edition, CRC Press.

- Ermakov, S., Volkova, L., Kapustina, I. (2021) Ecosystems Measurement: Risk Assessment Methods and Ecological Safety Principles, Transportation Research Procedia 54, 47–57

Recommended:

- Aighewi, I.T., Ekundayo, E.O. (2009) Monitoring Of The Environment As A Whole. Environmental Monitoring - Volume I, EOLSS Publications