UNIVERSITY OF SARAJEVO – FACULTY OF SCIENCE
Department of Chemistry

Course ID:	Course name: MATHEMATICS I		
Cycle: FIRST	Year: FIRST	Semester:I	ECTS credits:7
Course status: MANDATORY	Total course hours: 105 Lectures: 45 Laboratory: 60		
Teaching participants:	**Teachers and associates with expertise in the field to which the subject belongs** [do not enter names in this section. Leave the wording as indicated in this section]		
Prerequisite for enrollment:	-		
Course aims:	Introducing students to elementary calculus		
Thematic course units:	1. Introduction 2. Assemblies and operations with assemblies. Relations and functions. 3. Natural, integer, rational and real numbers. Number operations. 4. Cartesian coordinate system. Elementary functions. Zero, sign and graph. 5. Binomial Theorem. 6. Systems of linear equations. Gaussian method. Solution discussion. 7. Matrices and operations with matrices. 8. Determinant matrix. 9. Solving a system of linear equations using determinants. 10. Inverse matrix. Inverse search methods. 11. Matrix equations. 12. Vectors in plane and space. Vector operations. 13. Scalar, vector and mixed product. 14. Sequences of real numbers. Sequences limit value.		

	15. Arithmetic and geometric sequence.
Learning outcomes:	Knowledge: The student acquires knowledge of elementary mathematics Skills: Understanding the elementary mathematics Competences: Application of mathematics in chemistry
Teaching methodology:	Multimedia presentation. Mathematical softw

Assessment methods and grading system[1]:

Grading criteria		
Criteria	Maximal score	Required score
1. Class attendance	5	3
2. Class activities	5	2
3. Midterms	2 × 25	2× 14
4. Final exam	40	22
Total	100	55
Scores and grading		
Score	Grade (B&H)	Grade (ECTS)
< 55	5	F, FX
55–64	6	E
65–74	7	D
75–84	8	C
85–94	9	B
95–100	10	A

Literature[2]:

Mandatory literature:

1. Demidovič BP. Problems and solved examples from higher mathematics.
2. Ayres FJR, Mendelson E. Differential and Integral Calculus. Schaum's Outline Series; McGrow-Hill: 1990.

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[1] The grading structure for each subject is determined bythe Council of the organizational unit before the beginning of the academic year in which the subject is taught as per 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 the Council of the organizational unit of the higher education institution, as a public institution, determines by a special decision, which is published on its website before the beginning of the academic year obligatory, mandatory and recommended textbooks and manuals, as well as other recommended literature based on which exams are prepared and taken as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton

	Supplementary literature:
	1. Courant R. Differential and Integral Calculus, Volume 1. 2nd ed. McShane EJ, translator, USA: John Wiley and Sons; 1988.