



Course ID: H00115	Course name: MINERALOGY WITH CRYSTALLOGRAPHY		
Cycle: FIRST	Year: FIRST	Semester: I	ECTS credits: 4
Course status: MANDATORY		Total course hours: 60 Lectures: 30 Laboratory: 30	
Teaching participants:	Teachers and associates with expertise in the field to which the subject belongs		
Prerequisite for enrollment:	-		
Course aims:	Enabling students to interpret minerals in crystallography and mineralogy, and to observe their structures, properties, ways of origin and application in various branches of the economy. Based on this knowledge, students can more easily master the material of inorganic chemistry and other chemical areas in which knowledge of crystallography and structural material is necessary.		
Thematic course units:	<ol style="list-style-type: none">1. Introduction to mineralogy, historical development and connection with other natural sciences2. Crystals, amorphous substances, crystal morphology and crystallographic laws3. Crystal forms, classes, crystal systems and projections of crystal classes4. Geochemical composition of the Earth, bonds in crystals5. Physical properties of crystals, research methods of crystallized substances6. Minerals, distribution of minerals, origin and content in the Earth's crust7. The first test8. Structures and properties of minerals in the elemental state9. Structures and properties of sulfides, sulfosols and halides10. Structures of oxides and hydroxides, physical properties, distribution in BiH and use11. Carbonates, nitrates, iodates, borates, structures, grouping, properties, distribution in BiH and use12. Sulphates, phosphates, arsenates and vanadates, tungstates and molybdates, structural properties, distribution and application13. Silicate minerals, structures, properties and division into groups based on structure14. Non-silicates, cyclosilicates and sorosilicates, properties, use and distribution in BiH15. Inosilicates, phylosilicates and tectosilicates, properties, application and distribution in BiH		

Learning outcomes:	<p>Knowledge:</p> <ul style="list-style-type: none"> • students will be able to explain the genesis of minerals • students will be able to explain and describe the internal structure and external appearance of minerals • students will be able to classify minerals according to the crystallochemical classification <p>Skills:</p> <ul style="list-style-type: none"> • students will be able to define and determine the chemical composition of minerals • students will be able to define and determine the physical properties of minerals <p>Competences:</p> <ul style="list-style-type: none"> • students will be able to recognize minerals independently and as a team • students will be able to discuss and notice the main differences between individual minerals and systematize them 																																													
Teaching methodology:	Lectures are theoretical and practical based on enabling students to independently interpret minerals, their genesis, division, properties, composition and recognition of minerals.																																													
Assessment methods and grading system¹:	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="background-color: #e0e0e0;">Grading criteria</th> </tr> <tr> <th style="width: 60%;">Criteria</th> <th style="width: 20%;">Maximal score</th> <th style="width: 20%;">Required score</th> </tr> </thead> <tbody> <tr> <td>1. Class attendance</td> <td>5</td> <td>3</td> </tr> <tr> <td>2. Class activities</td> <td>15</td> <td>8</td> </tr> <tr> <td>3. Midterms</td> <td>1× 40</td> <td>1×22</td> </tr> <tr> <td>4. Final exam</td> <td>40</td> <td>22</td> </tr> <tr> <td style="text-align: center;">Total</td> <td style="text-align: center;">100</td> <td style="text-align: center;">55</td> </tr> <tr> <th colspan="3" style="background-color: #e0e0e0;">Scores and grading</th> </tr> <tr> <th style="width: 60%;">Score</th> <th style="width: 20%;">Grade (B&H)</th> <th style="width: 20%;">Grade (ECTS)</th> </tr> <tr> <td style="text-align: center;">< 55</td> <td style="text-align: center;">5</td> <td style="text-align: center;">F, FX</td> </tr> <tr> <td style="text-align: center;">55–64</td> <td style="text-align: center;">6</td> <td style="text-align: center;">E</td> </tr> <tr> <td style="text-align: center;">65–74</td> <td style="text-align: center;">7</td> <td style="text-align: center;">D</td> </tr> <tr> <td style="text-align: center;">75–84</td> <td style="text-align: center;">8</td> <td style="text-align: center;">C</td> </tr> <tr> <td style="text-align: center;">85–94</td> <td style="text-align: center;">9</td> <td style="text-align: center;">B</td> </tr> <tr> <td style="text-align: center;">95–100</td> <td style="text-align: center;">10</td> <td style="text-align: center;">A</td> </tr> </tbody> </table>	Grading criteria			Criteria	Maximal score	Required score	1. Class attendance	5	3	2. Class activities	15	8	3. Midterms	1× 40	1×22	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
Grading criteria																																														
Criteria	Maximal score	Required score																																												
1. Class attendance	5	3																																												
2. Class activities	15	8																																												
3. Midterms	1× 40	1×22																																												
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																																												
Literature²:	<p>Mandatory literature:</p> <ol style="list-style-type: none"> 1. Operta, M. (2009): Mineralogija (knjiga I), Udžbenik Univerziteta u Zenici. 2. Operta, M. (2009): Mineralogija (knjiga II), Udžbenik Univerziteta u Zenici. 																																													

¹ The grading structure 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 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