



Course ID: HOA117	Course name: INTRODUCTION TO LABORATORY TECHNIQUES		
Cycle: FIRST	Year: FIRST	Semester: I	ECTS credits: 3
Course status: MANDATORY	Total course hours: 60 Lectures: 15 Laboratory: 45		
Teaching participants:	Teachers and associates with expertise in the field to which the subject belongs		
Prerequisite for enrollment:	-		
Course aims:	Introducing students to the basics of laboratory work as an introduction to all other chemical practicums.		
Thematic course units:	<ol style="list-style-type: none">1. Introduction to laboratory techniques, organization of different types of laboratories.2. Safety in the laboratory, dangerous and flammable substances.3. First aid in the laboratory.4. Laboratory glassware, equipment and instruments.5. Chemicals: types, storage, safety data sheet.6. Basic laboratory techniques: theory and application.7. Complex laboratory techniques: theory and application.8. Basic lab measurements: precision and accuracy, sources of errors.9. Gases: properties and behaviours, work with gases.10. Solid substances: properties, obtaining methods.11. Solutions: properties, preparation and use in the lab.12. Planning, analysis and graphical presentation of experimental results.		
Learning outcomes:	<p><i>Knowledge:</i> To acquire basic theoretical and practical knowledge about working in a chemical practicum.</p> <p><i>Skills:</i> Apply weighing, filtering, recrystallization, distillation, extraction in a chemical laboratory. Adequate use of laboratory utensils and chemicals. Analyze the procedures for obtaining gases. Evaluate potential sources of error when experimenting. Show graphic results of experimental work. Apply appropriate experimental procedures for obtaining gases in the laboratory with observance of precautionary measures. Prepare aqueous solutions of different</p>		

	<p>concentrations (quantitative, mass, percentage). <i>Competences:</i> Acquisition of basic theoretical knowledge and practical skills of work in chemical practicum for successful monitoring of work in other chemical practicums. Plan the performance of the given experiment with the application of precautionary measures and protection during laboratory work, and argue the results obtained.</p>																																													
Teaching methodology:	Method of oral presentation, method of practical work.																																													
Assessment methods and grading system¹:	<table border="1"> <thead> <tr> <th colspan="3">Grading criteria</th> </tr> <tr> <th>Criteria</th> <th>Maximal score</th> <th>Required score</th> </tr> </thead> <tbody> <tr> <td>1. Class attendance</td> <td>5</td> <td>2</td> </tr> <tr> <td>2. Class activities</td> <td>5</td> <td>3</td> </tr> <tr> <td>3. Midterms</td> <td>45</td> <td>25</td> </tr> <tr> <td>4. Final exam</td> <td>45</td> <td>25</td> </tr> <tr> <td>Total</td> <td>100</td> <td>55</td> </tr> <tr> <th colspan="3">Scores and grading</th> </tr> <tr> <th>Score</th> <th>Grade (B&H)</th> <th>Grade (ECTS)</th> </tr> <tr> <td>< 55</td> <td>5</td> <td>F, FX</td> </tr> <tr> <td>55-64</td> <td>6</td> <td>E</td> </tr> <tr> <td>65-74</td> <td>7</td> <td>D</td> </tr> <tr> <td>75-84</td> <td>8</td> <td>C</td> </tr> <tr> <td>85-94</td> <td>9</td> <td>B</td> </tr> <tr> <td>95-100</td> <td>10</td> <td>A</td> </tr> </tbody> </table>	Grading criteria			Criteria	Maximal score	Required score	1. Class attendance	5	2	2. Class activities	5	3	3. Midterms	45	25	4. Final exam	45	25	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
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Literature²:	<p>Mandatory literature:</p> <ol style="list-style-type: none"> Galijašević S, Dugandžić V. Uvod u laboratorijski rad: praktikum. Sarajevo: Prirodno-matematički fakultet; 2014. <p>Supplementary literature:</p> <ol style="list-style-type: none"> Minić D, Stanisavljev D, Cvjetičanin N, Kuzmanović M, Ignjatović Lj, Ćirić-Marjanović G. Uvod u laboratorijski rad. Beograd: Univerzitet u Beogradu, Fakultet za fizičku hemiju; 2013. 																																													

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