



Course ID: HOA486	Course name: INORGANIC TOXICANTS IN THE ENVIRONMENT		
Cycle: FIRST	Year: FOURTH	Semester: VIII	ECTS credits: 3
Course status: MANDATORY		Total course hours: 30 Lectures: 30	
Teaching participants:	Teachers and associates with expertise in the field to which the subject belongs		
Prerequisite for enrollment:	-		
Course aims:	Acquiring the necessary knowledge to understand the facts about the properties and behavior of inorganic pollutants that occur in the atmosphere, water and soil, the main sources of pollution, the basic toxicological properties of these pollutants and methods of their detection and quantification.		
Thematic course units:	<ol style="list-style-type: none">1. Introduction. Distribution of elements2. A brief historical overview3. Basic definitions: toxicology and ecotoxicology4. Behavior and toxicity of metals and metalloids in the environment5. Mobilization, binding and chemical forms of metals in the environment6. Bioavailability, bioconcentration, bioaccumulation and biomagnification of metals in the environment7. Ecological properties, risks and toxicity of heavy metals8. Ecotoxicology of mercury and lead9. Ecotoxicology of cadmium and chromium10. Ecotoxicology of arsenic and selenium11. Behavior and toxicity of non-metals in the environment12. Ecotoxicology of phosphorus and its compounds13. Ecotoxicology of sulfur and its compounds14. Ecotoxicology of carbon and its compounds15. Ecotoxicology of halogen elements. Fluorine and its compounds		
Learning outcomes:	<i>Knowledge:</i> <ol style="list-style-type: none">1. To list the main properties and sources of inorganic pollutants that occur in the atmosphere and explain their behavior.2. To classify inorganic toxicants in the environment and state their ecotoxicological properties <i>Skills:</i> <ol style="list-style-type: none">1. Predict the behavior of metals and metalloids in the environment based on their ecotoxicological properties2. Assess the global harmful effects of inorganic toxicants on the environment		

	<p><i>Competencies:</i></p> <ol style="list-style-type: none"> Propose appropriate methods for detection and quantification of inorganic toxicants in the environment and analyze their effectiveness Independently form plans and proposals for concrete measures in order to protect the environment. 																				
Teaching methodology:	Oral presentation method, conversation method																				
Assessment methods and grading system¹:	Grading criteria																				
	<table border="1"> <thead> <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>3</td> </tr> <tr> <td>2. Seminar paper</td> <td>15</td> <td>8</td> </tr> <tr> <td>3. Test</td> <td>40</td> <td>22</td> </tr> <tr> <td>4. Final exam</td> <td>40</td> <td>22</td> </tr> <tr> <td>Total</td> <td>100</td> <td>55</td> </tr> </tbody> </table>	Criteria	Maximal score	Required score	1. Class attendance	5	3	2. Seminar paper	15	8	3. Test	40	22	4. Final exam	40	22	Total	100	55		
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Literature²:	<p>Mandatory literature:</p> <ol style="list-style-type: none"> Sofilić T. Ekotoksikologija. Sisak: Sveučilište u Zagrebu, Metalurški fakultet; 2014. Sofilić T, Makić H. Toksikologija. Sisak: Sveučilište u Zagrebu, Metalurški fakultet; 2019. <p>Supplementary literature:</p> <ol style="list-style-type: none"> Wright DA, Welbourn P. Environmental Toxicology. Cambridge: Cambridge University Press; 2002. Cox A. The Elements on Earth: Inorganic Chemistry in the Environment. Oxford: Oxford University Press; 1995. 																				

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