

NAME OF THE COURSE		Toxicology				
Code	PMB735	Year of study	2			
Course teacher	Viljemka Bučević Popović, Assistant Professor	Credits (ECTS)	3			
Associate teachers		Type of instruction (number of hours)	L	S	E	F
			30			
Status of the course	elective	Percentage of application of e-learning	10%			
COURSE DESCRIPTION						
Course objectives	Getting acquainted with the basic principles of toxicology and the toxicological properties of selected groups of harmful substances.					
Course enrolment requirements and entry competences required for the course	<p>There are no prerequisites for enrolment.</p> <p>Entry competencies required for following the course successfully:</p> <ul style="list-style-type: none"> - knowledge of the chemical properties of inorganic and organic compounds - knowledge of the structure and functioning of the main organ systems in human body 					
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	<p>After completing the course, the student will be able to:</p> <ul style="list-style-type: none"> • Compare the main pathways for absorption of toxic substances into the human body, their distribution, metabolism and excretion. • Interpret dose and effect ratio, distinguish acute from chronic toxicity, classify harmful substances according to toxicological data • Assess the toxicity of different groups of substances (gases, solvents, metals, etc.) • Apply protective measures against chemicals in laboratory work • Discuss effects of potentially harmful substances in the everyday environment (pesticides, natural toxins, nutritional supplements, etc.) 					
Course content broken down in detail by weekly class schedule (syllabus)	<p>Lectures:</p> <ol style="list-style-type: none"> 1. Toxicology – description and history. (1 hour) 2. Absorption of harmful substances into the human body. Distribution and excretion of harmful substances (3 hours) 3. Biotransformation: phase I and phase II reactions. Exposure to toxic substances. (3 hours) 4. Dose-Effect Ratio. Types of adverse effects - general toxicity. (1 hour) 5. Classification of harmful substances. (1 hour) 6. Mutagenicity and carcinogenicity. (2 hours) 7. Reproductive toxicity. Ecotoxicity. (2 hours) 8. Risk Assessment, Danger and Safety. (1 hour) 9. Toxic effect of gases: suffocants and irritants. (2 hours) 10. Toxic effects of metals and metal containing substances. (2 hours) 11. Toxic organic substances. (4 hours). 12. Harmful effects of ionizing radiation. (2 hours) 13. Protection measures against harmful chemicals in laboratory. (2 hours) 14. Selected examples of exposures to harmful substances in everyday life. (4 hours) 					
Format of instruction	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> seminars and workshops <input type="checkbox"/> exercises <input type="checkbox"/> <i>on line</i> in entirety <input type="checkbox"/> partial e-learning <input type="checkbox"/> field work		<input checked="" type="checkbox"/> independent assignments <input type="checkbox"/> multimedia <input type="checkbox"/> laboratory <input checked="" type="checkbox"/> work with mentor <input type="checkbox"/> (other)			

Student responsibilities	Attending classes, seminar on selected topic, exam					
Screening student work (name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)	Class attendance	1.0	Research		Practical training	
	Experimental work		Report		(Other)	
	Essay		Seminar essay	0.5	(Other)	
	Tests		Oral exam	1.5	(Other)	
	Written exam		Project		(Other)	
Grading and evaluating student work in class and at the final exam	20% seminar 80% exam					
Required literature (available in the library and via other media)	Title				Number of copies in the library	Availability via other media
	Lectures as pdf files.					available
	Sutlović et al., Toksikologija hrane, Redak, 2011.				2	
	Duraković et al., Klinička toksikologija, Grafos, 2000.				1	
Optional literature (at the time of submission of study programme proposal)	<ul style="list-style-type: none"> Sutlović et al., Osnove forenzične toksikologije, Redak, 2011. Plavšić, Žuntar, Uvod u analitičku toksikologiju, Školska knjiga, 2006. C.D. Klaassen (Ed.), Casarett and Doull's Toxicology - The Basic Science of Poisons, 6th edition, McGraw-Hill, 2001. 					
Quality assurance methods that ensure the acquisition of exit competences	The quality of teaching will be monitored by collecting feedback from students through personal consultations, joint conversations and anonymous student surveys. The students' performance in the final exam will be analyzed and used to improve the teaching performance in the next academic year.					
Other (as the proposer wishes to add)						