
	UNIVERSITY OF EAST SARAJEVO				
	Faculty of Medicine				
	Study program: Medicine				
	Integrated academic studies		Year of study: V		
Full course title	BALNEOLOGY				
Department	Department of biochemistry, Faculty of Medicine Foca				
Course code		Course status		Semester	ECTS
ME-02-2-057-10		elective		X	1
Teacher/-s	Prof. Natasa Milic, PhD				
Associate/ - s					
The number of teaching hours / teaching workload (per week)			Individual student workload (in hours per semester)		Coefficient of student workload S_o^i
L	E	SP	L	E	SP
1	0	0	0*15*1	1*15*1	0*15*1
Total teaching workload (in hours, per semester)			Total student workload (in hours, per semester)		
1*15+0*15+0*15=15			0*15*1+1*15*1+0*15*1=15		
Total subject workload (teaching+student): 5+15=30hours per semester					
Learning outcomes	By completing this course, students gain knowledge in the areas of quality, use, significance, and health safety of waters used in health sciences, the pharmaceutical industry, and balneology. They also gain insight into the importance of water in the healthcare system, understand basic principles for addressing water quality issues used for health purposes and in balneology, and learn about principles for selecting an optimal water sample for analysis.				
General competences	They are acquainted with a specific diagnostic algorithm. They are capable of making appropriate therapeutic decisions. They are eager to collaborate with other medical professionals.				
Preconditions	Precondition for taking the exam: all of the fourth year exams passed				
Teaching methods	Lectures				
Course content per week	Lectures 1. History of balneology worldwide and in our country. Standards, study, and education in balneology. 2. Classification of geothermal waters. Quality of geothermal waters and their use in treating various diseases. 3. Importance and impact of different ion presence in mineral waters on health and quality of life. 4. Scientific quality standards of spa waters, legal regulation of thermal mineral waters in our country and worldwide. 5. Thermal medicine, aerosol therapy. 6. Mineral, thermal, and thermal mineral waters of the Balkan Peninsula – importance and development. 7. Healthcare system and insurance, rehabilitation and modern therapies worldwide and in our country. 8. Water as a raw material for pharmaceutical production and medicinal substances. Contaminants in water. 9. Quality and use of water in therapy and production of medicinal substances. Pharmacopeia, legal regulations worldwide and in our country. 10. Water purification - chemical and microbiological aspects. 11. Water quality monitoring. Risk analysis in water treatment.				

¹Coefficient of student workload S_o is calculated as it follows:

a) for the study programs not going through the licensing process: $S_o = (\text{total workload in semester for all of the subjects } 900 \text{ hrs} - \text{total teaching workload } L + \text{Ein semester for all of the subjects } 870 \text{ hrs}) / \text{total teaching workload } L + \text{Ein semester for all of the subjects } \text{ hrs} = \text{ }.$ Consult form content and its explanation.

b) for the study programs going through the licensing process, it is necessary to use form content and its explanation.

	12. Water quality in ophthalmological preparations, dialysis, and biotechnological research.			
	13. 14. 15. Selection of proper sample, evidence and determination of water quality, risk analysis in water treatment – seminar papers.			
Compulsory literature				
Author/s	Publication title, publisher	Year	Pages (from-to)	
Collentro WV.	Pharmaceutical Water: System Design, Operation, and Validation. New York, London: Informa Healthcare	2011.		
	-			
Additional literature				
Author/s	Publication title, publisher	Year	Pages (from-to)	
	-			
Student responsibilities, types of student assessment and grading	Grading policy		Points	Percentage
	Pre-exam activities			
	lecture/exercise attendance		50	50%
	Final exam			
	test		50	50%
	TOTAL		100	100 %

Certification date	June 17th 2024
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* the number of necessary rows is added by using *insert mode*
