

Study Programme: Bachelor Academic Studies in Chemistry - Quality Control and Environmental Management, Bachelor Academic Studies in Environmental Protection – Environmental Protection Analyst		
Course Unit Title: Drinking Water Quality		
Course Unit Code: IKK-605		
Name of Lecturer(s): Full Professor Jasmina Agbaba, Associate Professor Jelena Molnar Jazić		
Type and Level of Studies: Bachelor of Science Degree		
Course Status (compulsory/elective): Elective		
Semester (winter/summer): Winter		
Language of instruction: English		
Mode of course unit delivery (face-to-face/distance learning): Face-to-face		
Number of ECTS Allocated: 6		
Prerequisites: None		
Course Aims: Introducing students to chemical, microbiological, biological and health aspects of drinking water. Mastering the technology of drinking water treatment.		
Learning Outcomes: Students should know how to control the preparation and distribution of drinking water.		
Syllabus: <i>Theory</i> The following areas are studied: drinking water resources, the chemical aspects of drinking water, microbiological, biological and health aspects of drinking water quality control, separation methods for the preparation of drinking water (sedimentation, filtration and membrane separation), chemical methods of drinking water treatment (coagulation, flocculation, oxidation processes, the use of ozone and advanced oxidation processes); diffusion methods in the preparation of drinking water, water disinfection, oxidation by-products; removal of specific organic and inorganic substances from drinking water, bottled water. Case studies are used to verify the knowledge gained. <i>Practice</i> Computational exercises in the area of determining the toxicity of chemicals in drinking water, and filtration deposition, diffusion method in the preparation of drinking water. Experimental determination of toxic metals and toxic organic chemicals in water. Microbiological and biological analysis of drinking water. Control of drinking water quality. Experimental determination of the performance of membrane filtration technology. Chemical methods in the preparation of drinking water. Diffusion method in the preparation of drinking water. Disinfection of water. Determination of oxidation/disinfection by-products. Experimental determination of technological parameters of iron and manganese in drinking water. Computational exercises in the field of determining the toxicity of chemical substances in drinking water, precipitation and flutation, diffusion methods in the preparation of drinking water.		
Required Reading: 1. Kerry J. Howe, David W. Hand, John C. Crittenden, R. Rhodes Trussell, George Tchobanoglous: Principles of Water Treatment, John Wiley & Sons, 2012. 2. John C. Crittenden, R. Rhodes Trussell, David W. Hand, Kerry J. Howe, George Tchobanoglous: Water Treatment Principles and Design, Third edition, MWH Global, Inc., 2012. 3. Degremont, s.a: Water Treatment Handbook, Seventh Edition – 2 Volumes set, Lavoisier SAS, 2007. 4. Geo. Clifford White: Handbook of Chlorination and Alternative Disinfectants, Fifth Edition, John Wiley & Sons, Inc. 1999.		
Weekly Contact Hours: 5	Lectures: 3	Practical work: 2
Teaching Methods: Lectures, laboratory work and seminar		

Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Active class participation	10	Written exam	30
Practical work	20	Oral exam	20
Preliminary exam	20		