

<b>Study Programme:</b> Bachelor Academic Studies in Environmental Protection – Environmental Protection Analyst, Bachelor Academic Studies in Chemistry - Quality Control and Environmental Management			
<b>Course Unit Title:</b> Air Pollution			
<b>Course Unit Code:</b> IZZS-201			
<b>Name of Lecturer(s):</b> Full Professor Jasmina Agbaba, Associate Professor Marijana Kragulj Isakovski			
<b>Type and Level of Studies:</b> Bachelor of Science Degree			
<b>Course Status (compulsory/elective):</b> Elective			
<b>Semester (winter/summer):</b> Summer			
<b>Language of instruction:</b> English			
<b>Mode of course unit delivery (face-to-face/distance learning):</b> Face-to-face			
<b>Number of ECTS Allocated:</b> 6			
<b>Prerequisites:</b> None			
<b>Course Aims:</b> Introduction to the basic characteristics of the atmosphere and pollutants in the atmosphere. Understanding the processes occurring in the atmosphere. Mastering the standard methodology for the monitoring and control of air pollutants in order to evaluate air quality.			
<b>Learning Outcomes:</b> Students should know how to define and explain the composition and characteristics of the atmosphere, state, explain and analyze the major air pollutants, specify and explain macro effects of air pollution; specify the most significant sources of air pollution, processing and interpreting the results of analysis and report the analysis that was performed; solve computational tasks related to air quality.			
<b>Syllabus:</b> <i>Theory</i> Composition and properties of the atmosphere. Vertical profile of atmospheric temperature and pressure. Temperature inversions. Sources and geochemical cycles of natural components of air. The study of the major air pollutants: particulate matter, sulfur compounds, nitrogen oxides and carbon, volatile organic compounds, photochemical oxidants, lead, chlorine, fluoride, asbestos. Introduction to natural and anthropogenic (stationary and mobile) sources of air pollution. Basic chemical processes in the atmosphere. Sources and consequences of the presence of ozone in the troposphere. Sources and characteristics of aerosols in the atmosphere. Macro effects of air pollution: acid rain, ozone depletion, the effect of "greenhouse" effect and climate change. <i>Practice</i> Practical instruction follows the theoretical one.			
<b>Required Reading:</b> 1. R.C.F: Fundamentals of Air Pollution Engineering, Dover Publications, INC, New York, 2012. 2. L.Theodore: Air Pollution Control Equipment Calculations, Wiley Publication, Canada, 2008. 3. K.B.Schnelle, Jr. C.A. Brown: Air Pollution Control Technology Handbook, CRC Press, 2002.			
<b>Weekly Contact Hours:</b> 5	<b>Lectures:</b> 3		<b>Practical work:</b> 2
<b>Teaching Methods:</b> Lectures and seminars.			
<b>Knowledge Assessment (maximum of 100 points):</b> 100			
<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
Active class participation	5	Written exam	30
Practical work	25		
Test I	10	Oral exam	30