

<b>Study Programme :BSc in Ecology</b>				
<b>Level:</b> bachelor				
<b>Course title:</b> Environmental Analysis (OZZS-204)				
<b>Status:</b> obligatory				
<b>ECTS:</b> 8				
<b>Requirements:</b> -				
<b>Learning objectives</b> Providing a wide base of fundamental knowledge about the physical and physico-chemical principles necessary for understanding the principles of analytical instruments. Understanding the role, importance and application areas of environment analysis with special emphasis on instrumental methods of analysis. Developing practical skills and ability to handle simpler instruments and to apply the standard methodology in solving problems and tasks in the field of environmental analysis.				
<b>Learning outcomes</b> Upon successful completion of this course, students should know: <ul style="list-style-type: none"> <li>• To identify where the analytical chemistry and analytical methods are used in environmental analysis;</li> <li>• Demonstrate fundamental knowledge of key concepts in solving basic known or unknown analytical problems and quantitative tasks;</li> <li>• To properly handle simple instruments for physical and chemical analysis of given samples;</li> <li>• To reliably, accurately and precisely measure when performing the set of instrumental analysis; and</li> <li>• To interpret the experimental results and write reports on the analysis that was performed.</li> </ul>				
<b>Syllabus</b>				
<i>Theoretical instruction</i>				
The objective and principles of instrumental methods of analysis. Signal and noise. Optical methods of analysis. Atomic emission and absorption spectrometry. Molecular absorption spectrometry. Other optical methods of analysis. Mass spectrometry. Electroanalytical methods. Potentiometry. Conductometry. Voltammetry. Amperometry. Instrumental methods of separation. Gas chromatography. Liquid chromatography. Selection of the optimal analysis. Processing experimental data.				
<i>Practical instruction</i> Practical instruction follows the theoretical instruction.				
<b>Weekly teaching load</b>				Other:
Lectures: 3	Exercises: 3	Other forms of teaching:	Student research:	