

<b>Level:</b> Master				
<b>Course title:</b> ADVANCED OXIDATION PROCESSES				
<b>Status:</b> elective				
<b>ECTS:</b> 6				
<b>Requirements:</b> none				
<b>Learning objectives</b> Students acquire knowledge in the field of advanced oxidation processes with emphasis on application in environmental protection and improvement of knowledge about the mechanisms of oxidation of pollutants.				
<b>Learning outcomes</b> After successfully mastering the course, the student applies knowledge of advanced oxidation, and explains the mechanism of these processes in different applications in environmental protection.				
<b>Syllabus</b> <i>Theoretical instruction</i> The most common advanced oxidation processes (AOP), their classification and mechanism of oxidative effects. The study of the mechanism of action of non-photochemical (ozonation at high pH values, Fenton and Fenton-like processes, O <sub>3</sub> /H <sub>2</sub> O <sub>2</sub> ) and photochemical (UV/H <sub>2</sub> O <sub>2</sub> , UV/O <sub>3</sub> , UV/H <sub>2</sub> O <sub>2</sub> /O <sub>3</sub> , photo-Fenton, photocatalysis-TiO <sub>2</sub> /hν / O <sub>3</sub> ) oxidation process for the treatment of water and soil contaminated with various organic and inorganic pollutants. Identification of specific degradation products. Application of advanced oxidation processes for the treatment of drinking water.  <i>Practical instruction</i> Practical instruction follows the theoretical instruction.				
<b>Weekly teaching load</b>				Other:
Lectures: 2 (30)	Exercises:	Other forms of teaching: 2 (30)	Student research:	