

<b>Level:</b> Master				
<b>Course title:</b> Chemical Processes in the Atmosphere				
<b>Status:</b> elective				
<b>ECTS:</b> 5				
<b>Requirements:</b> none				
<b>Learning objectives</b> Expand knowledge and prepare students to control air quality and improve knowledge of the processes, which by pollutants are emitted in the atmosphere, and their long-term consequences.				
<b>Learning outcomes</b> Students should be able to explain and describe in detail the composition and characteristics of the atmosphere, major pollutants and their sources, and the reactions which these pollutants in the atmosphere are subject to, which result in global changes. Independently solve complex practical problems related to the performance of chemical processes in the atmosphere and air protection.				
<b>Syllabus</b> <i>Theoretical instruction</i> Evolution and composition of the atmosphere. Temperature profile of the atmosphere and its composition changes with altitude. Half-life, life time and time reproducibility of chemical components in the atmosphere. Kinetics of chemical processes in the atmosphere. Reversible processes and chemical equilibrium. Photolysis. The most important atmospheric pollutants and their sources. Dispersion of air pollutants. Dry and wet deposition. Aerosols. Smog and photochemical smog - formation mechanisms. Chemical reactions in the atmosphere: organic, sulphur and nitrogen compounds. Oxidative capacity of the troposphere. Stratospheric ozone. Acid rain. The greenhouse effect. Trends and expectations for the future.  <i>Practical instruction</i> Practical instruction follows the theoretical instruction.				
<b>Weekly teaching load</b>				Other:
Lectures: 2 (30)	Exercises: 2 (30)	Other forms of teaching:	Student research:	