

Level: Master				
Course title: Process Materials in the Environment				
Status: elective				
ECTS: 9				
Requirements: none				
Learning objectives Students learn to apply various conventional and new process materials in technology for environmental protection.				
Learning outcomes The student is able <ul style="list-style-type: none"> • to describe the various process materials which are used in environmental protection • to describe the way in which they are produced and used • to critically evaluate their properties and selection of quality and quantity that is appropriate for the defined conditions of their application • to apply the selected experimental material testing methods 				
Syllabus <i>Theoretical instruction</i> The application of natural, modified and artificial materials. Hard materials: quartz sand, activated carbon, clays, zeolites, metal oxides (oxides of iron and ferruginous sand, manganese oxide, aluminium oxide), ion exchange resins, membranes. Liquid reagents: electrolytes, polyelectrolytes, oxidizing agents (potassium permanganate, hydrogen peroxide), acids and bases. Gaseous reactants: ozone, chlorine, chlorine dioxide, chloramines. Enzymes. Production technology and application of materials for the protection of the environment. <i>Practical instruction</i> Practical instruction follows the theoretical instruction.				
Weekly teaching load				Other:
Lectures: 2 (30)	Exercises: 2 (30)	Other forms of teaching: 2 (20)	Student research:	