

Level: master				
Course title: MODERN EDUCATIONAL TECHNOLOGY IN TEACHING CHEMISTRY				
Status: elective				
ECTS: 8				
Requirements: none				
Learning objectives Enabling students for application of modern educational technology in elementary and secondary chemical education.				
Learning outcomes <i>After successful completion of the course, a student is able to:</i> <ol style="list-style-type: none"> 1. list and critically analyze characteristics of various types of educational technology in the historical context, 2. list and explain pedagogical implications of use of educational technology in contemporary education, 3. design instructional presentations according to pedagogical principles, 4. competently use modern educational technology (computers, video equipment, interactive whiteboard, IR-pen), 5. use software for simulations of chemical processes in problem based learning and scientific method in learning chemistry, 6. express ability for team work and organizational skills. 				
Syllabus <i>Theoretical instruction:</i> Modern teacher and modern educational technology (MET). MET through history. Role of computers in the educational process. Computer visualization in chemistry teaching. Hardware and software requirements. Pedagogical implications of MET application in teaching. Reduction of informational load in PowerPoint presentations. Principles of signalling, segmenting, modality, multimedia and coherence. Virtual experiments and virtual laboratories. Application of computers in representation of chemical knowledge. Application of computers in control and valorization of students' knowledge. Construction of online tests. Computer-supported active learning of chemistry. <i>Practical instruction:</i> Use of MET (computers, video equipment, interactive whiteboard, IR-pen). Software for 2D and 3D representation of chemical compounds (work with SymyxDraw, ChemSketch and 3D viewer). Design of a PowerPoint presentation for a chemistry lecture, according to principles of signalling, segmenting, modality, multimedia and coherence. Download of chemical teaching material from Internet. Virtual laboratories (<i>Virtual Lab, ChemLab, Crocodile Chemistry</i>). Software for representation of chemical knowledge (<i>C-map</i>). Software for valorization of students' knowledge (<i>Hot Potatoes</i>).				
Weekly teaching load				Other:
Lectures: 2	Exercises: 4	Other forms of teaching:	Student research:	