

Course title: Crystallochemistry						
	Specialty	Semester	Number of ECTS	Number of hours in the class	Form	
	Foreign students	winter	2	15	Lecture	
Name of lecturer: Dr. Artur Sikorski						
Objective of the course (expected learning outcomes and competences to be acquired)						
<p>The major aims of this course are to familiarize the students with:</p> <ul style="list-style-type: none"> the fundamental crystallographic rights and describing them equations, classification of crystals basing on different criteria methods of determining the crystal structures of the compounds 						
Prerequisites:						
- completed courses in General chemistry						
Teaching methods:						
<ul style="list-style-type: none"> Lecture with multimedia presentation 						
Course contents						
<p>Lecture:</p> <p>The role of crystallography in modern chemistry. Definition of a crystal. Unit cell. Crystal systems. Symmetry-based classification of crystals (elements and operations of symmetry, crystal classes, Bravais lattices, space groups). The packing of the atoms in the crystals (a spatial arrangement of spheres, coordination number, tetrahedral and octahedral holes). Classification of crystals based on the chemical composition and the stoichiometric relationships. The crystal structures of selected elements and chemical compounds. The basics of the diffraction of X-rays on monocrystals. Sources and characteristics of X-ray radiation. Solving and refinement of the crystal structure. Structural databases. Quasi-crystals.</p>						
Recommended reading:						
Various academic handbooks concerning crystallochemistry, structural chemistry, and chemistry of crystals						
Assessment methods:						
<ul style="list-style-type: none"> Written exam with open questions Mid-term tests End-term test 						
Language of instruction: English						