

<b>Level:</b> bachelor			
<b>Course title:</b> Supramolecular chemistry			IHO-503
<b>Status:</b> elective			
<b>ECTS:</b> 5			
<b>Requirements:</b> none			
<b>Learning objectives</b> To provide students with understanding of the nature and magnitude of intermolecular interactions and solvation effects which cause the association between molecules and/or ions through non-covalent bonding interactions.			
<b>Learning outcomes</b> Students learn to assess the nature and severity of possible interactions between the molecules and ions of various sizes.			
<b>Syllabus</b> <i>Theoretical instruction</i> Principles of molecular recognition. The characterization of supramolecular systems. Complexation of cations and anions and their technological applications. Synthesis of macrocyclic compounds. Crown ethers. Cryptands. Spherands. Complexation of neutral molecules in aqueous solution. Receptors for hydrogen connection. Chiral recognition. Cyclophanes. Cyclodextrins. Metallo-receptors. Non-covalent interactions. Molecular self-assembling of nanostructures. Catenanes and rotaxane. Synthesis of receptors. The template effect. Supramolecular catalysts. Application of supramolecular chemistry. <i>Practical instruction</i> Laboratory exercises follow the lecture teaching material. Synthesis of the selected supramolecules. Characterization of supramolecules. The template effect.			
<b>Weekly teaching load</b>			<b>Other:</b>
<b>Lectures:</b> 2	<b>Exercises:</b> 2	<b>Other forms of teaching:</b>	<b>Student research:</b>