

Level: bachelor			
Course title: Bioorganic Chemistry (B-401)			
Status: obligatory			
ECTS: 8			
Requirements: none			
Learning objectives Acquiring new knowledge on the application of bio-active compounds, their analogues and model systems, for studying of fundamental biological processes.			
Learning outcomes Students will be trained to understand the fundamental mechanisms of biochemical processes and basic functions of complex biological systems, using modern chemical methods and selected naturally occurring or synthetic molecules.			
Syllabus <i>Theoretical instruction</i> Simple bioorganic mechanisms (the effects of proximity and orientation). Molecular recognition and supramolecular chemistry: bioorganic models of receptors, transporters and enzymes; supramolecular devices. Bioorganic chemistry of amino acids: enantioselective synthesis using chiral catalyst (homogeneous catalysis); asymmetric synthesis using chiral reagents; stereospecific synthesis based on the 'chiral pool' approach. Chemical synthesis of peptides and peptidomimetics: protective groups in the synthesis of peptides, methods for the formation of peptide bonds; Merrifield's solid-phase synthesis. Synthesis of nucleosides and analogues. Enzyme inhibitors of potential biomedical interest: structure, design and mechanism of action. <i>Practical instruction</i> In accordance with theoretical instruction.			
Weekly teaching load			Other:
Lectures: 3	Exercises: 3	Other forms of teaching: 1	