

<b>Level:</b> bachelor				
<b>Course title:</b> Bioorganic Chemistry (B-401)				
<b>Status:</b> obligatory				
<b>ECTS:</b> 9				
<b>Requirements:</b> none				
<b>Learning objectives</b> Acquiring new knowledge on the application of bio-active compounds, their analogues and model systems, for studying of fundamental biological processes.				
<b>Learning outcomes</b> 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.				
<b>Syllabus</b> <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.				
<b>Weekly teaching load</b>				Other:
Lectures: 3	Exercises: 3	Other forms of teaching: 1	Student research:	