

Level: Bachelor				
Course title: Structure and Function of Proteins, B-302				
Status: Obligatory				
ECTS: 6				
Requirements: none				
Learning objectives The goal of this course is to introduce students to the analysis of the structure and function of proteins, taking into account the structure-function relationship of proteins that are involved in various biological processes. Students will be trained in the use of appropriate techniques and methods of work in this area. In addition, students progress towards a successful professional career or further education in the field of biochemistry and related fields.				
Learning outcomes Upon completion of this course, students should be able to explain how the three-dimensional structure and reactivity of biological macromolecules determines their biological function (properties); describe the regulation of protein function and the mechanisms of regulation, to apply of appropriate biochemical techniques to study the structure and function of proteins and apply the acquired knowledge in further education or professional work.				
Syllabus <i>Theoretical instruction</i> The primary structure of protein, sequencing. Forces that stabilize protein structure. Secondary and supersecondary structures. Fibrous proteins. Domains, the tertiary structure, globular proteins. Quaternary structure. Myoglobin and hemoglobin; cooperative effects. Membrane proteins. Proteins and signal transduction. Immunoglobulins. Regulation of the protein function by phosphorylation, proteolysis, glycosylation, and modification by lipids. Protein denaturation and renaturation. Protein folding pathways. Protein degradation. Methods for determining the structure of proteins. <i>Practical instruction</i> Using computer software to analyze the structure of proteins and their mutual interactions, interactions with other proteins, nucleic acids and ligands in accordance with theoretical program of the course.				
Weekly teaching load				Other:
Lectures: 3	Exercises: 2	Other forms of teaching:	Student research:	