

Subject card

Subject name and code	Introduction to biochemistry, PG_00147022						
Field of study	Genetics and Experimental Biology						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2027/2028		
Education level	Bachelor's studies	Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	3	ECTS credits			2.0		
Learning profile	academic	Assessment form			exam		
Conducting unit	Department of General and Medical Biochemistry -> Faculty of Biology -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Ewa Laskowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan	Participation in consultation hours	Self-study	SUM		
	Number of study hours	30	4.0	16.0	50		
Subject objectives	Understanding the structure and functions of macromolecules (proteins, nucleic acids, carbohydrates, lipids) and small-molecule compounds found in the cell.2. Understanding of basic biochemical processes.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[GBEL3_W01] A graduate has an advanced knowledge and understanding of: the structure and properties of the main types of biological macromolecules; the molecular mechanisms of basic metabolic pathways and genetic information flow; the sources of genetic variation in organisms and the mechanisms of evolution. They can explain the principles of inheritance, the differences in structure and function between prokaryotic and eukaryotic cells, as well as the structure and functional relationships at the cellular and tissue levels.		Describes the structure and properties of basic types of biological macromolecules, molecular mechanisms of basic metabolic pathways.		[SW4] test/exam - oral or written		
[GBEL3_U01] The graduate is able to: independently perform practical tasks in the biological and related sciences, formulate research problems, analyse their results and draw conclusions.		Is able to independently perform simple practical tasks in the field of biological sciences.		[SU4] test/exam - oral or written			
Subject contents	Structure of proteins, nucleic acids, carbohydrates and lipids. Functions of selected proteins. Enzymes: kinetics, catalytic and regulatory strategies. Main metabolic pathways: glycolysis and gluconeogenesis, citric acid cycle, oxidative phosphorylation, pentose phosphate pathway. Metabolism of amino acids, nucleotides and lipids.						

Prerequisites and co-requisites	Knowledge of the structure of basic inorganic and organic compounds, chemical bonds, mechanisms of basic chemical reactions, energetics of chemical reactions, hydrophobic interactions, acids and bases, pH, units of measurement, concentration units of solutions.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	test with closed and open-ended questions	51.0%	100.0%
Recommended reading	Basic literature	Biochemistry. Tymoczko John L. Berg Jeremy M. Stryer Lubert Gatto Gregory, Macmillan Education, Macmillan Learning Berg J. M., Stryer L. , Tymoczko J. L., Biochemistry: A Short Course, Macmillan Education, Macmillan Learning	
	Supplementary literature	Harpers Illustrated Biochemistry. Rodwell Victor W. Bender David A. Botham.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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