University of Gdańsk

Subject card

Subject name and code	Introduction to biochemistry, PG_00203337		
Field of study	Medical 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	3.0
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	41.0	75

Subject objectives

1. Understanding the structure and functions of macromolecules (proteins, nucleic acids, carbohydrates, lipids) and small-molecule compounds found in the cell.

2. Understanding basic biochemical processes.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLMEDL3_W10] has an advanced knowledge and understanding of the physicochemical and biological basis of health sciences	Understands and describes the biochemical basis of health sciences.	[SW4] test/exam - oral or written
[BIOLMEDL3_W02] has an advanced knowledge and understanding of the structure and properties of basic types of biological macromolecules, molecular mechanisms of the pathways of basal metabolism and flow of genetic information, and sources of variation in organisms; explains the rules of inheritance	Describes the structure and properties of basic types of biological macromolecules and the molecular mechanisms of basic metabolic pathways.	[SW4] test/exam - oral or written
[BIOLMEDL3_U11] is able to use language specialized for medical biology in a way that is clear and accessible to both specialists and non-specialists alike	Is able to use specialized language for medical biology (with particular emphasis on biochemical terms) in a way that is understandable and accessible to both specialists and non-specialists.	[SU4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>The following topics will be discussed during the lecture:

Structure of proteins, nucleic acids, carbohydrates and lipids.

Function 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.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Completion of courses covering general and organic chemistry. 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.</td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Test with closed and open-ended questions</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>Biochemistry.Tymoczko John L. Berg Jeremy M. Stryer Lubert Gatto Gregory, Macmillan Education, Macmillan LearningBerg J. M., Stryer L. , Tymoczko J. L., Biochemia. Krótki kurs. PWN Warszawa 2013Biochemistry: A Short Course,</td></tr><tr><td>Supplementary literature</td><td>Harpers Illustrated Biochemistry. Rodwell Victor W. Bender David A. Botham,</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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