University of Gdańsk

Subject card

Subject name and code	General biochemistry, PG_00207408		
Field of study	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. Joanna Skórko-Glonek	
	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	2.0	43.0	75

Subject objectives

1. Learning about 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
[BIOLL3_W02] knows and understands at an advanced level the structure and properties of biological macromolecules, mechanisms of metabolism, flow of genetic information, sources of variation in organisms; rules of inheritance	- describes the structure, properties and functions of macromolecules (proteins, nucleic acids, carbohydrates, lipids) and small-molecule compounds found in the cell; knows the molecular mechanisms of metabolic processes that occur in living organisms (B_W02)	[SW4] test/exam - oral or written
[BIOLL3_U07] is able to present and justify her/his adopted position, using appropriate scientific argumentation, adapted to various audiences, and take part in discussions or debates		

Subject contents

Structure and function of biological macromolecules. Basic metabolic pathways (glycolysis, citric acid cycle, oxidative phosphorylation, gluconeogenesis, glycogen metabolism, structure and metabolism of fatty acids, photosynthesis, macromolecule biosynthesis) and their regulation, taking into account the specificity of the organism (bacteria, plants, animals).

Prerequisites and co-requisites

Completed courses during which the student learned the basics of inorganic and organic chemistry. Knowledge of the structure of basic inorganic and organic compounds, isomerism, chemical bonds, mechanisms of basic chemical reactions, energetics of chemical reactions, hydrophobic interactions, acids and bases, pH, measurement units, solution concentration units.

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>Multiple choice test with open questions</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>1. Berg J. M., Stryer L., Tymoczko J. L., Gatto GJ. 2019. Biochemistry, edition 8th or newer

2. John Tymoczko; Jeremy M. Berg; Gregory J. Gatto Jr.; Lubert Stryer. 2019. Biochemistry: a short course</td></tr>
<tr><td>Supplementary literature</td><td>Brown T. A. 2006. Genomes 3 3rd Edition. Garland Science

Bruce Alberts, Dennis Bray, Karen Hopkin, Alexander D Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter. 2014. Essential Cell Biology. Garland Science</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2"></td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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