University of Gdańsk

Subject card

Subject name and code	Introduction to biochemistry, PG_00147022		
Field of study	Genetics and Experimental Biology		
Date of commencement of studies	October 2025	Academic year of realisation of subject	2026/2027
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	
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_U01] Independently perform practical tasks in the field of biological sciences and related disciplines, formulate research problems, analyze 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
[GBEL3_W01] Understanding the structure and properties of basic types of biological macromolecules, molecular mechanisms of metabolic pathways and genetic information flow, as well as sources of genetic variability in organisms and mechanisms of evolution; explaining the rules of inheritance, elucidating differences in the structure and functioning of prokaryotic and eukaryotic cells, and understanding 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

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.

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="3">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 colspan="3"><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 rowspan="3">Recommended reading</td><td>Basic literature</td><td colspan="2">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</td></tr>
<tr><td>Supplementary literature</td><td colspan="2">Harpers Illustrated Biochemistry. Rodwell Victor W. Bender David A. Botham.</td></tr>
<tr><td>eResources addresses</td><td colspan="2">Adresy na platformie eNauczanie:</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="3"></td></tr>
<tr><td>Work placement</td><td colspan="3">Not applicable</td></tr>
</table>

Document generated electronically. Does not require a seal or signature.