

Subject card

Subject name and code	Biochemistry, PG_00188304						
Field of study	Biochemia (Ćw.audytoryjne)						
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		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Bioorganic Chemistry -> Department of Molecular Biochemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Krzysztof Rolka				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	0.0	0.0	0.0	15
	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	15		2.0		8.0	25
Subject objectives	Familiarizing students with the basic groups of endogenous organic compounds; understanding their structure and functions						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[AKRL3_W03] The graduate knows and understands the structure and chemical properties of compounds relevant in forensic examinations.	The student knows the basic groups of endogenous organic compounds (carbohydrates, lipids, proteins, nucleic acids), their structure and their role in metabolic processes. Understands the relationships between chemical structure and biological function of organic compounds in organisms.	[SW4] test/egzamin - ustny lub pisemny [SW1] wypowiedź ustna/rozmowa/ dyskusja
	[AKRL3_W01] The graduate knows and understands, at an advanced level, the laws and theories in the field of chemistry, as well as the basics of biology, mathematics and law constituting general knowledge in the scientific disciplines forming the theoretical foundations relevant to the study program.	The student defines and presents the chemical structure of the basic groups of bio- and macromolecules. Explains their importance for the functioning of the organism. Understands the relationships and dependencies between dietary habits and the physical condition of the body.	[SW4] test/egzamin - ustny lub pisemny [SW1] wypowiedź ustna/rozmowa/ dyskusja
	[AKRL3_U01] The graduate is able to identify, analyse and solve complex research problems in chemistry and forensic science by selecting appropriate methods and information sources.	he student knows the basic techniques of biochemical analysis used in chemical and forensic research. Understands the importance of selecting appropriate analytical methods for solving research problems. Is able to choose suitable methods and sources of information to address complex issues in biochemistry and forensic science. Can critically evaluate the accuracy of obtained data and propose further stages of analysis.	[SU1] wypowiedź ustna/rozmowa/ dyskusja [SU4] test/egzamin - ustny lub pisemny
	[AKRL3_K02] The graduate is ready to make reliable, objective decisions and take responsibility for the interpretation of research results.	The student is able to analyze and interpret the results of biochemical exercises in the context of metabolic processes. They can apply theoretical knowledge to solve practical problems related to biochemistry. The student is prepared to make reliable and objective decisions when interpreting biochemical research results and demonstrates responsibility for the accuracy of conclusions and their significance for subsequent stages of analysis	[SK1] wypowiedź ustna/rozmowa/ dyskusja [SK4] test/egzamin - ustny lub pisemny
Subject contents	Chemical structure, physicochemical properties and biological functions of: proteins, peptides, nucleic acids, lipids, phospholipids, mono- and polysaccharides		
Prerequisites and co-requisites	Organic chemistry (bachelor level), fundamentals of organic chemistry.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	passing two written tests covering the content of the classes	51.0%	100.0%
Recommended reading	Basic literature	J. M. Berg, J. L. Tymoczko, L. Stryer, Biochemia, PWN, Warszawa 2009 and and subsequent editions	
	Supplementary literature	other academic textbooks for biochemistry	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Write the structural formulas of threonine and determine the absolute and relative configuration of the carbon atoms of the isomer present in the protein.Discuss the canonical secondary structures of proteins and the interactions that stabilize them.Using chemical reactions, present the mechanism of lactose hydrolysis in an acidic conditions.Discuss and give examples of passive transport.		
Work placement	Not applicable		

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