University of Gdańsk

Subject card

Subject name and code	Biochemistry, PG_00080718						
Field of study	Chemical Business						
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	4		ECTS credits		1.0		
Learning profile	academic		Assessment form		credit		
Conducting unit							
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	0.0	15.0	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	To teach students how to perform biochemical experiments using delivered instructions.To develop the ability to critically asses and interpret obtained experimental results and analysis of scientificsources.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BCHINŻ_U09] Using the acquired knowledge, skills and various sources of scientific information independently prepares written papers and oral presentations.	Has the ability to predict the course and products of metabolic pathways. Analyzes the results of performed experiments, draws conclusions about the correctness of their course.	[SU2] presentation/project/paper/ report [SU5] implementation of a problem task [SU8] observation of student's independent or team work
[BCHINŻ_U02] Uses basic methods, techniques and tools in formulating and solving engineering tasks in the field of chemistry.	Uses the basic analytical techniques applied for the analysis of endogenous organic compounds.	[SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU5] implementation of a problem task [SU8] observation of student's independent or team work
[BCHINŻ_U03] Plans, selects the appropriate research and measuring equipment and performs simple chemical experiments; analyses the results and draws conclusions based on them.	Designs and performs simple biochemical experiments, using appropriate laboratory equipment.	[SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU5] implementation of a problem task [SU8] observation of student's independent or team work
[BCHINŻ_K02] Works individually demonstrating initiative and independence in actions, and effectively cooperates in a team, performing various roles in it.	Appreciates the need of ability to team work according to assigned role (team leader/team member). Shows cautious criticism when acquiring knowledge, especially these coming from mass media.	[SK2] presentation/project/paper/ report [SK3] text preparation/written work [SK8] observation of student's independent or team work
[BCHINŻ_U08] Uses the chemical nomenclature and engineering terminology properly.	Uses chemical terminology necessary to present (both in oral and written form) the content presented in the course.	[SU2] presentation/project/paper/ report [SU3] text preparation/written work [SU8] observation of student's independent or team work
[BCHINŻ_K03] Independently sets or implements a set action plan specifying priorities for its implementation; critically assesses its progress.	Understands the need of continuous education. Is aware of the need of critical analysis of own work. Is aware of the necessity of fair and reliable work	[SK2] presentation/project/paper/ report [SK3] text preparation/written work [SK8] observation of student's independent or team work
[BCHINŻ_W07] Describes the construction and operating principles of basic scientific, technological and control-measuring apparatus.	Defines and demonstrates chemical structure of basic groups of bio- and macromolecules Defines and demonstrates chemical structure of basic groups of bio- and macromolecules. Describes and illustrates main metabolic pathways using chemical reactions, explains their importance for the body functioning. Characterizes basic analytical methods of endogenous, organic compounds. Characterizes methods of determination of enzymatic activity of selected proteases. Recognizes basic laboratory equipment	[SW2] presentation/project/paper/ report [SW3] text preparation/written work [SW5] implementation of a problem task
[BCHINŻ_K04] Demonstrates responsibility for the safety of her/ his own and others' work.	Takes care of laboratory equipment. Carefully uses laboratory equipment and works cautiously with chemicals.	[SK2] presentation/project/paper/ report [SK5] implementation of a problem task [SK8] observation of student's independent or team work

Subject contents

Performing three exercises/experiments covering the following topics: activity markingenzymatic analysis ofserine proteinases and their inhibitors and chromogenic substrates, determination of kinetic parameters of aselected chromogenic substrate, use of molecular filtration chromatography for protein analysis,chromatographic analysis of phospholipids, testing of the susceptibility of polysaccharides to hydrolysisunder low pH conditions.

Prerequisites and co-requisites	Organic chemistry (bachelor level), basic knowledge of organic chemistry, skills work in a chemical laboratory, knowledge ofbasic laboratory glassware, learning the principles work in a biochemical laboratory

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
three entrance tests, assessment of student work and positive assessment of laboratory reports	51.0%	100.0%

Recommended reading

Basic literature	Instructions for laboratory exercises prepared by the Department's employees are available in electronic form on the Faulty's website.
Supplementary literature	J. M. Berg, J. L. Tymoczko, L. Stryer, Biochemia, PWN, Warszawa2009 and subsequent editions also other academic textbooks for biochemistry
eResources addresses	

Example issues/ example questions/ tasks being completed	Discuss the types of column liquid chromatography used in the analysis of biomolecules.Describe the method of determining trypsin activity used during classes.
Work placement	Not applicable

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