University of Gdańsk

Subject card

Subject name and code	Modern methods in biochemical analysis, PG_00154547		
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 Optional subject group 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	credit
Conducting unit	Laboratory of Microbial Biochemistry -> Department of General and Medical Biochemistry -> Faculty of Biology -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Dorota Kuczyńska-Wiśnik	
	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	3.0	32.0	50

Subject objectives	Acquiring the ability to design experiments using known methods of biochemical analysis and interpretation of results

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BIOLMEDL3_U10] learns independently and in a focused manner, and is able to set priorities and organise the work of a small team, as well as work effectively within a team	learns to independently design experiments and interpret the results in a targeted manner	[SU3] text preparation/written work [SU4] test/exam - oral or written
[BIOLMEDL3_K01] is aware of the importance of lifelong learning and keeping up to date with developments in medical biology and related disciplines, and applies this knowledge to the planning and design of professional activities	understands the need for lifelong learning and updating knowledge in the field of medical biology and related disciplines	[SK1] oral statement/conversation/ discussion [SK8] observation of student's independent or team work
[BIOLMEDL3_U08] is able to give oral presentations in Polish or English on specific topics in medical biology and can use specialist medical biology terminology in a way that is clear and accessible to both specialists and non-specialists	has the ability to give oral presentations in Polish on specific issues related to the use of the discussed methods	[SU1] oral statement/conversation/ discussion
[BIOLMEDL3_W10] has an advanced understanding of the principles of assessing processes and phenomena occurring within the body, using physical or chemical measurements, and possesses advanced knowledge of experimental methods and the key techniques of the biological sciences that may be applied in medical biology and diagnostics	lists the most important techniques used in protein analysis, explains the theoretical basis of these methods and indicates their application in medical biology and diagnostics	[SW4] test/exam - oral or written
[BIOLMEDL3_W08] has an advanced understanding of the development and current state of knowledge and the latest trends in medical biology; indicates their relationship with other disciplines of natural or medical sciences	is familiar with the development and current state of knowledge and the latest trends in the field of biochemical analysis methods used in medical biology; indicates their relationship with other disciplines of natural or medical sciences	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
[BIOLMEDL3_U04] synthesises data from different sources and draws appropriate conclusions from them	synthesizes data from various sources and draws appropriate conclusions on this basis	[SU1] oral statement/conversation/ discussion
[BIOLMEDL3_K02] is aware of their own limitations and knows when to turn to experts who have the resources, technologies and knowledge to provide certainty on a given topic, save time and avoid mistakes	is aware of his own limitations and knows when to turn to experts	[SK8] observation of student's independent or team work

Subject contents

The aim of the exercises is to expand students' knowledge regarding the scope of application of the discussed techniques. Based on current scientific publications, exemplary applications of selected techniques in cognitive and diagnostic research will be discussed.

Prerequisites and co-requisites

general and analytical chemistry; organic chemistry; knowledge of the structure and function of proteins and nucleic acids as well as basic biological processes occurring in the cell

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
test 2	51.0%	40.0%
term work	51.0%	20.0%
test 1	51.0%	40.0%

Recommended reading

Basic literature	Kraj A., Drabik A., Silberring J. (2010) Proteomika i metabolomika, Wydawnictwa Uniwersytetu Warszawskiego and articles in specialized journals
Supplementary literature	articles in specialized journals
eResources addresses	

Example issues/ example questions/ tasks being completed

Work placement	Not applicable

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