

Subject card

Subject name and code	Analysis of dietary supplements and food additives, PG_00121225						
Field of study	Chemical Business, Chemistry, Environmental Protection						
Date of commencement of studies	October 2026	Academic year of realisation of subject			2027/2028		
Education level	Master's studies	Subject group			Optional subject group		
Mode of study	full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			English		
Semester of study	3	ECTS credits			4.0		
Learning profile	academic	Assessment form			credit		
Conducting unit	Department of Environmental Analysis -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Monika Paszkiewicz				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	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		5.0		65.0	100
Subject objectives	Introduction to the main groups of compounds in dietary supplements and foods for special purposes, introduction to the development of methods for the determination, extraction and purification of components of dietary supplements, fortified foods and foods for special purposes, selection of an appropriate analytical technique for the assessment of the composition and safety of dietary supplements, fortified foods and foods for special purposes, step-by-step design of the analytical process; acquisition of the ability to develop a method for a specific purpose						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[CHEMMU2_U04] Applies acquired knowledge of chemistry and related scientific disciplines.	- is able to plan a complex analytical procedure to analyze the composition of dietary supplements/food additives - has acquired the ability to evaluate the quality of their own or others' analytical results	[SU2] presentation/project/paper/report
	[CHEMMU2_K06] Undertakes research tasks consciously and responsibly, understanding the social aspects of the practical application of the acquired knowledge and skills and the responsibility related to it.	- show responsibility for the results of teamwork - are responsible for the safety of his own work and that of others: knows how to act in situations of danger, is careful when handling chemical substances, is careful when handling measuring instruments	[SK8] observation of student's independent or team work
	[CHEMMU2_K05] Understands the need for independent search of information in scientific literature and popular science magazines.	- promotes the importance of mathematical sciences in explaining many phenomena and processes - exhibit creativity in identifying the main issues necessary to understand the various responsibilities	[SK2] presentation/project/paper/report
	[CHEMMU2_U03] Finds necessary information in specialist literature, databases and other sources, lists basic scientific journals in chemistry.	- is able to select extraction methods in regards to the physicochemical properties of the analyte and the specific analytical problem - is able to select analytical techniques in regard to the physicochemical properties of the analyte and the specific analytical problem	[SU2] presentation/project/paper/report [SU8] observation of student's independent or team work
	[CHEMMU2_K01] Knows the limitations of her/his own knowledge; understands the need for further education and can inspire other people to do so.	- understand the social aspects of the practical application of knowledge and skills and the related responsibilities - understand the need for further education	[SK8] observation of student's independent or team work
	[CHEMMU2_W03] Demonstrates extended knowledge in the field of modern measuring techniques used in chemical analysis.	- has knowledge of the composition of dietary supplements, fortified foods and special purpose foods - has knowledge of the main food additives and the purpose and rules of their use - is familiar with the provisions of the legal regulations on the introduction of the above foodstuffs into commerce - can explain the principles of modern analytical techniques and their usefulness in specific analytical tasks; - has knowledge of the identification of compounds in samples with complex matrix composition - has knowledge of quality control and validation in connection with the planning and execution of chemical analysis - has acquired knowledge of methods for extracting analytes from samples with complex matrix composition such as dietary supplements, fortified and specialty foods - has knowledge of the application of analytical techniques in the analysis of food supplements and additives	[SW4] test/exam - oral or written [SW2] presentation/project/paper/report

Subject contents	Major groups of compounds in dietary supplements and special purpose foods: vitamins, minerals, proteins, unsaturated fatty acids, undeclared pharmacologically active substances. Major compounds used as food additives preservatives, antioxidants and acidity regulators, emulsifiers. Methods for extracting compounds from dietary supplements and food additives. Application of gas chromatography, liquid chromatography, mass spectrometry, UV-Vis spectrophotometry to analyze the composition of dietary supplements and identify food additives. Design of the whole analytical procedure. Qualitative and quantitative analysis, validation of analytical methods. Limitations of analytical approaches in real life scenarios.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Reports	51.0%	50.0%
	Tests during laboratory classes	51.0%	50.0%
Recommended reading	Basic literature	Materials will be available for students during the course.	
	Supplementary literature	Review articles in the field of analytics of dietary supplements and food additives will be available during the course.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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