

Subject card

Subject name and code	Food analysis, PG_00082059						
Field of study	Chemistry						
Date of commencement of studies	October 2026		Academic year of realisation of subject			2028/2029	
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	3		Language of instruction			Polish	
Semester of study	5		ECTS credits			2.0	
Learning profile	academic		Assessment form			exam	
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	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		5.0		15.0	50
Subject objectives	- To familiarise students with the techniques used in food analysis - To introduce students to the basics of calculations necessary for the correct interpretation of analytical results, - To acquire the ability to independently select the appropriate analytical technique for the objective set.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[CHEML3_K01] Identifies the level of her/his own knowledge and skills and the need for continuous learning and personal development.	- Understands the need for further training	[SK8] observation of student's independent or team work
	[CHEML3_W10] Enumerates and describes the basic aspects of the construction, operation and use of measuring apparatus and equipment used in experimental works in the field of chemistry and related sciences.	- Understands the main objectives and importance of food analysis - Knows the basic principles of sampling and sample preparation for food analysis food analysis - Knows and describes the methods of determining the main nutrients and food additives - Understands and describes methods of determining food contaminants and food adulteration - Knows and describes methods of determining selected carcinogenic and anticancer compounds present in food products	[SW4] test/exam - oral or written
	[CHEML3_W08] Demonstrates knowledge of basic computational methods to solve problems in chemistry, physics, mathematics.	- Knows with quantitative analysis methods - Understands basic food quality control and assessment issues	[SW4] test/exam - oral or written
	[CHEML3_U05] Uses basic statistical methods and IT techniques to describe chemical processes and analyse experimental data.	- Evaluates the results obtained using basic statistical tools	[SU2] presentation/project/paper/report
Subject contents	Scope and importance of food analysis. Principles of sampling and preparation of samples for food analysis. Chemical, instrumental and sensory analysis techniques used to control and assess food quality. Methods of determination of basic food ingredients and food additives. Methods of detecting food adulteration and contamination. Methods for the determination of selected carcinogenic and anticancer compounds in food products. Examples of the use of chromatographic, spectrophotometric and mass spectrometric methods for food analysis. Quality assessment of raw materials and food products. Preparation, statistical evaluation and interpretation of analytical results. Problems of laboratory exercises: Preparation of food samples for specific analysis. Qualitative and quantitative analysis using chemical methods and instrumental methods such as gas chromatography, high-performance liquid chromatography and UV/Vis spectroscopy for food analysis. Practical application of selected sensory analysis methods to assess the quality of food products.		
Prerequisites and co-requisites	General chemistry, organic chemistry, inorganic chemistry, analytical chemistry. Knowledge of basic general chemistry, organic chemistry, inorganic chemistry and the main concepts of microbiology. Theoretical basis of the main analytical techniques (chemical and instrumental).		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Written exam covering the material studied during the lectures and laboratory exercises (open and test questions)	51.0%	100.0%
Recommended reading	Basic literature	Kumirska J., Gołębiowski M., Paszkiewicz M., Bychowska A. Food analysis, UG Publisher, Gdańsk 2010	
	Supplementary literature	Edited by Klepacka M. Food analysis, SGGW Development Foundation, Warsaw, 2005. Edited by Małecka M. Selected methods of food analysis, Published by the Academy of Economics in Poznań, Poznań, 2003. Edited by Sikorski Z.E. Food Chemistry, 5th Edition, WNT, Warsaw, 2007.	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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