

Subject card

Subject name and code	Food Chemistry, PG_00081946						
Field of study	Chemistry						
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 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	4		ECTS credits			3.0	
Learning profile	academic		Assessment form			exam	
Conducting unit	Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Jolanta Kumirska				
	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		40.0	75
Subject objectives	Presentation of knowledge concerning on the chemical composition of food and the structure of the main food raw materials, with particular emphasis on the chemical structure, physico-chemical properties and the broadly understood functions of nutrients, food additives and other compounds that shape the health quality of food products.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[CHEML3_U01] Identifies, analyses and solves problems in the field of broadly understood chemistry on the basis of the acquired knowledge.	Discusses issues related to food chemistry. Can explain some of the changes that occur during the storage and processing of raw materials and food products	[SU4] test/exam - oral or written [SU8] observation of student's independent or team work
	[CHEML3_K07] Appreciates the need for understandable presentation of selected chemical issues to the public.	Student needs further education. Appreciates the need to present selected issues in the field of food chemistry in an accessible way.	[SK4] test/exam - oral or written [SK8] observation of student's independent or team work
	[CHEML3_W05] Has basic knowledge of the chemical specialisation studied.	Student explains some of the changes that occur during storage and processing of raw materials and food products. Student describes the role of individual components in creating features sensory food products. Student illustrates the functional impact of selected food processing parameters properties of food ingredients	[SW4] test/exam - oral or written
	[CHEML3_K08] Formulates opinions in the field of science with caution and criticism in their expression.	Students formulates opinions in the field of food chemistry while expressing them carefully and critically.	[SK4] test/exam - oral or written
	[CHEML3_U02] Performs analyses using experimental methods and draws conclusions based on them.	Demonstrates the ability to detect and label basic food ingredients, selected food contaminants and some food adulterants.	[SU4] test/exam - oral or written
	[CHEML3_U03] Selects the appropriate equipment and laboratory apparatus for conducting uncomplicated chemical experiments.	Selects appropriate equipment and follows established procedures during analyzing the composition of raw materials for food production and the quality of food products	[SU4] test/exam - oral or written
Subject contents	[CHEML3_W03] Explains the relationship between the structure of matter and its observed properties.	Student knows the most important food ingredients that shape the quality of products nutritional. Student describes the physical, chemical and biological properties of food ingredients, food additives and food contamination.	[SW4] test/exam - oral or written
	A. Topics of the lecture Chemical composition of food. Physical, chemical and biological properties of food ingredients, food additives and food contamination. Transformation of these compounds during storage and processing of raw materials and food products. The role of individual components in creating sensory attributes of food products. Understanding some of the mechanisms and effects of chemical and biochemical reactions taking place in food on the sensory properties and health quality of food products.		
Prerequisites and co-requisites	lack Convergent to: organic chemistry, analytical chemistry		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	sum of points from the written exam covering the scope of material covered during lectures and laboratory exercises, including an assessment of the student's activity during the lecture (max. 10%)	51.0%	100.0%

Recommended reading	Basic literature	Praca zbiorowa pod redakcją Sikorski Zdzisław E. Chemia Żywności, Wyd. 6, WNT, Warszawa, 2012. Praca zbiorowa pod redakcją Górską Agata, Łobacz Marta, Ćwiczenia laboratoryjne z chemii żywności Wydawnictwo SGGW, 2009. Rutkowska Jarosława, Przewodnik do ćwiczeń z chemii żywności. Wydawnictwo SGGW, Warszawa 2008. Zdzisław Sikorski, Hanna Staroszczyk, Chemia żywności Tom 1 Główne składniki żywności, Wydawnictwo Naukowe PWN, Warszawa, 2017. Hanna Staroszczyk, Zdzisław Sikorski, Chemia żywności Tom 2 Biologiczne właściwości składników żywności. Wydawnictwo Naukowe PWN, Warszawa, 2017. Agata Witczak, Zdzisław E. Sikorski. Szkodliwe substancje w żywności Pochodzenie, działanie, zagrożenia zdrowotne. Wydawca: PWN, 2020.
	Supplementary literature	Śmiechowska Maria, Przybyłowski Piotr, Chemia żywności z elementami biochemii. Wydaw. Akademii Morskiej w Gdyni, Gdynia 2004. Grajek Włodzimierz; Baer-Dubowska Wanda Przeciwtłeniacze w żywności : aspekty zdrowotne, technologiczne, molekularne i analityczne. Wydawnictwa Naukowo-Techniczne, Warszawa 2007. Małecka Maria (red.), Wybrane metody analizy żywności, Wydawnictwo Akademii Ekonomicznej w Poznaniu, Poznań, 2003.
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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