University of Gdańsk

Subject card

Subject name and code	Food Chemistry, PG_00081946		
Field of study	Chemistry		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2025/2026
Education level	Bachelor's studies	Subject group	Obligatory subject group 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

Additional information:

Lecture with multimedia presentation

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_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
[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
[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_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_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_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_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

Subject contents

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 Górska 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 Przeciwutleniacze 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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