University of Gdańsk

Subject card

Subject name and code	Food chemistry, PG_00080778						
Field of study	Chemical Business						
Date of commencement of studies	October 2025		Academic year of realisation of subject	2027/2028			
Education level	Bachelor's studies		Subject group	Obligatory subject group in the field of study 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	1.0			
Learning profile	academic		Assessment form	credit			
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	15.0	0.0	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		2.0		8.0	25
Subject objectives	To introduce students knowledge on the chemical composition of food and the structure of the main food raw materials, as well as the 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
[BCHINŻ_K04] Demonstrates responsibility for the safety of her/ his own and others' work.	Student demonstrates responsibility for the safety of her/ his own and others' work, student is careful working with chemicals and is prudent working with scientific equipment during laboratory classes.	[SK4] test/exam - oral or written [SK8] observation of student's independent or team work
[BCHINŻ_U03] Plans, selects the appropriate research and measuring equipment and performs simple chemical experiments; analyses the results and draws conclusions based on them.	Student follows established procedures during analyses of the composition of raw materials for food production and the quality of food products. Students analyses the results and draws conclusions based on them.	[SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[BCHINŻ_W06] Enumerates basic unit processes and describes issues in the field of technology and chemical engineering.	Student knows the most important food ingredients twhich influence on the quality of products nutritional; describes their physical, chemical and biological properties. Student explains selected basic transformations occuring during storage and processing of raw materials and food products.	[SW4] test/exam - oral or written
[BCHINŻ_W07] Describes the construction and operating principles of basic scientific, technological and control-measuring apparatus.	Students describes the construction and operating principles of selected control-measuring apparatus used in food chemistry.	[SW4] test/exam - oral or written
[BCHINŻ_U08] Uses the chemical nomenclature and engineering terminology properly.	Student discusses issues related to food chemistry using actually chemical nomenclature and engineering terminology.	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
[BCHINŻ_K02] Works individually demonstrating initiative and independence in actions, and effectively cooperates in a team, performing various roles in it.	Student demonstrates responsibility for the results of the team's work.	[SK4] test/exam - oral or written [SK8] observation of student's independent or team work

Subject contents

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
the sum of points from a written test 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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