



Subject card

Subject name and code	Instrumental Techniques for Food Analysis, PG_00037436						
Field of study	Biotechnology						
Date of commencement of studies	October 2020	Academic year of realisation of subject				2023/2024	
Education level	first-cycle studies	Subject group				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	4	Language of instruction				Polish	
Semester of study	7	ECTS credits				1.0	
Learning profile	general academic profile	Assessment form				assessment	
Conducting unit	Department of Chemistry, Technology and Biochemistry of Food -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Dorota Martysiak-Żurowska				
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	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		1.0		9.0	25
Subject objectives	Practical application of instrumental techniques in food analysis.						
Learning outcomes	Course outcome		Subject outcome			Method of verification	
	K6_U09						
	K6_U01						
	K6_W09						
Subject contents	The identification and quantitative determination of the fatty acid composition of the vegetable oils by applying gas chromatography GLC. Determination of the solid fat content of fats using the pulsed NMR method. Investigation of phase and polymorphic changes and determination of the oxidative stability of edible fats using the DSC. Speectrophotometric determination of natural pigments in foods. Analyzing the rheological properties of food using the viscosimetric method. Validation of the analytical method.						
Prerequisites and co-requisites	Fundamentals and applications of chromatography and spectrophotometric methods. The structure of main food components.						
Assessment methods and criteria	Subject passing criteria		Passing threshold			Percentage of the final grade	
	Theoretical knowledge		60.0%			45.0%	
	Participation in didactic classes		90.0%			10.0%	
	Self-study, preparation of the report		60.0%			45.0%	
Recommended reading	Basic literature		<p>Szczepaniak W. Metody Instrumentalne w Analizie Chemicznej. PWN, Warszawa, 2004.</p> <p>Witkiewicz Z. Podstawy Chromatografii. WNT, Warszawa, 2000.</p> <p>Ötles S. (Ed): Handbook of Food Analysis Instruments. CRC Press. Boca Raton, FL, 2008.</p>				

	Supplementary literature	<p>Chemia żywności. pod red. ZE Sikorski, H.Storoszczyk</p> <p>Alli I.: Food Quality Assurance: Principles and Practices. CRC Press. Boca Raton, FL, 2003.</p> <p>Nolle L.M.L.: Handbook of Food Analysis: Physical Characterization and Nutrient Analysis. Marcel Dekker, USA, 2004.</p>
	eResources addresses	
Example issues/ example questions/ tasks being completed	<p>Determination of the solid fat content of fats using the pulsed NMR method.</p> <p>Analysis of the content of secondary lipid oxidation products in food products by HPLC technique.</p>	
Work placement	Not applicable	