



Subject card

Subject name and code	Instrumental methods in analytical chemistry, PG_00048991						
Field of study	Corrosion						
Date of commencement of studies	February 2024	Academic year of realisation of subject			2024/2025		
Education level	second-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	1	Language of instruction			Polish		
Semester of study	2	ECTS credits			4.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Analytical Chemistry -> Faculty of Chemistry						
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. inż. Piotr Konieczka					
	Teachers						
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	0.0	45
	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	45		10.0		45.0	100
Subject objectives	The analytical process, instrumental analytical methods (direct and indirect methods); theoretical basis and description of selected instrumental analytical techniques (spectroscopic techniques; chromatographic techniques and related, electroanalytical techniques).						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_U01	Can obtain an information from the literature, databases, and other, properly selected sources			[SU4] Assessment of ability to use methods and tools [SU1] Assessment of task fulfilment [SU3] Assessment of ability to use knowledge gained from the subject		
	K7_W04	Has a basic knowledge about methods of measurement applicable to studies of corrosive			[SW3] Assessment of knowledge contained in written work and projects		
	K7_K01	Understands the need to teach			[SK2] Assessment of progress of work [SK5] Assessment of ability to solve problems that arise in practice		
Subject contents	Flame photometry, ASA, GC, TLC and LC, Elektroanalityczne, calibration Techniques, QA/QC						
Prerequisites and co-requisites	Basic knowledge of analytical chemistry on the theory of instrumental methods of analysis.						
Assessment methods and criteria	Subject passing criteria	Passing threshold			Percentage of the final grade		
	lecture	60.0%			40.0%		
	laboratory	60.0%			60.0%		

Recommended reading	Basic literature	1. A. Cygański, Metody spektroskopowe w chemii analitycznej, WNT, Warszawa, 2002. 2. Z. Witkiewicz, J. Hepter, Chromatografia gazowa, WNT, Warszawa, 2009. 3. W. Szczepaniak, Metody instrumentalne w analizie chemicznej, PWN, Warszawa 2008.
	Supplementary literature	Literature of the subject of analytical instrumental methods
	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed	<ol style="list-style-type: none"> 1. What characterizes a reliable analytical result? 2. Specify the range of applications of Certified Reference Materials. 3. Point out the systems for inserting the sample into the chromatographic column. 4. What determines the elution sequence in the case of the liquid chromatography technique in the reversed phase system. 5. Give the characteristics of the conductivity technique. 	
Work placement	Not applicable	