University of Gdańsk

Subject card

Subject name and code	Industrial analysis, PG_00080693						
Field of study	Chemical Business						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2027/2028		
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	4		Language of instruction		Polish		
Semester of study	7		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Department of Analytical Chemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Dorota Zarzeczańska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	30.0	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		15.0	50
Subject objectives	familiarizing students with the basic groups of industrial analyses familiarizing students with the basic methods of collecting and preparing samples for analysis in industrial plants teaching students to independently (using the descriptions contained in the instructions) conduct basic analyzes used in various fields of industry developing the ability to critically evaluate and interpret the obtained experimental results and analyze source texts						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[BCHINŻ_W06] Enumerates basic unit processes and describes issues in the field of technology and chemical engineering.	lists and characterizes techniques for collecting and analyzing samples in industrial plants	[SW4] test/exam - oral or written
[BCHINŻ_W07] Describes the construction and operating principles of basic scientific, technological and control-measuring apparatus.	describes and illustrates the basic equipment used in industrial analyses	[SW4] test/exam - oral or written
[BCHINŻ_U08] Uses the chemical nomenclature and engineering terminology properly.	uses chemical terminology to the extent necessary to present (in written and oral form) the course content	[SU4] test/exam - oral or written
[BCHINŻ_U02] Uses basic methods, techniques and tools in formulating and solving engineering tasks in the field of chemistry.	1. uses basic analytical techniques used in industrial plants 2. designs and performs simple analytical experiments, receiving equipment	[SU2] presentation/project/paper/ report [SU8] observation of student's independent or team work
[BCHINŻ_W03] Describes the techniques of higher mathematics and IT tools necessary to describe and model chemical phenomena and technological processes.	predicts analytical processes and calculates analytical results	[SW2] presentation/project/paper/ report
[BCHINŻ_W05] Describes the life cycle of devices, facilities and technical systems as well as modern environment-friendly technical solutions.	understands the need to apply safety and ergonomics principles industrial analytical laboratories	[SW4] test/exam - oral or written
[BCHINŻ_U01] On the basis of the acquired knowledge, identifies, analyses and solves engineering tasks and problems in broadly understood chemistry.	analyzes the results of experiments and draws conclusions regarding the correctness of their course	[SU2] presentation/project/paper/ report
[BCHINŻ_U05] Evaluates the usefulness and functioning of existing engineering and technical solutions as well as research and measurement methods in the chemical industry.	analyzes the results of experiments and draws conclusions regarding the correctness of their course	[SU2] presentation/project/paper/ report

Subject contents

Carrying out five exercises/experiments covering the following issues: determination of the content of unburnt parts in quicklime - gasometric analysis, determination of active lime in construction lime, determination of light impurities in construction aggregates, analysis of mixing water, determination of the foaming properties of shampoo or surface-active raw material, determination of the ability to emulsification, extraction and weight determination of the raw fat content in food products, determination of the acid number, peroxide number, saponification number, determination of the active oxygen content in cleaning products, determination of the content of complexing substances in cleaning products.

Prerequisites and co-requisites

-analytical chemistry course

-basic knowledge of analytical chemistry, ability to work in a chemical laboratory, knowledge of basic laboratory glassware, learning the principles of work in an analytical laboratory

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
five tests	51.0%	50.0%
five reports	51.0%	25.0%
completing five exercises	80.0%	25.0%

Recommended reading

Basic literature

1. D. A. Skoog, D. M. West, F. J. Holler, S. R. Crouch, Podstawy chemii analitycznej, Tom 2,PWN, Warszawa 2007

2. A. Cygański, Metody spektroskopowe w chemii analitycznej, WNT, Warszawa 2009

3. W. Szczepaniak, Metody instrumentalne w analizie chemicznej, PWN, Warszawa 20084. Z. Witkiewicz, Podstawy chromatografii, WNT, Warszawa, 2005

	Supplementary literature	1. L. Czarnecki i inni Chemia w budownictwie Arkady Warszawa 1996 2. E. Szczepaniec-Cięciak Chemia Środowiska, Kraków 1999S. Mercik Chemia rolna SGGW Warszawa 2002
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

Document generated electronically. Does not require a seal or signature.