University of Gdańsk

Subject card

Subject name and code	Chemistry in Earth Sciences - laboratory classes, PG_00193054						
Field of study	Geology						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2026/2027			
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	1		Language of instruction	Polish			
Semester of study	1		ECTS credits	3.0			
Learning profile	academic		Assessment form	credit			
Conducting unit	Division of Didactics and Popular Science -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Małgorzata Czaja				
	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		40.0	75
Subject objectives	Enabling students to practically apply theoretical chemical knowledge acquired during lectures. Developing practical skills. Understanding chemical processes. Learning how to handle chemicals safely. Critical thinking and data analysis. Scientific methodology.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[GEOLL3_W02] knows and understands the terminology appropriate in science and natural sciences	Uses the correct nomenclature of chemical compounds. Understands chemical laws and concepts.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW3] text preparation/written work
[GEOLL3_K05] is willing to comply with the principles of occupational safety and health, takes care of specialized equipment entrusted to them, is aware of the risk connected with the performed work	Uses laboratory equipment and chemical reagents safely and correctly.	[SK4] test/exam - oral or written [SK8] observation of student's independent or team work
[GEOLL3_W01] knows and understands the basic natural phenomena and explains their course in relation to geological processes	Understands chemical concepts and theories. Has knowledge about the properties of substances.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion [SW3] text preparation/written work
[GEOLL3_W08] knows the basic principles of occupational health and safety, legal regulations conditioning geological and engineering activities	Uses laboratory equipment and chemical reagents safely and correctly.	[SW4] test/exam - oral or written [SW1] oral statement/ conversation/discussion
[GEOLL3_U02] has the skill of analytical and synthetic way of reasoning leading to correct inference based on the results obtained or the facts presented	Collects experimental data. Analyzes the results of experiments and interprets them.	[SU1] oral statement/conversation/ discussion [SU3] text preparation/written work [SU4] test/exam - oral or written [SU8] observation of student's independent or team work
[GEOLL3_U01] is able to apply basic measurement and analytical techniques in the field and in the laboratory, plans to conduct research and measurements	Conducts laboratory procedures such as filtration, distillation, crystallization, extraction, etc.	[SU4] test/exam - oral or written [SU8] observation of student's independent or team work

Subject contents

Application of basic measurement and analytical techniques used in natural conditions. Planning and carrying out physical and chemical observations and measurements in the laboratory and interpreting their results. Developing correct observation and drawing conclusions.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
report	51.0%	10.0%
test	51.0%	90.0%

Recommended reading

Basic literature	Collective work, UG script. Laboratory exercises in general chemistry. I. Theoretical part Collective work, UG script. Laboratory exercises in general chemistry. II. Experimental part Jones, P. Atkins, 2004. General Chemistry. Particles, matter, reactions, Ed. Scientific PWN, Warsaw
Supplementary literature	Bielański A., 1994. Basics of inorganic chemistry, Ed. Scientific PWN, Warsaw
eResources addresses	

Example issues/ example questions/ tasks being completed

Methods of isolating and purifying substances. Proper solutions. Kinetics of chemical reactions. Chemical balance. Electrolytes and non-electrolytes. Degree of dissociation. Concentration of hydrogen ions in aqueous solutions. pH indicators. Protolytic reactions of ions in aqueous solution.

Work placement

Not applicable

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