University of Gdańsk

Subject card

Subject name and code	Chemistry in Earth Sciences - exercises, PG_00054153		
Field of study	Geology		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
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	dr Małgorzata Czaja	

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

Additional information:

Performing chemical experiments

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	20.0	25.0	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.

<table>
<tr><td>Learning outcomes</td><td>
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<tr><th>Course outcome</th><th>Subject outcome</th><th>Method of verification</th></tr>
<tr><td>[GEOLL3_U01] is able to apply basic measurement and analytical techniques in the field and in the laboratory, plans to conduct research and measurements</td><td>Conducts laboratory procedures such as filtration, distillation, crystallization, extraction, etc.</td><td>[SU4] test/exam - oral or written
[SU8] observation of student's independent or team work</td></tr>
<tr><td>[GEOLL3_W01] knows and understands the basic natural phenomena and explains their course in relation to geological processes</td><td>Understands chemical concepts and theories. Has knowledge about the properties of substances.</td><td>[SW4] test/exam - oral or written
[SW1] oral statement/ conversation/discussion
[SW3] text preparation/written work</td></tr>
<tr><td>[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</td><td>Collects experimental data. Analyzes the results of experiments and interprets them.</td><td>[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</td></tr>
<tr><td>[GEOLL3_W02] knows and understands the terminology appropriate in science and natural sciences</td><td>Uses the correct nomenclature of chemical compounds. Understands chemical laws and concepts.</td><td>[SW4] test/exam - oral or written
[SW1] oral statement/ conversation/discussion
[SW3] text preparation/written work</td></tr>
<tr><td>[GEOLL3_W08] knows the basic principles of occupational health and safety, legal regulations conditioning geological and engineering activities</td><td>Uses laboratory equipment and chemical reagents safely and correctly.</td><td>[SW4] test/exam - oral or written
[SW1] oral statement/ conversation/discussion</td></tr>
<tr><td>[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</td><td>Uses laboratory equipment and chemical reagents safely and correctly.</td><td>[SK4] test/exam - oral or written
[SK8] observation of student's independent or team work</td></tr>
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<tr><td>Subject contents</td><td>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.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>test</td><td>51.0%</td><td>100.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>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</td></tr>
<tr><td>Supplementary literature</td><td>Bielański A., 1994. Basics of inorganic chemistry, Ed. Scientific PWN, Warsaw</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
</table>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>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.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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