

Subject card

Subject name and code	The basics of marine environment chemistry - lecture, PG_00054236						
Field of study	Oceanography						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study 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	1		ECTS credits		3.0		
Learning profile	academic		Assessment form		exam		
Conducting unit	Laboratory of Toxic Substances Transformation -> Department of Chemical Oceanography and Marine Geology -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Marta Staniszevska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	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	Presenting basic concepts and terms in the field of general and inorganic chemistry.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	OCEANL3-U01		is able to use current terminology in the field of basic chemistry of the marine environment		[SU4] test/exam - oral or written		
	OCEANL3-W01		knows and understands specialist terminology regarding general and inorganic chemistry at an advanced level		[SW4] test/exam - oral or written		
Subject contents	A.1 Basic chemical concepts and lawsA.2 Modern model of atomic structure and regularities recorded in the periodic table; electron configuration of atoms.A.3 States of matter (gaseous, liquid and solid phases).A.4 Basic groups of inorganic compounds. Properties of oxides, hydrides, acids, bases, salts.A.5 Types of chemical reactions. Speed and equilibrium of chemical reactions.A.6 Discussion of selected elements and chemical compounds occurring in nature and/or having practical importance for humans.A.7 Relationships between the type of chemical bond and the properties of the substance. Electronic and quantum theory of chemical bonds. Intermolecular forces.A.8 Properties of mixtures, dispersion systems, solutions; dissolution, solubility of salts.A.9Equilibrium in electrolyte solutions (theories of acids and bases, electrolytic dissociation, properties of electrolyte solutions; discussion and interpretation of the pH scale, hydrolysis, buffer solutions).A.10 Colloidal systems.A.11 Basics of qualitative and quantitative analysis, classical and instrumental analytical chemistry.						

Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	exam	51.0%	100.0%
Recommended reading	Basic literature	Bielański, Fundamentals of inorganic chemistry, PWN, Warsaw	
	Supplementary literature	Textbooks for general secondary schools and technical schools. Extended scope	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Ability to characterize the model of atomic structure (corpuscular model, wave model). Navigating the regularities resulting from the position of an element in the periodic table. What results from the electronic configuration of atoms. Characteristics of states of matter. Basic groups of inorganic compounds, their formulas, basic properties, practical use or occurrence in nature. Characteristics of basic chemical reactions. Ability to record hydrolysis and dissociation reactions. Ability to characterize basic chemical bonds and intermolecular interactions. What is a dispersion system, solution, colloidal system (examples). Acids and bases, their power. Theory of Arrhenius, Bronsted Lowry.....		
Work placement	Not applicable		

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