

Subject card

Subject name and code	Introduction to environmental photochemistry - laboratory exercises, PG_00159337						
Field of study	Oceanography						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2027/2028		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study 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	3		Language of instruction		Polish		
Semester of study	6		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Marine Environmental Protection -> Department of Chemical Oceanography and Marine Geology -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Waldemar Grzybowski				
	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		20.0	55
Subject objectives	Familiarization with basic methods of examining the impact of solar radiation on the environment						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	OCEANL3-U02		is able to design under the supervision of a research supervisor an experiment aimed at solving a given task (content program: B.1-4)		[SU5] implementation of a problem task		
	[OCEANL3-K06] is willing to use the acquired knowledge in planning and designing professional activities as well as thinking and acting in an entrepreneurial way, also in the field of social activities undertaken		follows the rules of occupational health and safety, takes care of specialist equipment entrusted to him, is aware of the risks resulting from performed task (program content: B.1-4		[SK8] observation of student's independent or team work		
	OCEANL3-U04		can present the results contained in scientific publications English (program content: B.5)		[SU2] presentation/project/paper/report		
	[OCEANL3-K01] is willing to plan and implement, individually or as a team, the subsequent stages of the entrusted task, is willing to take responsibility for the results of these works, effectively cooperates in the team and performs various roles in it		can plan and implement, individually or in a team, assigned tasks, cooperates in the team, performing various roles in it (content program: B.1-4)		[SK8] observation of student's independent or team work		

Subject contents	B. Laboratory issues B.1 solar radiation measurements using broadband sensors; testing the impact of optical filters; measuring and modifying emissions different types of sunlight simulators B.2 construction of a UVVIS spectrophotometer, measurement of optical properties of natural waters B.3 factors affecting the precision and accuracy of absorbance measurement B.4 observations of changes in the optical properties of natural waters under the influence of solar radiation B.5 presentation of a selected problem in the field of optical properties of natural waters based on an English-language scientific publication		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	presentation	51.0%	30.0%
	exam	51.0%	70.0%
Recommended reading	Basic literature	Selected scientific articles on the optical properties of natural waters	
	Supplementary literature	Waldemar Grzybowski - Transformation of dissolved organic matter under the influence of solar radiation, 2006, UG Publishing House, Gdansk	
	eResources addresses		
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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