University of Gdańsk

Subject card

Subject name and code	Phototransformation of Natural Water Constituents - lecture, PG_00204966		
Field of study	Oceanography		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Master'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	1	Language of instruction	English
Semester of study	2	ECTS credits	1.0
Learning profile	academic	Assessment form	exam
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, prof. UG	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	0.0	0.0	15

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	15	1.0	9.0	25

Subject objectives

Familiarization with the influence of solar radiation on substances occurring in the aquatic environment and with methods of examining this influence

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANMU2-W02] knows and understands complex processes and phenomena occurring in the marine environment, with particular emphasis on the coastal zone, as well as complex relationships between living and non-living elements of the aquatic environment	knows the effects of solar radiation on substances found in the aquatic environment	[SW4] test/exam - oral or written

Subject contents

A. Topics of the lecture A.1 properties of solar radiation A.2 primary photochemical reactions in natural waters A.3 secondary chemical reactions in natural waters, impact secondary reaction products to dissolved substances A.4 mechanisms of creating reactive oxygen species and free radicals

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	A. Literature required to finally pass the course (pass the exam): A.1. used during classes A.2. studied independently by the student Zofia Sawicka - Photochemical processes in the environment, 2001, Wydawnictwo UJ, Kraków B.
Supplementary literature	Additional literature Pierre Boule (ed.), Environmental Photochemistry Part I (Handbook of Environmental Chemistry), 1999, Springer, Ber-lin Asa Leifer, The kinetics of environmental aquatic photochemistry, 1988, Oxford University Press, Oxford

	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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