University of Gdańsk

Subject card

Subject name and code	Photodegradation of pharmaceuticalis - lecture, PG_00192686		
Field of study	Marine Biotechnology		
Date of commencement of studies	October 2027	Academic year of realisation of subject	2027/2028
Education level	Master's studies	Subject group	Obligatory subject group in the field of study Optional subject group
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	credit
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. 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

Providing knowledge about the importance of photochemical processes in the purification of natural waters and sewage

Learning outcomes

Course outcome	Subject outcome	Method of verification
[MBMU2-KK01] Is ready to critically evaluate his knowledge and continuously improve, update and upgrade his skills in the field of marine biotechnology	Is ready to critically evaluate his knowledge and constantly improve and update it	[SK1] oral statement/conversation/ discussion
[MBMU2-KU03] Can use and critically analyze available scientific information; can prepare and present - orally or in writing - a paper covering detailed problems in the field of marine biotechnology on the basis of the scientific information or their own work, with the use of scientific language, including specialized terminology and conceptual apparatus; has the ability to conduct discussions	Is able to use and critically analyze scientific publications in the field of environmental photochemistry	[SU1] oral statement/conversation/ discussion
[MBMU2-KW04] Knows and deeply understands advanced research methods used in marine biotechnology and related sciences	Knows and understands photochemical processes in the aquatic environment	[SW4] test/exam - oral or written

Subject contents

Basics of photochemistry - the impact of solar radiation on pharmaceuticals in seawater - wastewater treatment from pharmaceuticals supported by photodegradation

Prerequisites and co-requisites

<table>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>exam</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>The effects of UV radiation in the marine environment (s. de Mora, S. Demers, M. Vernet, Eds.), Cambridge University Press, Cambridge 2000.</td></tr>
<tr><td>Supplementary literature</td><td>Photocatalytic Detoxication of Polluted Waters. In Environmental Photochemistry (P. Boule, Ed.), Springer-Verlag, Berlin 1999.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2"></td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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