

Subject card

Subject name and code	Marine natural products - lecture, PG_00054201						
Field of study	Marine Biotechnology						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Master'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		English		
Semester of study	1		ECTS credits		2.0		
Learning profile	academic		Assessment form				
Conducting unit	Laboratory of Marine Biotechnology -> Department of Marine Biology and Biotechnology -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Hanna Mazur Marzec				
	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		20.0	55
Subject objectives	Acquisition by student knowledge on the main producers of bioactive marine products (MNPs), structure, activity and biotechnological potential of MNPs (KW_01).						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[MBMU2-KW01] Knows and broadly understands the value of natural marine resources		KW_01 Student possesses knowledge about the diversity and biotechnological potential of marine natural products		[SW4] test/exam - oral or written		
Subject contents	Historical background and branches of marine biotechnology, main producers of biotechnologically important MNPs, natural and alternative sources of bioproducts, structural diversity of MNP, low value MNPs (food, feed and energy) and high added value MNPs (enzymes, drugs, cosmeceuticals, nutraceuticals, functional food, food supplements, pigments, biomaterials, antifouling agents), from hits to lead, biotechnological application of MNPs - case studies, from biomass to bioproduct. Model organisms of marine ecosystem interactions (ameba- <i>Legionella</i> , sociobiology of sponges and corals); potential source of MNPs (e.g fluorescent proteins, enzymes)						
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		Selected articles from scientific journals, e.g.: Marine Drugs, Marine Natural Products, provided by the teacher				
	Supplementary literature		Marine Natural Products, 2021, Editor Hiromasa Kiyota, Springer				
	eResources addresses						

Example issues/ example questions/ tasks being completed	Marine natural products of low and high added value Valorisation and bioprocessing Marine proteins, peptides and polysaccharides - main producers, biosynthesis, isolation, structure, bioactivity, biotechnological potential
Work placement	Not applicable

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