

Subject card

Subject name and code	Structural analysis of marine natural products - laboratory, PG_00099382						
Field of study	Marine Biotechnology						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2025/2026		
Education level	postgraduate studies	Subject group					
Mode of study	full-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			English		
Semester of study	3	ECTS credits			1.0		
Learning profile	academic	Assessment form					
Conducting unit	Zespół Laboratoriów Dydaktycznych MWB UG i GUMed -> Intercollegiate Faculty of Biotechnology UG-MUG						
Name and surname of lecturer (lecturers)	Subject supervisor	dr Wioletta Żmudzińska					
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	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	5.0	15.0	35		
Subject objectives	<p>The aim of the laboratory/practical training classes is to:</p> <ul style="list-style-type: none"> gain practical skills to plan and conduct the structural analysis of natural marine products using UV, IR, MS and NMR spectroscopy, document activities and research results gain the ability to analyze data obtained from UV, IR, MS or NMR spectroscopy, formulate a conclusion based on the obtained / available spectra 						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[MBMU2-KU02] Can collect and interpret empirical data; applies statistical methods and computer tools in data analysis; formulates conclusions based on empirical data	The student is able to plan and conduct structural analysis of natural marine products using UV, IR, MS and NMR spectroscopy.			[SU1] oral statement/conversation/discussion [SU5] implementation of a problem task [SU8] observation of student's independent or team work		
	[MBMU2-KU01] Can plan and carry out tests in the laboratory and at sea, and document activities and results; can use laboratory equipment under the guidance of a tutor; applies principles of occupational health and safety	The student is able to plan and conduct structural analysis of natural marine products using UV, IR, MS and NMR spectroscopy.			[SU1] oral statement/conversation/discussion [SU5] implementation of a problem task [SU8] observation of student's independent or team work		
	[MBMU2-KK01] Is ready to critically evaluate his knowledge and continuously improve, update and upgrade his skills in the field of marine biotechnology	The student is able to analyze data obtained from UV, IR, MS and NMR spectroscopy and formulate a conclusion based on the obtained spectra.			[SK1] oral statement/conversation/discussion [SK5] implementation of a problem task [SK8] observation of student's independent or team work		

Subject contents	Division of spectroscopic methods (emission and absorption methods); general principles of absorption spectroscopy, the nature and basic instrumentation in UV, IR, MS and NMR spectroscopy, the principle of signal formation, spectra analysis and structure determination of marine natural compound from: UV spectroscopy IR spectroscopy MS spectroscopy NMR spectroscopy Problems solving: spectroscopic analysis and identification of marine natural compounds.		
Prerequisites and co-requisites	Basic knowledge on organic chemistry		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
		51.0%	100.0%
Recommended reading	Basic literature	Organic Structures from Spectra L.D. Field, S. Sternhell, J. R. Kalman , WILEY R.M. Silverstein, F.X. Webster, D.J. Kiemle, Spektroskopowe metody identyfikacji związków organicznych, PWN Zielinski W., Rajca A., Metody spektroskopowe i ich zastosowanie do identyfikacji związków organicznych, WNT	
	Supplementary literature	Literature studied independently by the student (scientific articles recently published in specialist journals and other materials provided by the teacher during classes)	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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