University of Gdańsk

Subject card

Subject name and code	Persistent Organic Pollutants - laboratory , PG_00204972		
Field of study	Oceanography		
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 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	Polish
Semester of study	2	ECTS credits	2.0
Learning profile	academic	Assessment form	credit
Conducting unit	Department of Chemical Oceanography and Marine Geology -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Marta Staniszewska, prof. UG	
	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	2.0	18.0	50

Subject objectives

Familiarization with basic sample preparation techniques and final determination of organic pollutants at trace levels. Preparing students to use chromatographic techniques, their optimization and validation. Preparing students for the determination of selected organic compounds in marine samples. Calculations and interpretation of results based on obtaining information from various sources.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANMU2-U12] can independently expand and update oceanographic knowledge when planning and developing a professional career, as well as motivates others to deepen their knowledge	can independently expand and update knowledge about POPs	[SU2] presentation/project/paper/ report
[OCEANMU2-U01] is able to formulate and solve complex and unusual problems regarding the functioning of individual components of the marine environment using knowledge from various fields and scientific disciplines and propose solutions	is able to formulate and solve complex problems regarding the determination of POPs in the marine environment	[SU2] presentation/project/paper/ report [SU8] observation of student's independent or team work
[OCEANMU2-W01] knows and understands in-depth specialized terminology used in oceanography and related sciences (in Polish and a selected foreign language)	knows and understands specialized terminology organic pollutants and their determination	[SW4] test/exam - oral or written [SW2] presentation/project/paper/ report
[OCEANMU2-K01] is ready to plan, implement and supervise, individually or collectively, next stages of the entrusted task, is ready to take responsibility for its results;	is ready to plan and carry out laboratory tests on organic pollutants	[SK8] observation of student's independent or team work

Subject contents

B.1 familiarization with collecting, storing and preparing samples (water, bottom sediments, organisms) for the determination of organic compounds at trace levelsB.2 basics of chromatographic determinations,B.3 determination of selected organic pollutants using liquid chromatography (HPLC) in marine samples, calculations and interpretation of resultsB.4. optimization and validation of chromatographic methods

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
report 2	51.0%	10.0%
card work 1	51.0%	10.0%
report 1	51.0%	10.0%
card work 2	51.0%	10.0%
presentation	51.0%	20.0%
test 1	51.0%	20.0%
test 2	51.0%	20.0%

Recommended reading

Basic literature	Dojlido J., Zerbe J., 1997, Instrumental methods for testing water and sewage, Ed. Arcades, 271Namieśnik J., Łukasiak J., Jamrógiewicz Z., 1995, Taking environmental samples for analyses, Ed. PWN, WarsawKocjan R., ANALYTICAL CHEMISTRY, vol.2. ,Instrumental analysis Szczepaniak W., Instrumental methods in chemical analysis, PWN, Warsaw 2004Witkiewicz Z., Basics of chromatography, WNT, Warsaw 1995
Supplementary literature	-
eResources addresses	

Example issues/ example questions/ tasks being completed	Issues of collecting, storing and preparing samples for determining organic pollutants at trace levelsIssues of chromatographic determinations, validation of chromatographic methods.Practical aspects of determining selected organic pollutants using liquid chromatography (HPLC) in marine samples, calculations and interpretation of results
Work placement	Not applicable

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