University of Gdańsk

Subject card

Subject name and code	Advanced Methods of Interdisciplinary Research on the Baltic Sea - laboratory, PG_00204925		
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 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	1.0
Learning profile	academic	Assessment form	credit
Conducting unit	Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Anna Dziubińska	
	Teachers		

Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	20.0	0.0	0.0	20
	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	20	1.0	4.0	25

Subject objectives	The aim of the course is to develop and enhance the students skills in conducting interdisciplinary oceanographic work and collaborating within a research team. In addition, it includes planning and carrying out research and analyses in the fields of biological, chemical, and physical oceanography, as well as marine geology, using tools for collecting various types of samples and specialized instruments and measurement equipment.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANMU2-K05] is ready to follow the rules occupational health and safety, taking care of the entrusted person specialized and recognition equipment emergency situations and take appropriate action activities	Ready to follow health and safety regulations, take care of the specialized equipment, and is aware of the risks and hazards associated with work performed on a ship and in the laboratory.	[SK8] observation of student's independent or team work
[OCEANMU2-U11] is able to work individually and cooperate in laboratory and field groups, performs various functions in them, including managerial ones, performs various assigned tasks	Able to work individually as well as collaborate in groups, taking on various roles and performing different tasks.	[SU5] implementation of a problem task [SU8] observation of student's independent or team work
[OCEANMU2-W03] has an in-depth understanding of research methods used in oceanography and related sciences, and interprets their mechanisms and interrelationships across different spatial and temporal scales	Knows and understands the significance of basic and advanced research techniques and methods, as well as the statistical tools used in the work.	[SW3] text preparation/written work [SW5] implementation of a problem task
[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 and understands the relationships between the components of the aquatic environment, identifies and correctly describes basic natural phenomena, and explains their course in relation to the processes occurring in the marine environment.	[SW3] text preparation/written work [SW5] implementation of a problem task

Subject contents

Advanced methods used in studies of biogeochemical and physical processes in the sea (module in the fields of marine biology, marine and atmospheric chemistry, marine geology, and physical oceanography).

Depending on the planned research, the use of measurement devices/samplers, including: CTD probe, Acoustic Doppler Current Profiler (ADCP), hydroacoustic instruments (side-scan sonar, multibeam echosounder, subbottom profiler, underwater acoustic positioning system (USBL - Ultra-short baseline), remotely operated vehicle (ROV), bathymetric rosette, automatic meteorological station, multi-sediment trap, sediment samplers (grabs, coring probes), plankton nets, and others.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
activity during classes	51.0%	10.0%
the average grade from presentations, reports or worksheets presenting the obtained results	51.0%	60.0%
accuracy of performing the assigned task	51.0%	30.0%

Recommended reading

Basic literature	E. Szymczak (red.), 2020. Zaawansowane metody interdyscyplinarnych badań Morza Bałtyckiego. Skrypt do zajęć dla studentów studiów magisterskich na kierunku Oceanografia J. Bolalek (red), 2010. Fizyczne, biologiczne i chemiczne badania morskich osadów dennych, Wydawnictwo UG Literature updated on an ongoing basis depending on the location of the research site
Supplementary literature	selected items of current subject literature in Polish and English
eResources addresses	

Example issues/ example questions/ tasks being completed	Conducting measurements in the sea or coastal zone Collecting samples for research using various probes Performing laboratory analyses Data analysis and preparation of report, presentation or worksheet
Work placement	Not applicable

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