

Subject card

Subject name and code	Oceanographic instruments and measurements – laboratory, PG_00120355						
Field of study	Oceanography						
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 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	1		ECTS credits		3.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Dorota Burska				
	Teachers		mgr Aleksandra Malecha-Łysakowska				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	45.0	0.0	0.0	45
	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	45		5.0		25.0	75
Subject objectives	Practical knowledge of the principles of instruments/devices and measurement platforms/systems used today in oceanographic research and the use of existing databases to solve research, environmental and management problems.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[OCEANMU2-U03] can plan and carry out independently advanced research and measurements, both in field and laboratory, using appropriately selected measurement and analytical techniques in the field of oceanography, adequately to the studied specialty and research problem	is able to use specialized computer software and mathematical and statistical methods in data analysis and description of phenomena and processes especially in the fields of chemistry, physics and marine geology.	[SU2] presentation/project/paper/report [SU5] implementation of a problem task
	[OCEANMU2-W03] knows and understands research methods used in oceanography and related sciences	knows and understands in an advanced way the research methods used in evaluographic metrology, in terms of modern sensors and devices used for in situ measurements and specialized software used to conduct measurements, describe and interpret phenomena and processes occurring in the aquatic environment, especially the marine environment.	[SW2] presentation/project/paper/report [SW3] text preparation/written work
	[OCEANMU2-K04] is ready to critically evaluate his/her knowledge and received content in the field of natural sciences in particular in the field of the studied specialty, a in problematic situations, supports oneself with knowledge experts	is ready to critically evaluate his knowledge regarding modern equipment and sensors used in surveying oceanography and to support himself with expert knowledge in solving problems.	[SK2] presentation/project/paper/report [SK3] text preparation/written work
	[OCEANMU2-U06] can use specialized computer software and advanced mathematical and statistical methods in data analysis and description of processes and phenomena occurring in the marine environment and coastal zone	Can independently plan and carry out tests and measurements using using appropriately selected measurement and analytical techniques in the field of Oceanography by adapting the used methods to the research problem. research problem.	[SU6] demonstration of practical skills [SU8] observation of student's independent or team work
Subject contents	1. Verification of information sources for marine environmental measurements, taking into account the type of platform, accuracy and precision of the instrument, availability of data, 2. Measurement parameters (measurement range, precision, accuracy, sensor response time, sampling interval, recording duration). 3. Preparation of instruments/devices for in-situ measurement work/experimental setups (e.g.: configuration and calibration of equipment, checking for correct operation, use of specialized software) 4. Data systems (type of data, data compression, data storage, etc..) with examples of special programs used in marine physics, chemistry and geology, modern oceanographic databases,5 Analysis and presentation of results - problem presentation based on measurement/archival data (scientific, management, monitoring purpose)		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	report	51.0%	30.0%
	data compilation	51.0%	70.0%

Recommended reading	Basic literature	1. Instructions for use of equipment/instrumentation. 2. Reports from IMGW, WIOŚ, HELCOM, hydrodynamic model of the southern Baltic Sea, weather forecasts, SatBaltic platform, GOOS, NOAA, scientific articles.
	Supplementary literature	1 Rózdzyński K., (1996) Oceanographic surveying, vol. 1-12, IMGW, Warsaw (in Polish). 3. Lekkerkerk, H. J., Van der Velden, R., Roders, J., Haycock, T., DeVries, R., Jansen, P., Beemster, C. (2006) Handbook of Offshore
	eResources addresses	
Example issues/ example questions/ tasks being completed	1. Conversions, tasks in terms of units used in oceanographic surveying. 2. Development of selected hydroacoustic data (e.g.: bathymetry, bottom structure, depth profiles). 3. Development of the results of an environmental experiment - evaluation of changes over time.	
Work placement	Not applicable	

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