University of Gdańsk

Subject card

Subject name and code	Oceanographic Instruments and Measurements – laboratory, PG_00206208						
Field of study	Oceanography						
Date of commencement of studies	October 2026		Academic year of realisation of subject	2026/2027			
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, prof. UG				
	Teachers						
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		3.0		27.0	75
Subject objectives	Practical knowledge of the principles of instruments/devices and measurement platforms/systems used today in oceanographic research ((physical, chemical and geological) 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-K04] is ready to critically evaluate his/her knowledge and received content in the field of natural sciences in 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-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 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-U06] is able to use specialized computer software as well as advanced mathematical and statistical methods to analyze data and describe processes and phenomena occurring in the marine and coastal environment; evaluates their reliability and usefulness and performs critical analysis	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 specia-list 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 thesouthern Baltic Sea, weather forecasts, SatBaltic platform, GOOS,NOA, scientific articles.
	Supplementary literature	1 Różdżyński 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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