University of Gdańsk

Subject card

Subject name and code	, PG_00121057						
Field of study	Oceanography						
Date of commencement of studies	October 2024		Academic year of realisation of subject	2025/2026			
Education level	postgraduate studies		Subject group	Optional subject group			
Mode of study	full-time studies		Mode of delivery	at the university			
Year of study	2		Language of instruction	Polish			
Semester of study	4		ECTS credits	1.0			
Learning profile	academic		Assessment form				
Conducting unit	Faculty of Oceanography and Geography						
Name and surname of lecturer (lecturers)	Subject supervisor		dr Anna Panasiuk				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	20.0	0.0	0.0	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		22.0		7.0	49
Subject objectives	The purpose of the lecture is to familiarize students with modern algorithms used in Earth Sciences.						

Learning outcomes

Course outcome	Subject outcome	Method of verification
[OCEANMU2-W03] knows and understands research methods used in oceanography and related sciences	knows and understands to an in-depth degree research methods using machine learning algorithms in oceanography and related sciences	[SW4] test/exam - oral or written
[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	is able to independently expand and update his knowledge of applications of computational methods to solve research problems in oceanography Oceanography, planning and developing one's own professional career, and motivates others to enhance their acquired knowledge by sharing the information they have gained.	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
[OCEANMU2-U07] is able to communicate using various communication channels and techniques with specialists and non-specialists in the field of oceanographic issues	is able to communicate using a variety of channels and techniques communication in with specialists and non-specialists in the application of machine learning algorithms in oceanography.	[SU1] oral statement/conversation/ discussion
[OCEANMU2-U05] is able to use source information in Polish and a selected foreign language, including archival and electronic databases, in the field of oceanographic issues, performs critical analysis and synthesis of information	Is able to use source information, in Polish and English, including including from archival and electronic databases, in the application of techniques of machine learning in assessmentography, performs critical analysis and synthesis of information.	[SU4] test/exam - oral or written
[OCEANMU2-U02] can use scientific terminology fluently and appropriately in presenting and discussing problems in the field of oceanography	Can proficiently and appropriately use scientific terminology in presenting and discussing problems in the application of machine learning techniques in oceanography.	[SU4] test/exam - oral or written
[OCEANMU2-K03] is ready to effectively organize his/her own work, is active and persistent and punctuality in completing tasks, is ready to carrying out evaluation of their own activities	is ready to effectively organize his own work, shows activity and exhibits persistence and punctuality in preparing for lectures, is self-critical and draws conclusions on the basis of self-analysis.	[SK1] oral statement/conversation/ discussion
[OCEANMU2-W04] knows and understands the latest research trends in the field of oceanography as well as the possibilities of practical application of scientific achievements	knows and understands to an in-depth degree the latest research trends in the in the field of application of artificial intelligence and machine learning techniques in oceanography, as well as the possibilities of practical application of scientific achievements related to the development of modern algorithms	[SW4] test/exam - oral or written

Subject contents

1. Introduction to the concept of data-based modelling.
2. basic machine learning algorithms.
3. case studies of data-based modeling (based on selected scientific articles from Earth Sciences).

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
determination of a passing grade on the basis of partial grades received during the semester	51.0%	100.0%

Recommended reading

Basic literature	Leszek Rutkowski, Metody i techniki sztucznej inteligencji: inteligencja obliczeniowa. David J. Lary i inni, Machine Learning Applications for Earth Observation The lecture is based on the latest scientific publications. The list of literature is created immediately before the beginning of the block of classes and is communicated to students.
Supplementary literature	The lecture is based on the latest scientific publications. The list of literature is created immediately before the beginning of the block of classes and is communicated to students.

	eResources addresses	Adresy na platformie eNauczanie:
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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