University of Gdańsk

Subject card

Subject name and code	Methodology of Underwater Research of the Marine Environment - lecture, PG_00204941		
Field of study	Oceanography		
Date of commencement of studies	October 2027	Academic year of realisation of subject	2028/2029
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	2	Language of instruction	Polish
Semester of study	3	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 hab. Mariusz Sapota, prof. UG	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	0.0	0.0	0.0	15

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	15	1.0	9.0	25

Subject objectives

To familiarize students with the basic issues concerning the methods of using the diving technique for scientific research

Learning outcomes

Course outcome	Subject outcome	Method of verification
[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 to an in-depth degree complex research issues and the latest directions in underwater research in the field of oceanography	[SW4] test/exam - oral or written
[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 select basic measurement and analytical techniques used in underwater research of the marine environment, adequately to the scientific problem posed	[SU4] test/exam - oral or written
[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	is ready to comply with the principles of occupational health and safety, is aware of the risks and hazards resulting from working underwater with the use of specialized equipment	[SK4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>Underwater research techniques (free diving, unmanned vehicles, remotely operated unmanned vehicles, etc.)

Methodology of underwater research using the free diving technique (research planning, equipment requirements and authorizations, safety rules)

History of underwater research in the Baltic Sea

The use of free diving techniques in marine environment research

Organization of scientific diving in Europe

Interpretation of geological separations, sedimentary structures of the seabed

The use of free diving in archaeological research

Presentation of underwater photos and videos documenting scientific underwater research</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td><table><tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr><tr><td>final test</td><td>51.0%</td><td>100.0%</td></tr></table></td></tr>
<tr><td>Recommended reading</td><td><table><tr><td>Basic literature</td><td>Beker L., Kaczyński R., 1985, Fotografia i fotogrametria podwodna. Wydawnictwo Naukowo-Techniczne.
Macke J., Kuszewaki K., Zieleniec G., 1989, Nurkowanie. Wydawnictwo Sport i turystyka Warszawa
Olszański R., Skrzyński S., Kłos R., 1997, Problemy medycyny i techniki nurkowej. Wydawnictwo Okrętownictwo i Żegluga Spółka z o.o
Przylipiak M., Torbus J.,1981, Sprzęt i prace nurkowe poradnik. Wydawnictwo Ministerstwa Obrony Narodowej
Cappo M., Brown I.W., 1996. Evaluation of sampling methods for reef fish populations for commercial and recreational inter-est. CRC Reef Research
Centre. Technical report no. 6. Townsville CCRC Reef Research Centre 72pp.</td></tr><tr><td>Supplementary literature</td><td>Krzyżak J., 1998, Medycyna dla nurków. Fizjopatologia nurkowania. Wydawnictwo KOOPgraf S.C.</td></tr><tr><td>eResources addresses</td><td></td></tr></table></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td></td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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