University of Gdańsk

Subject card

Subject name and code	Hydrographic Survey Operations - lecture, PG_00201120		
Field of study	Marine Hydrography		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Subject group related to practical vocational preparation
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	practical	Assessment form	credit
Conducting unit	Laboratory of Physical Oceanography -> Department of Physical Oceanography and Climate Research -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Jakub Idczak	
	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	1.0	9.0	30

Subject objectives

To impart knowledge regarding the principles and requirements for planning and conducting hydrographic measurement work, in accordance with national and international regulations.

To master the skills necessary for planning and directing hydrographic work at sea and in ports, using various devices and measurement systems.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[HML3-W16] knows and understands engineering standards and norms specific to the field of study, in particular those recommended by IHO and IMO	knows and understands, at an advanced level, national and international standards and norms related to hydrographic surveying	[SW4] test/exam - oral or written
[HML3-W15] knows and understands labour law and other legal bases related to the profession of hydrographer, in particular health and safety regulations and ergonomic principles	knows and understands, at an advanced level, national and international standards, guidelines, and regulations concerning the planning and execution of hydrographic work, as well as the competencies and responsibilities of a marine hydrographer	[SW4] test/exam - oral or written
[HML3-W14] knows and understands key legal regulations regarding the sustainable development of the marine environment and nature protection	knows the legal aspects of conducting hydrographic work	[SW4] test/exam - oral or written
[HML3-W04] knows and understands, at an advanced level, the issue of measurements related to the exploration of sea basins and inland waters and tools allowing to describe, interpret and present the results of measurements	knows and understands how national and international hydrographic services operate for the purposes of navigational safety	[SW4] test/exam - oral or written
[HML3-K02] is ready to correctly determine the priorities in professional work for the implementation of a task specified by himself/ herself or others	is ready to independently organize, plan, and manage the work of various measurement teams	[SK4] test/exam - oral or written
[HML3-K04] is ready to perform professional roles responsibly, taking into account moral and ethical challenges, including in the international environment and care for the achievements and traditions of the profession	is ready to responsibly collect, process, and disseminate hydrographic data, in accordance with the generally accepted ethical principles of the maritime hydrographer profession	[SK4] test/exam - oral or written
[HML3-U14] is able to use the applicable terminology in presenting and discussing problems related to the field of study	is able to correctly use the relevant terminology when presenting and discussing issues related to hydrography	[SU4] test/exam - oral or written
[HML3-U08] is able to independently use the professional literature available in traditional and electronic form, make an assessment, critical analysis and synthesis as well as the correct interpretation of the information obtained	is able to independently use professional literature available in both print and electronic formats, as well as the Internet; integrate, evaluate, and correctly interpret the information obtained; draw conclusions; formulate opinions; and take actions to ensure the effective and safe execution of hydrographic work	[SU4] test/exam - oral or written
[HML3-U04] is able to use analytical, simulation and experimental methods to identify, formulate and solve engineering tasks	is able to effectively use a variety of hydrographic instruments and systems employed in hydrographic work, taking into account their limitations, errors, and calibration	[SU4] test/exam - oral or written
[HML3-U02] is able to select and apply basic research techniques and tools in the field of aquatic environment research, as well as plan and carry out measurements, develop the obtained results and interpret them correctly	is able to select and apply the appropriate types and methods of hydrographic work	[SU4] test/exam - oral or written
[HML3-W03] knows and understands, at an advanced level, directions of development and the latest discoveries in the field of scientific disciplines forming the theoretical basis appropriate to the field of study	knows and understands, at an advanced level, innovative remote sensing techniques used in hydrographic surveys	[SW4] test/exam - oral or written

<table>
<tr><td>Subject contents</td><td>Introductory classes. Goals and purposes of hydrographic work. International and national standards for planning, ordering, and executing various types of hydrographic work, as well as the competencies required for marine hydrographers. Means and methods of acquiring, processing, and transmitting hydrographic data. Hydrographic devices and measurement systems. Principles of planning hydrographic work. Guidelines and requirements for conducting hydrographic work. Organization and principles of controlling hydrographic work. Documentation of hydrographic work. Legal aspects of conducting hydrographic work.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td></td></tr>
<tr><td>Assessment methods and criteria</td><td>
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<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>exam</td><td>51.0%</td><td>100.0%</td></tr>
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<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>1. GRZĄDZIEL A., WĄŻ M.: Powstanie i rozwój technologii echosondy wielowiązkowej. Polish Hyperbaric Research, Nr 1(62), 2018.
2. GRZĄDZIEL A., WĄŻ M.: System echosondy wielowiązkowej w pomiarach batymetrycznych planowanych tras żeglugowych. Logistyka, Nr 6,
2014.
3. Podręcznik Normalizacji Obronnej Hydrografia Morska. Organizacja i zasady prowadzenia badań (PDNO-06-A072).
4. Podręcznik Normalizacji Obronnej Hydrografia Morska. Zasady gromadzenia danych i przedstawiania wyników (PDNO-06-A073).
5. Przegląd Hydrograficzny, Nr 1-8, BHMW, 2005-2013.
6. IHO C-13 Manual on Hydrography.
7. IHO M-2 The Need for National Hydrographic Services.
8. IHO S-5A Standards of Competency for Category A Hydrographic Surveyors.
9. IHO S-44 IHO Standards for Hydrographic Surveys.
10. IHO S-100 IHO Universal Hydrographic Data Model.</td></tr>
<tr><td>Supplementary literature</td><td>Lekkerkerk, H. J., Van der Velden, R., Roders, J., Haycock, T., De Vries, R., Jansen, P., Beemster ,C. (2006) Handbook of Offshore Surveying. Clarkson Research Services, London</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>1. Conducting hydrographic work: formal issues, international standards.

2. Types and categories of hydrographic and oceanographic devices and their applications.

3. Planning hydrographic work using various devices.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
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