University of Gdańsk

Subject card

Subject name and code	Hydrology - lecture, PG_00198777		
Field of study	Marine Hydrography		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Bachelor's studies	Subject group	Obligatory subject group 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	2	ECTS credits	1.0
Learning profile	practical	Assessment form	credit
Conducting unit	Department of Hydrology -> Faculty of Oceanography and Geography -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. Joanna Fac-Beneda, prof. UG	
	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

- Basic knowledge of the hydrosphere and the water cycle in the natural environment.
- Causes and geographical determinants of water circulation in nature.
- Hydrographic objects and the links and relationships between them.
- Basic water science terminology.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[HML3-K01] is ready to correctly identify and resolve professional dilemmas, especially in the aspects of security and entrusted property	is ready to critically appraise his knowledge and perceived content and to recognise the importance of knowledge in solving cognitive and practical problems and to seek expert advice when he has difficulties in solving a problem himself	[SK1] oral statement/conversation/ discussion
[HML3-W02] knows and understands, at an advanced level, selected phenomena and processes occurring in the hydrosphere, atmosphere, lithosphere and biosphere, their interconnections and relations, as well as practical applications of this knowledge in professional activities related to the field of study	knows and understands at an advanced level the phenomena and processes of the hydrosphere, atmosphere, lithosphere and biosphere, their interrelationships and relations, as well as the practical applications of this knowledge in professional activities related to his/her field of study	[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 at an advanced level measurement issues related to inland water studies and the tools to describe, interpret and present measurement results	[SW1] oral statement/ conversation/discussion
[HML3-U14] is able to use the applicable terminology in presenting and discussing problems related to the field of study	is able to use current terminology in presenting and discussing problems in hydrology	[SU1] oral statement/conversation/ discussion [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 make independent use of the hydrological literature, evaluate, critically analyse and synthesise and correctly interpret the information obtained	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written
[HML3-U03] is able to recognise natural (including geological) and anthropogenic objects and link them to the processes leading to their formation	is able to recognise hydrographic and anthropogenic features and link them to the processes leading to their formation	[SU1] oral statement/conversation/ discussion [SU4] test/exam - oral or written

Subject contents

1. Subject and scope of hydrological research. Systematics of water sciences.
2. Hydrosphere and its properties. Circulation of water in nature - small and large water cycle.
3. The hydrographic system and its components. Hydrographic objects (point, linear, surface).
4. Atmospheric phase of the water cycle (precipitation and evaporation).
5. The subterranean link of the water cycle.
6. Surface and underground runoff (variability and measures of runoff).
7. Retention (types and magnitude of retention).
8. Water balance (elements of water balance, types of water balance).
9. Thermal and dynamic processes in inland waters.

Prerequisites and co-requisites

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
written /oral examination	51.0%	100.0%

<table>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>• Bajkiewicz-Grabowska E., 2021, General hydrology, PWN, Warsaw.
• Bajkiewicz-Grabowska E., Magnuszewski Z., 2009, Guide to exercises in general hydrology, PWN, Warsaw.
• Gutry-Korycka M., Werner-Więckowska H., 1989, Guide to hydrographic field studies, PWN, Warsaw.
• Jokiel P., Marszelewski Wł., Pociask - Karteczka J. (ed.), 2017, Hydrology of Poland, academic textbook, Wyd. PWN, Warszawa.
• Kosowska-Cezak U., Bajkiewicz-Grabowska E., 2009, Fundamentals of hydrometeorology. PWN, Warsaw.
• Pociask-Karteczka J. (ed), 2003, Catchment. Properties and processes, Jagiellonian University IGiGP, Cracow.
• Dynowska I., Tlałka A., 1982, Hydrography, PWN, Warsaw-Poznań.
• Choiński A., 2008, Physical limnology Polski, Wyd. Nauk. UAM, Poznań.
• Choiński A., 2000, Lakes of the globe. PWN, Warszawa.
• GIS-3, Mapa Hydrograficzna Polski w skali 1:50 000, Wytyczne techniczne, 2005, GUGiK, Warszawa.
• Land Information System, Hydrographic Map of Poland scale 1:50 000, Technical guidelines K-3.4, 1997, GUGiK, Warsaw.
• Technical Guidelines K 3-4. Hydrographic Map of Poland scale 1:50 000, Warsaw.</td></tr>
<tr><td>Supplementary literature</td><td>• Byczkowski A., 1999, Hydrology, vol. I and II, Wydaw. SGGW, Warsaw.
• Choiński A., Kaniecki A., 1996,Great Encyclopedia of World Geography vol. IV: Waters of the Earth, Wydawnictwo Kurpisz, Poznań
• Parde M., 1957, Rivers, PWN, Warsaw.
• Dynowska I., 1971, Types of river regimes in Poland, Prace IG UJ, Kraków.
• Lange W. (ed.), 1993, Methods of physical-limnological research, Wyd. UG, Gdańsk.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">1. The role of wetlands in the geographical environment.
2. Explain what influences the formation of runoff.
3. How do you think water quality can be improved?
4. What is a geyser, how is it formed and where does it occur?
5. What is the importance of lakes in the geographical environment?
6. Explain the impact of glaciers on changes to the globe.</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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