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 | | | | |
| | 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.<br>• Causes and geographical determinants of water circulation in nature.<br>• Hydrographic objects and the links and relationships between them.<br>• Basic water science terminology. | | | | | | |

## Learning outcomes

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [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<br>[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<br>[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<br>[SU4] test/exam - oral or written |
| [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 |

## 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% |

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

Document generated electronically. Does not require a seal or signature.