University of Gdańsk

Subject card

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|---|---|---|---|
| Subject name and code | General Hydrology - lecture, PG_00186481 | | |
| Field of study | Water Management and Protection of Water Resources | | |
| Date of commencement of studies | October 2027 | Academic year of realisation of subject | 2027/2028 |
| Education level | Bachelor's studies | Subject group | Obligatory subject group in the field of study<br>Subject group related to practical vocational preparation |
| Mode of study | full-time studies | Mode of delivery | at the university |
| Year of study | 1 | Language of instruction | Polish |
| Semester of study | 1 | ECTS credits | 2.0 |
| Learning profile | practical | Assessment form | exam |
| 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 | 30.0 | 0.0 | 0.0 | 0.0 | 0.0 | 30 |

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 | 30 | 1.0 | 19.0 | 50 |

**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 |
|---|---|---|
| [GWOZWL3-W08] advanced knowledge and understanding of the key concepts and issues within their field of study in foreign language. | Knows and is able to use basic concepts related to the field of study in English. | [SW1] oral statement/ conversation/discussion<br>[SW3] text preparation/written work |
| [GWOZWL3-U13] read with understanding specialized scientific texts in Polish and foreign language. | The student is able to read with understanding specialized scientific texts in Polish and English. | [SU1] oral statement/conversation/ discussion |
| [GWOZWL3-U08] use basic mathematical and statistical methods to analyze data and describe phenomena and processes occurring in the environment, as well as methods of information technology to assess the risk of threats to the of the environment, especially the hydrosphere. | is able to use basic mathematical and statistical methods for data analysis and description of phenomena and processes in the hydrosphere, as well as computer methods | [SU6] demonstration of practical skills |
| [GWOZWL3-K03] systematic further education and professional development, updating and expand his knowledge and skills, understands the limitations of his own knowledge in the context of civilization progress and recognizes authorities in the professional and scientific environment. | is willing to undergo systematic retraining and professional development, to update and expand his/her knowledge and skills, understands the limits of his/ her own knowledge in the context of the progress of civilisation and recognises authority in the professional and scientific community | [SK1] oral statement/conversation/ discussion |
| [GWOZWL3-W02] the importance of advanced knowledge in the sciences allowing to understand the processes and phenomena occurring in the hydrosphere, as well as knowledge of the social sciences and of the Earth's geographic environment - as a system of interrelated and interacting components. | knows and understands the importance of scientific knowledge for understanding processes and phenomena in the hydrosphere and knowledge of water relations in a changing geographical environment | [SW4] test/exam - oral or written |
| [GWOZWL3-W01] in advanced basic biological, physical and chemical processes and phenomena, as well as analyzes their mutual relations and course in relation to natural environment and socio-ecological systems. | has an advanced understanding and appreciation of fundamental biological, physical and chemical processes and phenomena, and analyses their interrelationships and processes in relation to the aquatic environment and hydrographic systems | [SW4] test/exam - oral or written |
| [GWOZWL3-U07] use literature and other available sources of information, including information technology, multimedia, Internet, databases, and select and critically evaluate information. | be able to use literature, reference materials and databases, as well as information technology and multimedia, and to select and critically evaluate hydrological information | [SU1] oral statement/conversation/ discussion |

## Subject contents

Subject and scope of hydrological research. Systematics of water sciences.Hydrosphere and its properties. Circulation of water in nature - small and large water cycle.The hydrographic system and its components. Hydrographic objects (point, linear, surface).Atmospheric phase of the water cycle (precipitation and evaporation).Underground water cycle link.Surface and underground runoff (variability and measures of runoff).Retention (types and magnitude of retention).Water balance (elements of water balance, types of water balance).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 exam | 51.0% | 100.0% |

<table>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>• Bajkiewicz-Grabowska E., 2011, General hydrology, PWN, Warsaw.<br>• Bajkiewicz-Grabowska E., 2021, General hydrology, PWN, Warsaw.<br>• Bajkiewicz-Grabowska E., Magnuszewski Z., 2009, Guide to exercises in general hydrology, PWN, Warsaw.<br>• Jokiel P., Marszelewski Wł., Pociask - Karteczka J. (ed.), 2017, Hydrologia Polski, podręcznik akademicki, Wyd. PWN, Warszawa.<br>• Kosowska-Cezak U., Bajkiewicz-Grabowska E., 2009, Podstawy hydrometeorologii. 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, Limnologia fizyczna Polski, Wyd. Nauk. UAM, Poznań.<br>• Central Office of Geodesy and Cartography [GUGK], 1985, Technical guidelines K 3-4. Mapa hydrograficzna w skali 1:50 000, Warsaw.</td></tr>
<tr><td>Supplementary literature</td><td>• Byczkowski A., 1999, Hydrology, vol. I and II, Wydaw. SGGW, Warsaw.<br>• Choiński A., Kaniecki A., 1996, Wielka Encyklopedia Geografii Świata t. IV: Wody Ziemi, Wydawnictwo Kurpisz, Poznań<br>• Parde M., 1957, Rivers, PWN, Warsaw.<br>• Dynowska I., 1971 Typy reżimów rzecznych w Polsce, Prace IG UJ, Kraków.<br>• 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. What is a geyser, how is it formed and where does it occur?<br>2. What is the importance of lakes in the geographical environment?<br>3. Explain the impact of glaciers on changes to the globe.<br>4. The role of wetlands in the geographical environment.<br>5. Explain what influences the formation of runoff.<br>6. How do you think water quality can be improved?</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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