University of Gdańsk

Subject card

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| Subject name and code | Water management, PG_00201355 | | |
| Field of study | Spatial Management | | |
| Date of commencement of studies | October 2026 | Academic year of realisation of subject | 2026/2027 |
| Education level | Master's studies | Subject group | Obligatory subject group in the field of study<br>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 | 1 | Language of instruction | Polish |
| Semester of study | 2 | ECTS credits | 4.0 |
| Learning profile | academic | Assessment form | exam |
| Conducting unit | Institute of Socio-Economic Geography and Spatial Management -> Faculty of Social Sciences -> Rector | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr Wojciech Maślanka | |
| | Teachers | | |

**Lesson types**

| Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|
| Number of study hours | 30.0 | 20.0 | 0.0 | 0.0 | 0.0 | 50 |

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 | 50 | 8.0 | 42.0 | 100 |

**Subject objectives**

1. to demonstrate the role and importance of water management in the life of societies2. to learn about the principles and methods of water resources management and to assess the effectiveness of the implemented water resources management activitiesto learn about the principles and methods of water resources management and to evaluate the effectiveness of water resources management activities3. to prepare for the independent drawing up of a water-economy balance sheet

## Learning outcomes

| Course outcome | Subject outcome | Method of verification |
|---|---|---|
| [GPMU2_U07] performs complex research tasks or expertise in the field of spatial management by interacting with other people, taking a leading role in teams and presenting the results of the research in a written and oral form using specialised terminology | Organises, plans and constructs simple research proceedings in the field of water management | [SU2] presentation/project/paper/ report<br>[SU8] observation of student's independent or team work |
| [GPMU2_K01] is ready to critically assess the possessed knowledge and received content | Critically assesses the effectiveness of measures on the subject of water management | [SK2] presentation/project/paper/ report<br>[SK8] observation of student's independent or team work |
| [GPMU2_U02] properly selects sources and information derived from them, with particular regard to sources of spatial information, evaluates them critically and interprets them creatively | Analyses and evaluates water resources and needs for water-economic balancing. Compiles the balance of needs and water resources | [SU2] presentation/project/paper/ report<br>[SU8] observation of student's independent or team work |
| [GPMU2_W06] identyfies problems and theories in spatial management, taking into account complex dependencies and trends of changes in the natural environment; understands their theoretical and practical significance | Distinguishes between the economic and social needs of water management as well as the requirements related to the protection of the natural environment in accordance with the eco-development policy (conflict of objectives and criteria for assessing the effectiveness of water management activities) | [SW4] test/exam - oral or written |
| [GPMU2_W03] understands to a deeper extent, the conditions (natural, social, economic, cultural, legal) of processes taking place in spatial management, with particular emphasis on the specifics of Polish maritime areas and voivodships of northern Poland | Defines and describes the main tasks of water management and explains and explains the objectives pursued by each task | [SW4] test/exam - oral or written |

## Subject contents

A. Problems of the lectureA.1 Development of water management as a consequence of water resource constraints. Water management: a science and a branch of the national economy.A.2 Tasks and objectives of water management. Status and directions of development of water management in Poland.A.3 Water management systems and instruments of water resources management.A.4 Water balance. Natural and disposable water resources of catchment areas. Water needs of selected sectors of national economy andagriculture. Water needs of the population.A.5 Small retention. Hydrological land reclamation and its effects. Water erosion of soils and its prevention. Hydrological role of forest.A.6 Water quality: water quality classification, water quality assessment methods, water quality indicators and indices.A.7 Instruments of water resources management.B. Problems of exercisesB.1 Drawing up a water-economy balance of a small lowland catchment: water resources assessment, water needs assessment, balance of water resources and needswater resources and needs.

## Prerequisites and co-requisites

Ability to extract and synthesise information from multiple sources, working knowledge of GIS software

## Assessment methods and criteria

| Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|
| Credit work | 51.0% | 50.0% |
| Egzam | 51.0% | 50.0% |

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| Recommended reading | Basic literature | 1. Ciepielowski A., 1999, Podstawy gospodarowania wodą, Wyd. SGGW, Warszawa, 326 s.2. Lambor J., 1965, Podstawy i zasady gospodarki wodnej, Wyd KiŁ, Warszawa, 437 s.3. Mikulski Z., 1999, Gospodarka wodna, Wyd. Nauk. PWN, Warszawa, 202 s.4. Słota H., 1997, Zarządzanie systemami gospodarki wodnej, IMGW, Warszawa, 130 s.A.2. studiowana samodzielnie przez studenta1. Bajkiewicz-Grabowska E., Mikulski Z., 2010, Hydrologia ogólna, PWN, Warszawa, 340 s.2. Borowiak D., 2017, Zasoby i bilans wodny jezior, [w:] Jokiel P., Marszelewski W., Pociask-Karteczka J. (red.) Hydrologia Polski, PWN, Warszawa:223-235. 3.Byczkowski A., 1979, Hydrologiczne podstawy projektów wodnomelioracyjnych, PWLiR, Warszawa, 401 s.4. Ciepielowski A. (red.), 1995, Metodyka zagospodarowania zasobów wodnych w małych zlewniach rzecznych, Wyd. SGGW, Warszawa, 152 s. |
| | Supplementary literature | 1. Biswas A.K., 1978, Historia hydrologii, PWN, Warszawa, 380 s.3. UNESCO, 1978, World Water Balance and Water Resources of the Earth. Studies and Reports in Hydrology No 25, Unesco Press, Paris, 587 s. |
| | eResources addresses | |
| Example issues/ example questions/ tasks being completed | Basic assessment criteriaLecture:A score of min. 51% of the points possible to obtain from the examwritten examination covering the material covered in lectures and exercises.Exercises:Project and sub-tasks - timeliness of completion, completeness and correctness of thecontent, compliance with the given guidelines, clear and legible visualisation ofresults obtained. A prerequisite for obtaining credit is the completion of allcompleted assignments and/or projects. In order to pass the exercises, it is required to obtainmin. 51% of the total possible number of points for the partial tasks and/orprojectDiscussion - active participation in a discussion, the ability to undertake a discussion and giveanswers to the questions and problem tasks posed. Understanding and correctUse of hydrological terminology within the subject matter covered in class.classes.A student obtains one mark from the course, which is 50% derived from the mark for the exercises50% from the mark for the laboratory exercises and 50% from the mark for the examination/ assessment.a pass mark for both the practical and the lecture part of the course. | |
| Work placement | Not applicable | |

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