University of Gdańsk

Subject card

Subject name and code	Water Management, PG_00150410		
Field of study	Land Management		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	Master's studies	Subject group	Obligatory subject group in the field of study Humanistic-social subject group
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 Grażyna Chaberek	
	Teachers	dr Wojciech Maślanka	

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	60.0	118

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_W06] 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_U02] properly select sources and information derived from them, with particular regard to sources of spatial information, evaluate them critically and interpret 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 [SU8] observation of student's independent or team work
[GPMU2_K01] critically assess possessed knowledge and received content	Critically assesses the effectiveness of measures on the subject of water management	[SK2] presentation/project/paper/ report [SK8] observation of student's independent or team work
[GPMU2_W03] 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
[GPMU2_U07] perform complex research tasks or expertise in the field of spatial management by interacting with other people, taking a leading role in teams and present 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 [SU8] observation of student's independent or team work

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%

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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