University of Gdańsk

Subject card

Subject name and code	Water Management in The Natural and Anthropogenically Transformed Areas - tutorials, PG_00201441		
Field of study	Water Management and Protection of Water Resources		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2027/2028
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Subject group related to practical vocational preparation
Mode of study	full-time studies	Mode of delivery	at the university
Year of study	2	Language of instruction	Polish
Semester of study	4	ECTS credits	2.0
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 Katarzyna Jereczek-Korzeniewska	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	0.0	30.0	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

: To know the basic tools of water management and the main problems of water resources management. Teaching the basics of scientific workshop

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GWOZWL3-U06] The student has the ability assess the impact of planned investments on value and quality of water resources and propose options for solutions to protect and restore water resources, recognize their weaknesses and strengths as well as opportunities and threats.	is able to assess the impact of planned hydraulic and environmental impact on the value and quality of water resources and propose options for solutions to protect and restore water resources	[SU2] presentation/project/paper/ report [SU5] implementation of a problem task
	[GWOZWL3-U04] The student can distinguish between objectives, analyze and evaluate modern strategies for managing environment especially in the context of ecosystem approach to managing human activities in the environment with taking into account relevant law regulations and the indication of administrative bodies responsible for the management of waters and the protection of water resources.	is able to analyse and evaluate modern management strategies the environment, and in particular water management, taking into account taking into account the relevant legislation and indications from the administrative bodies responsible for water management and protection of water resources waters	[SU2] presentation/project/paper/ report [SU5] implementation of a problem task
	[GWOZWL3-U03] The student has the ability observe and describe the changes taking place in water management and predict further directions of its development as well as conduct a critical analysis of case studies of problems of water management and protection of water resources in terms of impact on ecological, social and economic systems; natural valorization and assessment of quality of the environment.	is able to observe and describe changes in water management and anticipate further developments in water management by carrying out a case study case study, natural valuation and environmental quality assessment	[SU2] presentation/project/paper/ report [SU5] implementation of a problem task
	[GWOZWL3-K06] The student has the ability an informed and reliable assessment of the impact of humans on the aquatic environment.	is prepared to make an informed and honest assessment of the impact of human activities on the the aquatic environment	[SK8] observation of student's independent or team work
	[GWOZWL3-W09] The student knows and understands potential threats and sources of pollution of surface and groundwater resulting from the development of civilization, in particular strong anthropopression.	is able to distinguish and characterise potential threats and sources of of pollution of surface water and groundwater resulting from the development of civilisation of civilisation	[SW2] presentation/project/paper/ report [SW5] implementation of a problem task
	[GWOZWL3-W03] The student has an advanced knowledge and understanding of the organisation and legal framework of environmental protection, nature conservation and water management, as well as the principles governing the organisation and operation of hydrological and meteorological services and the fundamentals of Integrated Environmental Monitoring.	knows the organisation and legal basis of environmental and nature protection related to water management, and is familiar with the organisation and functioning of hydrological and meteorological services	[SW2] presentation/project/paper/ report [SW5] implementation of a problem task
	[GWOZWL3-W05] The student has advanced knowledge and understanding of assumptions of the ecosystem approach to management of the environment and human activities in the environment as well as the development directions in the field of applied solutions and scientific research for the protection and restoration of water resources in selected divisions of the national economy.	is able to apply the principles of the ecosystem approach to environmental management, and is familiar with the directions of development for the protection and restoration of water resources in selected sectors of the national economy	[SW2] presentation/project/paper/ report [SW5] implementation of a problem task
Subject contents	B. Exercise problems B.1. Water management options in areas with different water resources. B.2. Methods of water management in environments with different degrees of transformation. B.3. Methods of water management according to the needs of the national economy B. 4 Implications of water management in the natural environment. B.5. Measuring instruments for hydrometeorological monitoring prior to and during water management. B.6. Monitoring network in water management areas.		

Prerequisites and co-requisites	Key competences at upper secondary level, knowledge and skills in geography,	
Assessment methods and criteria		

Subject passing criteria	Passing threshold	Percentage of the final grade
credit work - essay	51.0%	50.0%
making a presentation	51.0%	50.0%

Recommended reading	Basic literature	Gutry-Korycka M., Werner-Więckowska H., 1989, Przewodnik do hydrograficznych badań terenowych, PWN, WarszwaKistowski M., 2004, Wybrane aspekty zarządzania ochrony przyrody w parkach krajobrazowych, BoguckiWydawnictwo Naukowe, Gdańsk-PoznańHydrographic map in the scale 1:50 000 with commentary.Mapa sozologiczna w skali 1:50 000 wraz z komentarzem.Mikulski Z., 1998, Gospodarka wodna, PWN, WarszawaObarska-Pempkowiak H., 2009, Ogólnopolska Konferencja Naukowa Inżynieria Ekologiczna, Gdańsk University of Technology,Lber DUO S.C., LublinPociask-Karteczka, 2006, Catchment, Properties and Processes, Jagiellonian University Publishing House, KrakowRodriguez-Iturbe I., Porporato, 2006, Ecohydrology of Water-Controlled Ecosystems, CambridgeWójcik A. R., 2008-2009, River Basin Management Plans as a tool for implementation of the Water Framework Directive, Information materials, RZGW, 2008-2009.Water Framework Directive, Information materials, RZGW, GliwiceA.2. studied independently by the studentGutry-Korycka M., Werner-Więckowska H., 1989, Guide to hydrographic field studies, PWN,WarsawKistowski M., 2004, Wybrane aspekty zarządzania ochrony przyrody w parkach krajobrazowych, Bogucki WydawnictwoNaukowe, Gdańsk-PoznańHydrographic map in the scale 1:50,000 with commentary.Mapa sozologiczna w skali 1:50 000 wraz z komentarzem.Mikulski Z., 1998, Gospodarka wodna, PWN, WarszawaPociask-Karteczka, 2006, Catchment, properties and processes, Wydawnictwo UJ, KrakówWójcik A. R., 2008-2009, Water Management Plans in River Basins as a tool for implementation of the Water Framework Directive.Water Framework Directive, Information materials, RZGW, Gliwice
	Supplementary literature	B. Supplementary literatureChlost I., Cieśliński R., 2018, Effects of environmental and anthropogenic determinants on changes in groundwater levels in selected peat bogs ofSlowinski National Park, northern Poland, Geologos 24, 1, 13-28.Cieśliński R., 2016, Changes in salinity and water level of Lake Jamno resulting from the construction of storm surge gates, Engineering and Environmental ProtectionEnvironment, 19 (4), 517-539, DOI: 10.17512/ios. 2016.4.7Cieśliński R., Przybylski M., 2017, Hydrochemical assessment of the ecological disaster on Lake Druzno and the Wąska River in 2014, CZASOPISMOLAND ENGINEERING, ENVIRONMENT AND ARCHITECTURE, JCEEA, , vol. XXXIV, z. 64 (2/II/17), 63-81.Duda F., Woźniak E., Jereczek-Korzeniewska K., Cieśliński R., 2017, Dynamics of water level fluctuations in degraded Baltic peatlands,Geological Review, Geological Review, 65 (8), 526-532.Jankowski A. T., Rzętała M., 2005, Lakes and artificial water reservoirs, natural processes and socio-economic significance, University ofŚląski, SosnowiecKowalczyk K., Cieśliński R., 2017, Utilization of the Hydroelectric Potential of the Pomorskie Voivodship, Regional Barometer, 15 (3), 73-83Kozerski B., 2007, Gdańsk Aquifer System, Gdansk University of Technology, Gdansk, PolandHydrographic map in the scale 1:50 000 with commentary.Sozological map in scale 1:50 000 with commentary.Mitsch W. J., Gosselink J. G., 2007, Wetlands, WileyRodriguez-Iturbe I., Porporato, 2006, Ecohydrology of Water-Controlled Ecosystems, CambridgeŻuławy Delta Wisły na przełomie millenci, 2001, zeszyt I, Żuławy Wiślane, a unique area in Poland and Europe, ECOBALITC Foundation, Gdańsk
	eResources addresses	

Example issues/ example questions/ tasks being completed	- Dwindling water resources - a problem of today or tomorrow - What forms of water management (methods) can and should "cure" water management? What will be the effects of these measures (examples)
Work placement	Not applicable

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