University of Gdańsk

Subject card

Subject name and code	Ordinary extraordinary water, PG_00140227		
Field of study	Historical game design		
Date of commencement of studies	October 2024	Academic year of realisation of subject	
Education level	Bachelor's studies	Subject group	Obligatory subject group in the field of study Optional subject group
Mode of study	full-time studies	Mode of delivery	e-learning
Year of study	3	Language of instruction	Polish Polish
Semester of study	5	ECTS credits	2.0
Learning profile	academic	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, prof. UG	
	Teachers	dr hab. Joanna Fac-Beneda, prof. UG	

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: 30.0

Additional information:

- multimedia lecture
- discussion

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	0.0	20.0	50

Subject objectives

To learn about the philosophy of water and the place and image of water in literature and art. Introducing new views on the physical state of water. Learning about the causes and geographical conditions of water circulation. To assess the size, distribution of water hazards and their resources. To learn about the organization and principles of environmental monitoring, factors that cause water pollution and its condition and quality standards. To gain knowledge of the fractal dimension of nature. To become familiar with global water management problems (including the war for water).

Learning outcomes

Course outcome	Subject outcome	Method of verification
	K_W03 The student identifies and describes the main research areas and achievements in modern geography (including the latest trends in the development of hydrological research in Poland and abroad), as well as the practical applications of scientific achievements in the field of hydrology K_W11 The student lists and explains the most important issues related to water pollution and contamination on a regional and global scale, and identifies their nature, origins, and possible consequences K_U01 The student uses scientific literature and applies geographical terminology in Polish in the field of hydrology K_U12 The student analyzes and evaluates the causes and course of changes occurring in the aquatic environment across various temporal and spatial scales K_K01 The student has an in-depth awareness of the level of their knowledge and skills and understands the need for continuous personal and professional development K_K04 The student demonstrates responsibility for their own preparation for work	[SK1] oral statement/conversation/ discussion [SK4] test/exam - oral or written

Subject contents

Water in philosophical terms. Water in literature and art.

Water as a chemical compoundWater as an unusual liquid.

Four states of aggregation of water.

Availability of water resources in terms of natural and anthropogenic conditions - water deficits and surpluses.

Water pollution - pollution outbreaks, water quality and related diseases.

Water protection - active and passiveIntegrated Monitoring of the Natural Environment (IMS) - water quality monitoring.

Basic hydrotechnical facilities and their impact on the water environment.

Elements of water law. Water Framework Directive and directions of water policy in the European Union.

GIS and thematic maps as a source of information about water.Fractal dimension of reality - topology and analysis of river networks.

Global, regional and local water wars - water as a defensive and offensive weapon.Extreme hydrological phenomena - droughts and floods.

Wetlands - small retention program.

Water management - virtual water.

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="2"></td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>essay</td><td>51.0%</td><td>100.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>• Chelmicki W., 2002, Water. Resources, degradation, protection. Wyd. Nauk PWN, Warsaw
• Dynowska I., Tlałka A., 1982, Hydrography, PWN, Warsaw-Poznań
• Fac-Beneda J., 2011, Young glacial hydrographic system, Wyd. UG, Gdańsk.
• Mikulski Z., 1998, Water management. Wyd. Nauk. PWN, Warsaw
• Pociask-Karteczka J., 2003, Catchment. Properties and processes, UJ, Krakow
• Towards efficent use of water resources in Europe, EEA Report No 1/2012, Copenhagen, http://www.eea.europa.eu
• Sultana F., Loftus A., 2012, The right to Water. Politics, governence and social struggles, Polish Humanitarian Action, Warszawa
• Environment of Europe 2010 - State and Outlook. Synthesis, EEA, Copenhagen, http://www.eea.europa.eu
• Allen J. D., 1998, Ecology of flowing waters, Wyd. Nauk. PWN, Warsaw.
• Bertalanffy L., 1984, General theory of systems: fundamentals, development, applications, PWN, Warsaw.
• Ciepielowski A., 1999, Fundamentals of water management. Wyd. SGGW, Warsaw
• DIRECTIVE 2000/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2000 establishing a framework for Community action in the field of water policy
• Morisawa M., 1985, Rivers, Longman, New York.
• Soczyńska U., 1990, Hydrological processes, PWN, Warsaw.</td></tr>
<tr><td>Supplementary literature</td><td>• Choiński A., Kaniecki A., 1996, Waters of the Earth, Great Encyclopedia of World Geography vol. IV, Kurpisz Publishers, Poznań.
• Kajak Z., 1979, Eutrophication of waters, PWN, Warsaw.
• Peitgen H.O., Jürgens H., Saupe D., 2002, Limits of chaos - fractals, part 1 and 2, PWN, Warsaw.
• Tomiałojć L., Drabiński A. (ed), 2005, Environmental aspects of water management, KOP PAN, Wrocław</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2">Theme free from the scope of the material.</td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
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