

**Subject card**

<b>Subject name and code</b>	Water Biology - field classes, PG_00201410						
<b>Field of study</b>	Water Management and Protection of Water Resources						
<b>Date of commencement of studies</b>	October 2026		<b>Academic year of realisation of subject</b>			2026/2027	
<b>Education level</b>	Bachelor's studies		<b>Subject group</b>			Obligatory subject group in the field of study Subject group related to practical vocational preparation	
<b>Mode of study</b>	full-time studies		<b>Mode of delivery</b>			at the university	
<b>Year of study</b>	1		<b>Language of instruction</b>			Polish	
<b>Semester of study</b>	2		<b>ECTS credits</b>			1.0	
<b>Learning profile</b>	practical		<b>Assessment form</b>			credit	
<b>Conducting unit</b>	Department of Marine Biology and Biotechnology -> Faculty of Oceanography and Geography -> Rector						
<b>Name and surname of lecturer (lecturers)</b>	<b>Subject supervisor</b>		dr Justyna Kobos				
	<b>Teachers</b>						
<b>Lesson types</b>	<b>Lesson type</b>	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	<b>Number of study hours</b>	0.0	15.0	0.0	0.0	0.0	15
	E-learning hours included: 0.0						
<b>Learning activity and number of study hours</b>	<b>Learning activity</b>	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	<b>Number of study hours</b>	15		1.0		9.0	25
<b>Subject objectives</b>	The aim of the class is to teach practical skills for working in the field (collection, preservation and description of samples) and in the biological laboratory (preparation of slides and biological analysis of collected material).						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GWOZWL3-W01] The student knows and understands 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.	knows and understands to an advanced degree the basic biological processes and phenomena, as well as analyzes their interrelationships and course in relation to the water environment and socio-economic systems	[SW1] oral statement/ conversation/discussion
	[GWOZWL3-U15] The student by solving in groups the assigned problem situations, is able to appropriately set priorities to achieve task defined by themselves or others.	by solving in groups the assigned problem situations related to the collection and analysis of environmental samples is able to correctly set priorities for the implementation of a specific task	[SU1] oral statement/conversation/ discussion
	[GWOZWL3-K05] The student has the ability take responsibility for the safety of their own work and that of others, dealing with emergencies, exercising caution in the laboratory and in the field, responsibility for entrusted equipment and apparatus.	is ready to take responsibility for the safety of his own work and that of others, to deal with emergencies, to be cautious in the laboratory and in the field, to be responsible for the entrusted equipment and apparatus used in the collection and analysis of biological samples	[SK1] oral statement/conversation/ discussion
	[GWOZWL3-U02] The student can select and independently apply basic research techniques and tools, with adhering to established analytical procedures in the field of environmental research in water management, adequately to the considered research problem.	is able to select and independently apply the basic techniques and research tools used in hydrobiology, with established analytical procedures, in the field of environmental research in water management	[SU1] oral statement/conversation/ discussion
[GWOZWL3-U01] The student can make basic observations of processes and phenomena occurring in the hydrosphere and carry out basic measurements of selected processes of water purification on a laboratory scale.	can carry out basic observations of processes and phenomena occurring in the aquatic environment	[SU1] oral statement/conversation/ discussion	
Subject contents	<p>The problems of the exercises concern:</p> <ol style="list-style-type: none"> <li>1. The ability to properly determine the location and collection of environmental samples (selection of instruments, maintenance, description, proper transportation and storage of samples).</li> <li>2. The ability to prepare preparations and analyze samples taken from the environment under laboratory conditions.</li> <li>3. To learn about the interdependence of aquatic organisms and their relationship with the environment.</li> </ol>		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	worksheets, discussion	51.0%	100.0%
Recommended reading	Basic literature	<p>Burchardt L., 2010, Klucz do oznaczania gatunków fitoplanktonu jezior i rzek - Przewodnik do ćwiczeń laboratoryjnych i badań terenowych. Bogucki Wydawnictwo Naukowe, Poznań</p> <p>Kołada A. [red], 2020, Podręcznik do monitoringu elementów biologicznych i klasyfikacji stanu ekologicznego wód powierzchniowych - aktualizacja metod. Biblioteka Monitoringu Środowiska, Warszawa</p>	

	Supplementary literature	<p>Bąk M., Witkowski A., Żelazna-Wieczorek J., Wojtal A. Z., Szczepocka E., Szulc K., Szulc B. 2012. Klucz do oznaczania okrzemek w fitobentosie na potrzeby oceny stanu ekologicznego wód powierzchniowych w Polsce Główny Inspektorat Ochrony Środowiska, Warszawa</p> <p>Bucka H., Wilk-Woźniak E. 2002. Gatunki kosmopolityczne i ubikwistyczne wśród glonów pro- i eukariotycznych występujących w zbiornikach wodnych Polski południowej. Zakład Biologii Wód PAN, Kraków</p> <p>Picińska-Fałtynowicz J., Błachuta J. 2012a. Klucz do identyfikacji organizmów fitoplanktonowych z rzek i jezior dla celów badań monitoringowych części wód powierzchniowych w Polsce. Biblioteka Monitoringu Środowiska, Warszawa</p> <p>Picińska-Fałtynowicz J., Błachuta J. 2012b. Wytyczne metodyczne do przeprowadzania badań fitoplanktonu i oceny stanu ekologicznego rzek na jego podstawie. Główny Inspektorat Ochrony Środowiska. Warszawa.</p> <p>Szoszkiewicz K., Zbierska J., Jusik S., Zgoła T., 2010b. Makrofitowa Metoda Oceny Rzek. Podręcznik metodyczny do oceny i klasyfikacji stanu ekologicznego wód płynących w oparciu o rośliny wodne. Bogucki Wydawnictwo Naukowe, Poznań</p>
Example issues/ example questions/ tasks being completed	eResources addresses	
Work placement	Not applicable	

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