

Subject card

Subject name and code	Copy Hydrophysics - laboratory exercises, PG_00091497						
Field of study	Water Management and Protection of Water Resources						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Subject group related to scientific research 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	1		Language of instruction		Polish		
Semester of study	2		ECTS credits		1.0		
Learning profile	practical		Assessment form				
Conducting unit	Department of Geophysics -> Faculty of Oceanography and Geography -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		mgr Aleksandra Malecha-Lysakowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	15.0	0.0	0.0	15
	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	15		2.0		3.0	20
Subject objectives	1 To familiarise students with basic physical phenomena and processes, the laws governing them and the methods of their study. 2. To learn and understand the basic laws responsible for physical phenomena occurring in the hydrosphere. 3. To impart knowledge and develop skills necessary to: - to use mathematical apparatus to describe physical phenomena; - to make natural observations, to analyse and interpret them. 4. To lay the foundations for the effective study of further courses						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[GWOZWL3-K05] 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	K_K05 - Is willing to take responsibility for work safety and to be careful in the laboratory and for the equipment and apparatus entrusted to him/her (Ref. Content - point B3)	[SK8] observation of student's independent or team work
	[GWOZWL3-U16] demonstrate creativity in working independently and in team, taking on a variety of roles, including a leadership role	K_U01 - Able to carry out basic observations of physical processes and phenomena in the laboratory (related to content - point B3)	[SU1] oral statement/conversation/discussion
	[GWOZWL3-U02] 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	K_U07 - Able to use the literature and other available sources of information in physics and to select and critically evaluate information (concerning content substantive content - para. A1, B1 and B3)	[SU6] demonstration of practical skills
	[GWOZWL3-U07] use literature and other available sources of information, including information technology, multimedia, Internet, databases, and select and critically evaluate information	K_U02 - Can select and independently apply basic research techniques and tools, with established analytical procedures, in environmental research in water management	[SU2] presentation/project/paper/report
	[GWOZWL3-U01] 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	K_U16 - Can demonstrate creativity in working independently and in teams, taking on different roles	[SU8] observation of student's independent or team work
Subject contents	B3. Laboratory (15 hours): B.3.1 Laboratory measurements and measurement uncertainty rasch. B.3.2 Laboratory exercises will address selected topics listed in A.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	report	51.0%	100.0%
Recommended reading	Basic literature	1. Szydłowski H. [red.], 1981, Teoria pomiarów, PWN Warszawa.	
	Supplementary literature	1. D. Halliday, R. Resnick, J. Walker, <i>Podstawy Fizyki</i> , Wydawnictwo Naukowe PWN, W-wa 2003	
	eResources addresses		
Example issues/ example questions/ tasks being completed	Dynamics: 1. coefficient of friction; 2. mathematical pendulum. Heat: 3. specific heat; 4. the time constant of a thermometer. Selected macroscopic properties of matter: 5. speed of sound; 6. gas constant.		
Work placement	Not applicable		

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