



Subject card

Subject name and code	, PG_00046178						
Field of study	Coastal and Offshore Engineering, Coastal and Offshore Engineering						
Date of commencement of studies	February 2022	Academic year of realisation of subject			2021/2022		
Education level	second-cycle studies	Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish		
Semester of study	1	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Geodesy -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Tadeusz Widerski					
	Teachers	dr inż. Tadeusz Widerski dr inż. Marek Zienkiewicz prof. dr hab. inż. Andrzej Stateczny					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	15.0	0.0	45
	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	45	5.0		25.0	75	
Subject objectives	Understanding the importance and scope of geodetic measurements of hydrotechnical structures. Conducting geodetic periodic measurements and continuous observations of various types of hydrotechnical buildings. Simplified analysis of the results of displacement measurements of hydrotechnical constructions.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	K7_W02	Knows the methods of measuring displacements of hydrotechnical constructions of various construction and foundation method.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge		
	K7_U11	Is able to develop a geodetic survey of displacement measurements of a hydrotechnical building.			[SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
	K7_U05	Is able to choose and justify the choice of method for measuring the displacement of engineering structures.			[SU4] Assessment of ability to use methods and tools		
	K7_U08	Is able to make control measurements of selected elements of hydrotechnical constructions.			[SU3] Assessment of ability to use knowledge gained from the subject		
Subject contents	<p>Types of hydrotechnical constructions.</p> <p>Conditions and stages of construction works - hydrotechnical objects.</p> <p>The nature of loads on hydrotechnical constructions depending on the location and season.</p> <p>Location of measuring points on the building depending on the type of construction and operation.</p> <p>Periodic measurements of building movements.</p> <p>Basic monitoring of selected hydrotechnical constructions.</p> <p>Simplified interpretation of displacement measurement results.</p>						

Prerequisites and co-requisites	Basic knowledge of measuring.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Passing exercises and measurements	75.0%	40.0%
	Completing colloquium from lectures	65.0%	60.0%
Recommended reading	Basic literature	<p>1. Hueckel S.: Zarys hydrotechniki morskiej. Wyd. Morskie. 1976</p> <p>2. Bryś H.: Geodezyjne pomiary odkształceń i przemieszczeń zapór wodnych. Pol. Krakowska. Kraków, 1996</p> <p>3. Żurowski A.: Pomiary geodezyjne w budownictwie morskim. Wyd. Morskie, 1980</p> <p>4. Lewko E.: <i>Portowe roboty czerpalne i podwodne</i>. Gdynia Wyd. Akademii Morskiej 2006</p> <p>5. Geodezja Inżynierska. Obsługa geodezyjna inwestycji i pomiary przemieszczeń. Seria Archiwum Geomatyki. PG. Gd.</p>	
	Supplementary literature	<p>1. Fiedler K. (red. Praca zbiorowa): Awarie i katastrofy zapór - zagrożenia, ich przyczyny i skutki oraz działania zapobiegawcze. IMiGW, W-wa, 2007</p> <p>2. Massel S. (red. Praca zbiorowa): Poradnik Hydrotechnika. Obciążenia budowli hydrotechnicznych wywołane przez środowisko morskie. Wyd. Morskie, 1992</p> <p>3. Magda W.: Rurociągi podmorskie. Zasady projektowania. WN-T W-wa, 2004</p> <p>4. Inżynieria Morska i Geotechnika. Czasopismo.</p>	
	eResources addresses		
Example issues/ example questions/ tasks being completed	<p>1. Location of measuring points on the building depending on its type and purpose.</p> <p>2. Methods for measuring displacements of hydrotechnical constructions.</p> <p>3. The basic scope of displacement monitoring of a selected hydrotechnical structure.</p>		
Work placement	Not applicable		