GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	Master thesis, PG_00059965						
Field of study	Environmental Engineering						
Date of commencement of studies	February 2025		Academic year of realisation of subject	2025/2026			
Education level	second-cycle studies		Subject group				
Mode of study	Full-time studies		Mode of delivery	at the university			
Year of study	2		Language of instruction	Polish			
Semester of study	3		ECTS credits	18.0			
Learning profile	general academic profile		Assessment form	assessment			
Conducting unit	Department of Geotechnical and Hydraulic Engineering -> Faculty of Civil and Environmental Engineering -> Faculties of Gdańsk University of Technology						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. inż. Katarzyna Weinerowska-Bords				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	0.0	0.0	0.0	0.0	0
	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	0		30.0		420.0	450
Subject objectives	Creation of a diploma thesis. Preparing a presentation of the diploma thesis.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[K7_W10] has knowledge of the protection and management of intellectual, industrial and copyright resources	The student knows the regulations of copyright law, understands the need for reliable documentation of the sources used, is able to correctly refer to bibliography and other data sources, and knows the objectives, principles and consequences of using GenAI tools and the methods of documenting them.	[SW3] Assessment of knowledge contained in written work and projects [SW2] Assessment of knowledge contained in presentation
	[K7_U05] can rely on scientific sources for modern methods and technologies, and propose trends in the development of methods and rules for acquiring, filtering, processing and analyzing data	Student is able to find and apply knowledge about methods and technologies related to the topic of the diploma thesis, originating from scientific sources - Student reviews the literature, draws conclusions, skillfully selects the necessary information and uses it for the needs of his/her own analyses. Additionally, Student is able to notice or predict future needs and directions of development in the scope of the analyzed topic or propose his/her own solutions, modifications of existing methods.	[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools
	K7_U09	Student, based on the literature review and analysis of the state-of-art in the field of the topic of his/her diploma thesis, is able to indicate current needs in the field of further work on the analyzed issue, including - the direction of self-development in the professional field. The student is able to formulate the goal of his/her work, prepare a work schedule and effectively complete the required stages of creating a diploma thesis and its presentation for defense.	[SU1] Assessment of task fulfilment [SU5] Assessment of ability to present the results of task
	[K7_U01] can obtain information from literature, databases and other sources; can integrate the obtained information, interpret and critically evaluate them, draw conclusions, and formulate and comprehesively justify the opinions	Student knows various sources and methods of obtaining information and data needed to carry out his/her work, is able to use them (search resources, select necessary elements, describe them in the thesis), verify, critically evaluate, reflect on inconsistent information from different sources and draw conclusions supported by factual argumentation.	[SU2] Assessment of ability to analyse information [SU5] Assessment of ability to present the results of task [SU1] Assessment of task fulfilment
	[K7_W12] has knowledge of contemporary and useful principles on data acquisition, filtration, processing and analysis	Student knows the sources (literature, databases, available websites,institutions etc.) and methods of obtaining information and numerical data, is able to verify them, analyze them (including - if necessary - statistical analysis) and draw conclusions. The student knows how to present data used in the diploma thesis in graphical and/or descriptive form.	[SW2] Assessment of knowledge contained in presentation [SW3] Assessment of knowledge contained in written work and projects
Subject contents			
Prerequisites and co-requisites	Knowledge and engineering skills in the field of the subjects covered by the study program, with particular emphasis on subjects related to the selected topic of the diploma thesis.		

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Assessment criteria according to university guidelines (including completeness and correctness of the work's objective, work structure, work language, selection of literature, etc.)	60.0%	100.0%

Recommended reading		
	Basic literature	The list of bibliography depends on the specific topic of the diploma thesis. Sample list of bibliography: 1. Błaszczyk W. (1983) Kanalizacja. Sieci i pompownie. T.1. 2. Edel R. (2002) Odwodnienie dróg. Wydaw. Komunik. i Łączn. Warszawa. 3. Weinerowska-Bords (2010) Wpływ uproszczeń na obliczanie spływu deszczowego w zlewni zurbanizowanej, Wydawnictwo Politechniki Gdańskiej, Gdańsk. 4. Weinerowska-Bords (2022) Hydrologia obszarów miejskich opowiedziana inaczej, Wydawnictwo Politechniki Gdańskiej, Gdańsk. 5. Kotowski A. (2011): Podstawy bezpiecznego wymiarowania odwodnień terenów, Wydawnictwo Seidel-Przywecki Sp. z o.o. , Warszawa. 6. Ogród deszczowy w 5 krokach. Broszura informacyjna Gdańskich Wód 7.Geiger W., Dreseitl H. (1999): Nowe sposoby odprowadzania wód deszczowych. Poradnik retencjonowania i infiltracji wód deszczowych do gruntu na terenie zabudowanym. Oficyna Wydawnicza Projprzem-EKO, Bydgoszcz. 8. Królikowska J., Królikowski A. (2019): Wody opadowe. Odprowadzanie, zagospodarowanie, podczyszczanie i wykorzystanie. Wydawnictwo Seidel-Przywecki Sp. z o.o., Warszawa. 9. Słyś D. (2008): Retencja i infiltracja wód deszczowych, Oficyna Wydawnicza Politechniki Rzeszowskiej, Rzeszów. 10. Gajewska M. i in. (2022), System powierzchniowej retencji miejskiej w adaptacji miast do zmian klimatu od wizji do wdrożenia, Wyd. PG., Gdańsk. 11.Wojciechowska E. i in. (2015), Zrównoważone systemy gospodarowania wodą opadową, Wyd. PG, Gdańsk
	Supplementary literature	The list of supplementary bibliography depends on the specific topic of the diploma thesis. Sample list of bibliography: 1. Bajkiewicz-Grabowska E., Magnuszewski A. (2002) *Przewodnik do ćwiczeń z hydrologii ogólnej*. PWN. Warszawa. 2. Suligowski Z. (2006): *Infrastruktura kanalizacyjna w gospodarce komunalnej*. Wydawnictwo Politechniki Gdańskiej, Gdańsk. 3. Dębski K. (1961) *Charakterystyka hydrologiczna Polski*. PWN. Łódź. 4. Ozga-Zielińska M. , Brzeziński J. (1994) *Hydrologia stosowana* PWN, Warszawa. 5. Soczyńska U. (1997): *Hydrologia dynamiczna*, PWN. Warszawa. 6. Lambor J. (1971) *Hydrologia inżynierska* Arkady. Warszawa 7. Imhoff K. (1982): *Kanalizacja miast i oczyszczalnie ścieków*, Poradnik, Arkady, Warszawa.

	eResources addresses	
Example issues/ example questions/ tasks being completed	Examples of issues in the case of a thesis topic concerning the calculation of runoff and management of stormwater in a selected urban area: 1. Introduction to the issue (general description of the problem, engineering context, literature review, current state of knowledge) 2. Analysis of the selected area, hydrological characteristics, assessment of the area's potential and threats in the context of stormwater runoff 3. Calculations of the amount of stormwater (analysis of methods, results, conclusions) 4. Proposal for stormwater management, assessment of the effectiveness of the proposed solution. 5. Final conclusions.	
Practical activites within the subject	Not applicable	

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