GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	, PG_00058746		
Field of study	Environmental Engineering		
Date of commencement of studies	October 2022	Academic year of realisation of subject	2022/2023
Education level	first-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	2	ECTS credits	2.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Department of Environmental Engineering Technology -> Faculty of Civil and Environmental Engineering		
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Eliza Kulbat	
	Teachers	dr inż. Wojciech Artichowicz dr hab. inż. Eliza Kulbat	

Lesson types and methods of instruction

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	15.0	0.0	0.0	30

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	30	5.0	20.0	55

Subject objectives

The purpose of the course is to familiarize students with the basics of statistical data analysis.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K6_W01] has knowledge in the field of mathematics, including: linear algebra, mathematical analysis and elements of mathematical statistics, probability theory, applications of mathematics, including mathematical methods and numerical methods, necessary for: 1) description and analysis of hydrological phenomena; 2) description and analysis of meteorological phenomena; 3) solving project tasks of the sanitary industry;	The student has knowledge in mathematics, including: linear algebra, mathematical analysis and elements of mathematical statistics, probability calculus, applications of mathematics, including mathematical methods and numerical methods, necessary to describe and analyze hydrological and meteorological phenomena, solve design tasks of the sanitary industry and analyze environmental data.	[SW1] Assessment of factual knowledge [SW3] Assessment of knowledge contained in written work and projects
[K6_U01] has the ability to self-education, can obtain information from literature, databases and other sources, uses information technology, Internet resources; can integrate the obtained information, make their interpretation, as well as draw conclusions and formulate and justify opinions	The student has the ability to self-educate, is able to obtain information from the literature, databases and other sources, uses information technology, Internet resources; is able to integrate the obtained information, interpret it, as well as draw conclusions and formulate and justify opinions.	[SU2] Assessment of ability to analyse information [SU4] Assessment of ability to use methods and tools

Subject contents

Preliminary data analysis: graphical representation of data, position and dispersion indices, random variable, probability. Basics of statistical inference: point and interval estimation. Visualization. Elements of machine learning.

Prerequisites and co-requisites

Knowledge of high school mathematics.

Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	solution of tasks	60.0%	50.0%
	test	60.0%	50.0%
Recommended reading	Basic literature	Koronacki J., Mielniczuk J., Statistics for engineering and science students, Wyd. Naukowo-Tech., Warszawa 2001 (in polish)	
	Supplementary literature	Łomnicki A., Introduction to statistics for natural scientists, PWN, 2023 (in polish)	
	eResources addresses	Adresy na platformie eNauczanie: Statystyczna analiza danych (IŚ, sII, stacj., 22/23) - Moodle ID: 29262 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=29262	
Example issues/ example questions/ tasks being completed	Calculation of descriptive statistics for a selected set of data. Application of the logarithmic scale. Box plots. Use of spreadsheets. The basics of the Python programming language.		
Work placement	Not applicable		