



## Subject card

Subject name and code	Essentials of Computer Science I, PG_00042612						
Field of study	Environmental Engineering						
Date of commencement of studies	October 2021		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	Part-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		3.0		
Learning profile	general academic profile		Assessment form		assessment		
Conducting unit	Faculty Of Civil And Environmental Engineering -> Wydziały Politechniki Gdańskiej						
Name and surname of lecturer (lecturers)	Subject supervisor		dr inż. Wojciech Artichowicz				
	Teachers		dr inż. Wojciech Artichowicz				
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	10.0	0.0	0.0	25
	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	25		4.0		50.0	79
Subject objectives	Acquaint the student with the principles of working with Office-type packages in order to prepare text documents, spreadsheets, multimedia presentations and databases. Introduction to basic numerical methods for solving nonlinear equations, systems of linear and nonlinear equations, interpolation and approximation methods, methods for numerical integration and elements of optimization .						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K6_W15] knows and understands the methods of measuring basic quantities characteristic for fluid mechanics and hydraulics, hydrology; knows the calculation methods and IT tools necessary to analyze the results of laboratory and field work		The student is able to visualize and analyze the results of hydraulic and hydrological measurements.		[SW3] Assessment of knowledge contained in written work and projects		
	[K6_W06] has a structured and theoretically founded knowledge in the field of computer science, numerical methods and the possibilities of their applications for solving tasks, description of phenomena related to the flow of water in the environment, in open pipes and channels, filtration, migration of pollutants		Student has the knowledge about the basic numerical methods and has the ability to implement them in the spreadsheet.		[SW3] Assessment of knowledge contained in written work and projects		
	[K6_U11] can use selected computer programs to support design, including CAD graphics programs		The student is able to use the advanced capabilities of the office suite.		[SU2] Assessment of ability to analyse information [SU3] Assessment of ability to use knowledge gained from the subject [SU4] Assessment of ability to use methods and tools [SU5] Assessment of ability to present the results of task		
Subject contents	LECTURE Fundamentals of computer algebra systems. Rules for creating text documents. Basic concepts of typography. Creating text documents in a text editor. Creating equations in text editors. Basics of creating a presentation. Basics of vector graphics. Password security and data security.						

Prerequisites and co-requisites	Knowledge of basics computer and operating system service, Windows or Linux. Knowledge of the basics of Mathematics, and Hydraulics.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	complete lecture	60.0%	50.0%
	complete laboratory	100.0%	50.0%
Recommended reading	Basic literature	Tutorials placed in eLearning platform	
	Supplementary literature	1) Libre Office Calc built-in help 2) The PC Is Not a Typewriter: A Style Manual for Creating Professional-Level Type on Your Personal Computer. Robin Williams 3) Introduction to computational engineering hydraulics. Romuald Szymkiewicz, Suiliang Huang, Adam Szymkiewicz. GUT Publishing House	
	eResources addresses	Adresy na platformie eNauczanie: Podstawy Informatyki sem. III, IŚ, INŻ., n-stacj - Moodle ID: 25814 <a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25814">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=25814</a>	
Example issues/ example questions/ tasks being completed	Automatization of the document creation  Solution of the ordinary differential equation with the Euler's and trapezoidal methods  Determination of the loss coefficient using the Colebrook-White's formula  Analiza danych hydrologicznych (stany wody)		
Work placement	Not applicable		

Document generated electronically. Does not require a seal or signature.