



Subject card

Subject name and code	Informatics, PG_00044541						
Field of study	Transport						
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		
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			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Structural Mechanics Department -> Faculty of Civil and Environmental Engineering						
Name and surname of lecturer (lecturers)	Subject supervisor	dr hab. inż. Izabela Lubowiecka					
	Teachers	dr inż. Katarzyna Szepietowska dr inż. Tomasz Falborski mgr inż. Łukasz Żmuda-Trzebiatowski dr inż. Daniel Burkacki dr hab. inż. Izabela Lubowiecka					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	15.0	0.0	30.0	0.0	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	1. Matlab programming and using of MATLAB environment 2. Application of Matlab language in solving engineering problems 3. Programming in Python 4. Application of programmig tools in transport						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_W04] has basic knowledge of informatics, electronics, telecommunications, automation and control, information technologies, computer graphics, geodesy and satellite navigation which is useful for understanding how it can be applied in transport	1. Basic knowledge about general concepts of computer science 2. Knowledge of the bases of programming.			[SW1] Assessment of factual knowledge		
	[K6_U05] able to use IT and graphic techniques typically used for the design, construction, operation and diagnosis of means and systems of transport	Ability to use Matlab language in solving engineering problems 2. Ability to use Matlab libraries 3. Skills in Python application to solving problems engineering.			[SU4] Assessment of ability to use methods and tools [SU2] Assessment of ability to analyse information [SU1] Assessment of task fulfilment		
Subject contents	1. Basic programming concepts, algorithms, data structures. 2. Basics of Matlab language - general information; environment and use of the Matlab environment, libraries and tools; language syntax and basic instructions; definitions of variables, arithmetic operators; operations of entry / exit; linear algebra; graphics; control instructions; script construction; applications for analysis engineering problems. 2. Basics of the Python language - basic instructions; the basics of programming; scripts, applications language for controlling software of an engineering nature used in the field of transport.						

Prerequisites and co-requisites	1. Skills in using computers. 2. Basics of linear algebra.		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Python	60.0%	50.0%
	Matlab	60.0%	50.0%
Recommended reading	Basic literature	1. Basic material will be available at the university website service OKNO or during the labs hours. 2. Lubowiecka I., Ambroziak A. [2016]: Matlab and its environment, Gdańsk University of Technology Publisher, Gdańsk. [in Polish] 3. Jankowski R., Lubowiecka I., Witkowski W. [2003]: Basic programming in Matlab language, skrypt, Gdańsk. [in Polish] 4. MATLAB-The Language of Technical Computing. User's manual. 5. Pratap R. [2009]: Matlab 7 dla naukowców i inżynierów. PWN, Warszawa. 6. Chris Fehily: Po prostu Python. Helion 2002.	
	Supplementary literature	1. Zalewski A., Cegielka R.: Matlab - numerical calculation and application. Wydawnictwo Nakom, Poznań 1997. [in Polish] 2. Harel D. [1992]: Rzecz o istocie informatyki. [in Polish]	
	eResources addresses	Adresy na platformie eNauczanie:	
Example issues/ example questions/ tasks being completed	1. Scripting in Matlab and Python 2. Implementation of the specified algorithm in Matlab and Python		
Work placement	Not applicable		