



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 universoty website service OKNO or during the labs hours. 2. Lubowiecka I., Ambroziak A. [2016]: Matlab and its evironment, 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		