University of Gdańsk

Subject card

Subject name and code	Computation Programming I, PG_00119669		
Field of study	Economics		
Date of commencement of studies	October 2024	Academic year of realisation of subject	2024/2025
Education level	Master's studies	Subject group	Obligatory subject group in the field of study Specialty subject group
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	1.0
Learning profile	academic	Assessment form	credit
Conducting unit			
Name and surname of lecturer (lecturers)	Subject supervisor	dr Dorota Buchnowska	
	Teachers	dr Dorota Buchnowska	

Lesson types							
	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	15.0	0.0	0.0	0.0	15
	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	15	0.0	0.0	15

Subject objectives	Acquiring programming skills in Python to prepare for data analysis and visualization.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[EKONMU2_U03] can analyse causes and course of economic and social processes and phenomena, formulate his/her own opinions on the subject, construct research hypotheses, and select and apply methods of their verification	Is able to select appropriate data analysis methods and algorithms for a specific problem and implement data processing algorithms in Python	[SU2] presentation/project/paper/ report [SU8] observation of student's independent or team work
[EKONMU2_K01] recognises the importance of knowledge in the field of economics in the process of identifying and solving economic problems and of consulting experts when having difficulties in solving them independently	Recognizes the importance of knowledge in the field of economics and statistics in the process of solving economic problems using Python and seeking the opinion of experts in case of difficulties in solving them on their own	[SK8] observation of student's independent or team work
[EKONMU2_U01] can creatively interpret and explain economic and social phenomena and relations between them, using acquired knowledge of economics, finance and management sciences	Is able to process and visualize data using Python for the purpose of explaining economic and social phenomena and the relationships between them	[SU2] presentation/project/paper/ report [SU8] observation of student's independent or team work
[EKONMU2_K02] is aware of the level of their knowledge in the area of solving complex problems in economic,; understands the need to extend and update this knowledge throughout his/her life	Is aware of the level of his knowledge and skills in the field of data processing using Python to solve economic problems, understands the need to deepen and update this knowledge and increase skills throughout life	[SK2] presentation/project/paper/ report
[EKONMU2_U04] can forecast and model complex economic and social processes using quantitative and qualitative methods and tools developed by economic sciences (including statistics and econometrics)	Is able to perform statistical calculations for the purposes of forecasting and modeling economic and social processes using appropriate Python libraries	[SU2] presentation/project/paper/ report
[EKONMU2_W06] knowsin advanced stage statistical and econometric methods and tools for description and macro- and microeconomic modelling of economic structures and public institutions and processes occurring in them	Knows and understands data processing methods and algorithms as well as the possibilities and ways of their application in the field of macro- and microeconomic description of economic structures and public institutions and the processes occurring in them	[SW2] presentation/project/paper/ report
[EKONMU2_U15] can independently expand and improve acquired knowledge and skills in economics; is open to new ideas and techniques; tends to learn using any accessible method and to interact with other participants of the learning process	Is able to independently supplement and improve acquired knowledge and skills in the field of methods, algorithms and data processing tools for the purposes of analyzing and explaining economic and social phenomena	[SU2] presentation/project/paper/ report
[EKONMU2_U08] can independently analyse economic and social phenomena and processes, and can perform a theoretically deepened assessment of such phenomena, using appropriately selected research method	Is able to independently analyze economic and social phenomena and processes using Python	[SU2] presentation/project/paper/ report [SU8] observation of student's independent or team work

Subject contents

Basic data types in Python.Numeric types - mathematical operators, functions and standard methods.Working with text data (combining, dividing, formatting) - creating simple reports.Instructions controlling the program flow - conditional commands, loops.Operations on lists, tuples, dictionaries and sets.Working with the Pandas library - importing data, initial data exploration, data transformations, creating charts.

Prerequisites and co-requisites

Basic knowledge of economics, management and statistics. Basic skills in data analysis (e.g. spreadsheets).

Assessment methods and criteria

Subject passing criteria	Passing threshold	Percentage of the final grade
tasks performed during classes	81.0%	50.0%
final project	51.0%	50.0%

Recommended reading	Basic literature	Gągolewski M., Bartoszuk M.,Cena A., Przetwarzanie i analiza danych w języku Python, Wydawnictwo Naukowe PWN, Warszawa 2016. https://pl.python.org/
	Supplementary literature	Wdowiński P., Wstęp do programowania i analizy danych w języku R, Wydawnictwo Uniwersytetu Łódzkiego, Łódź 2020. Materiały prowadzącego zajęcia. Buchnowska D.: Systemy CRM i analityka biznesowa, W: Informatyka ekonomiczna: teoria i zastosowania / Wrycza S., Maślankowski J. (red.), PWN, Warszawa, 2019.
	eResources addresses	Basic https://pl.python.org/ - Python documentation
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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