Obuda University John von Neumann Faculty of Informatics			Software Engineering Institute	
Name and code: *NIWPP1HBNE Python for Programmers*			**Credits*:*** *2021/22 year I. semester*	
Subject lecturers: Gábor Kertész, Peter Juma Ochieng				
Prerequisites (with code):				
Weekly hours:	Lecture: 0	Seminar.:0	Lab. hours: 3	Consultation:0
Way of assessment:	mid-term mark			

Course description:

Goal: Provide an introduction to the Python programming language for computer scientists with a solid knowledge of algorithms and software development.

Course description: The course provides an in-depth introduction to the Python programming language for those who have a solid knowledge of programming. The course starts with a brief overview of the structure, syntax and building blocks of the Python environment, including data types, data structures and modern tools. This is followed by introducing a few popular libraries, including numpy and pandas. In the second half of the semester, students will learn about object-oriented programming in Python, parallelization and test-driven development.

Lecture schedule

Education week	*Topic*
1.	Introduction, overview, development environments, basic syntax
2.	List, tuple, dictionary, set. Functions, lambda functions, list comprehension.
3.	IPython. Jupyter Notebooks, Jupyter Lab. Virtual environments.
4.	Introduction to NumPy, ndarray.
5.	Introduction to pandas, dataframe, series.
6.	Files: read/write. Pickle. Exception handling.
7.	OOP in Python: classes, inheritance, polymorphism.
8.	Custom modules.
9.	Parallelism in Python. Synchronization.
10.	Basics of testing. Unit testing in Python.
11.	Practice, use-cases.
12.	Midterm
13.	Midterm re-take

Midterm requirements

Education week	*Topic*
12th week	**practical test**

Final grade calculation methods

Achieved result	Grade
89%-100%	excellent (5)
76%-88<%	good (4)
63%-75<%	average (3)
51%-62<%	satisfactory (2)
0%-50<%	failed (1)

Type of exam

Practical test to solve a given task using Python.

Type of replacement

Retake of the midterm on the last week.

References

Mandatory:

Recommended: Slatkin, Brett. Effective python: 90 specific ways to write better python. Addison-Wesley Professional, 2019.
Deitel, Harvey, Paul Deitel, and Paul J. Deitel. Python for Programmers. Prentice Hall, 2019.
Danjou, Julien. Serious Python. No Starch Press, 2018.